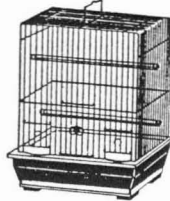
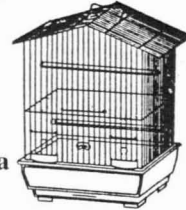


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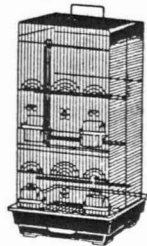
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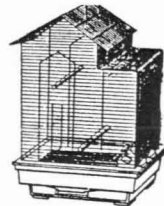
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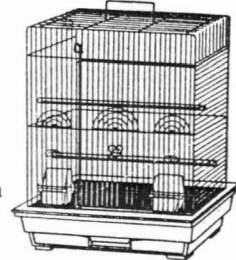
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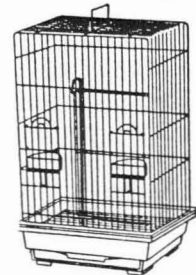


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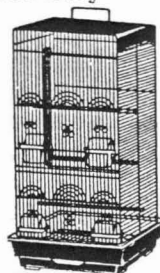


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# Prenatal Medical Management

## PART III

by Robert C. Clipsham, D.V.M.  
California Exotics Clinic  
Simi Valley, California

### Neonate Physical Examination Parent Hatched:

Eggs left under the hen should be checked for signs of pipping daily and candled simultaneously. Parents should be evaluated prior to hatch for behavioral patterns, such as sitting the nest tightly and anxiety levels, as problem parents may not accept chicks readily. Once the first chick is hatched, close monitoring of parenting is required to assure that chicks are being brooded and fed during the first 12 hours. An empty crop at the end of 12 hours is reason to pull chicks for artificial brooding. Subsequent chicks should be checked just as closely for good parenting. Any problems that are noted, such as abandonment, cannibalism, mutilation or stunting, dictate that a review of the environment and management be undertaken. Reasons that may have elicited poor chick care by pairs are often manmade. The following items should be reviewed by the ranch manager:

- boxes too hot (i.e., unprotected from direct sun, poor ventilation, etc.)
- chicks too cold (i.e., shallow shavings, poorly ventilated nest box)
- irregular feeding of pairs by crew
- disturbance of pairs by workers or other birds
- nest box too shallow
- (threat level unacceptable to pair)
- low ambient humidity (rare)

Chick development under the hen should exceed that of hand raised babies for at least the first seven days up to two weeks of age. Growth rates should be comparable from then on and any evidence of stunting or trauma should be regarded as a seri-

ous threat to the chicks and those surviving should be pulled until a diagnosis can be achieved. Parents should constantly groom chicks and healthy babies should be completely free of feces and dried food. Any presence of debris should spark further investigation.

Those parents that persist in abandoning chicks or mutilating them despite changes in management may be poor parents and culling must be evaluated as a legitimate solution if all other factors have been stabilized. Be aware that chicks that refuse to eat due to chilling or illness may be attacked by the parents out of frustration. Species most often noted to traumatize chicks include macaws, Amazons and cockatoos. This prevalence may represent temperament or a heavily represented portion of birds being captive bred.

The previous assumptions that wild chicks grow and fledge more slowly has been disproven by two field surveys where Yellow-naped Amazons and Orange-front Conures had growth curves similar to chicks in captivity. Wild Yellow-naped Amazons were observed to be fed only twice a day (9:30 to 10:00 a.m. and 6:00 to 6:30 p.m.) and parent contact was extremely limited during the first several weeks of life, presumably to decrease the risk of predation. Other observations of wild hatched chicks include the presence of occasional stress bars, slight dehydration and one incidence of fly strike in feather follicles. These observations should disperse some of the myths concerning the retarded or accelerated growth potential some aviculturists feel has been artificially altered in captive breeding programs.

Average daily weight gain in handfed psittacines should be around 15% for the first three to four weeks of life. However, this is an average and higher weight gains may be noted in early weeks and lower weight gains recorded later. Weight loss will be noted at the onset of the weaning phase (during the last two to four weeks of hand feeding). Weight loss should average 10% to 15% of the total body weight, but 20% may be normal for some large species, particularly noted in macaws. Particular caution should be exercised during the weaning process as it is physiologically stressful to the baby.

### Hand Raised Offspring:

Record keeping is of prime importance for accurate hand care of psittacine offspring. The rate of development is substantially greater during the neonatal period than mammals or even precocial birds due to their high level of dependency and relatively under developed state at hatch.

Daily records should include the ease or difficulty of hatching, final hatch date and embryonic age, weight (prefeeding), crop empty rate, food volume accepted each feeding and day, diet used and a complete physical examination and work up.

The physical examination should be conducted with clean, warm hands on an insulated surface, such as a towel, as altricial chicks chill easily due to their high metabolic rate, lack of feathering and small body mass. Sick babies chill even more quickly as their thermostasis may be disrupted. The physical examination should include such environmental factors as the brooder, bedding material, ambient humidity, thermometer placement and quality, sanitation protocol and all clutchmates.

The attitude should be carefully noted for a vigorous vocal response to tactile stimulation, including a rapid and sustained pumping reflex when a finger is introduced into the oral cavity. Weak or cold chicks have a reduced pump reflex. However, species variation must be considered as well as the hatching order in a clutch. Some babies, such as Eclectus parrots, may have a generally more subdued attitude than a macaw or conure of a similar age. Younger chicks will be less vigorous than that of clutchmates hatched even one or two days earlier. A healthy chick

should be active, responsive and have good muscle tone. The baby should fall deeply asleep almost immediately after feeding. Chicks that remain jumpy, vocal or sleep fitfully are usually hot, cold, wet, hungry or ill. Further investigation is very important when fitful chicks are noted.

Body size, conformation and proportions should be visually analyzed. Disproportionately sized heads, extremities or ports, such as eyes, vents, nares and beaks, should be noted as possible congenital defects or signs of stunting. Stunted chicks will present with abnormally large heads, thin bodies with a lack of subcutaneous fat or round bellies and unusually long, thin legs with disproportionately large feet. The toes will be thin and hard, lacking the normal soft resilience of normal babies. Stunted chicks often display abnormal feathering patterns on the head with delayed feather emergence and maturation. In baby macaws, the feathers on the head may form a triangular pattern with the base over the nares and resembling a "mohawk haircut." These feathers are often disarranged rather than lying flat.

Stunting without established detrimental side affects can usually be rectified through improved diet, sanitation and routine diagnostic work if it is not too far advanced. Spinal and axial skeletal deviations should be evaluated for possible physical therapy, splinting or culling as dictated by the severity and affected body part.

Head carriage can vary between species as some species such as macaws and conures have a predisposition to sleeping flat on their backs naturally. Young cockatoos may sleep face down or with bowed necks for the first few weeks of life. Groups of chicks may sleep with their necks interlocked over each other's shoulders for support, but all babies, regardless of species, should carry their heads fully erect upon stimulation and during feedings. Some aviculturists have placed stuffed toys of approximately the same height as the chicks to provide a natural resting position for heavy heads and weak necks (Frank Todd, et al., former Curator of Birds, Sea World, San Diego, California).

Nares should be checked for discharge, occlusion or swellings which may be retained egg membranes, albumin, regurgitated food or sinus

infection. Nares should open within a few days of hatching and have a soft, pink texture. Beaks should have normal occlusion and any deviations either laterally or rostrally should be dealt with appropriately. Grooves, lacerations, punctures or scabs may indicate infectious disease (i.e., pox) feeding frenzy trauma, weak legs or improper brooder housing. The oral cavity should be examined for ulcers, cuts, plaques, bedding material, food and odor.

The external aural canals will remain closed until approximately two weeks of age for large psittacines. Apertures should be discrete, round and dry. Any evidence of wetness should be cultured and stained for potential pathogens.

The eyelids will open roughly the same time as the ears and any tardiness or lack of opening may be due to poor parental diet, genetics or congenital defect. Some conditions will respond to surgery, topical therapy and/or nursing care (i.e., pox crusts). Some are not responsive to any therapy known to date (i.e., ankyloblepharon). Food retention may cause corneal abrasions or promote infection by secondary opportunists. Babies pulled from nest boxes should be checked for shaving particles being retained in eyes, nares and ears.

Examination of the crop should reveal a rounded structure dependent in size on the volume of food present. The tone should always be firm and never droopy, as this is a potential sign of a flaccid crop. The presence of air may be due to improper feeding technique or as a result of aerophagia, which is frequently seen in stunted birds or those that beg incessantly. Cockatiels and very young babies seem to be predisposed and the cause should be investigated. The air may be removed by digital expression or by release with a tube.

The general abdominal area and trunk is to be checked for general fat deposition and muscle mass, especially over the ribs, synsacrum, toes and wing tips. Thin tissue over the carina is normal, as no significant pectoral mass develops until well after hatching when fledging is an oncoming concern. The abdominal organs may be visualized to a limited extent through the thin skin. Liver size and color, gizzard placement and size, presence of gut loops (supraduodenal loop) and prominence and general roundness of the abdomen is



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noted and recorded. Any exposed yolk sac during the first 24 to 48 hours of the perinatal period is considered acceptable and efforts should be taken to keep the exposed tissues moist and protected. Telfa™ (Johnson & Johnson) pads adhered to unretracted yolk sacs with antibacterial ointments work well until the

remainder is absorbed through the abdominal wall. Contaminated, ruptured or persistently (3 to 5 days) unretracted yolk sacs may require surgical ligation. This should be done with extreme care, as any unexpected movement by the baby may lead to rupture and/or visceration. Remember that some degree of nutrition and maternal antibody influence will be eliminated with the discarded yolk sac portion.

The vent should be explored for staining, fecoliths, uroliths, cloacitis and atresia ani. The first dropping (meconium) should be passed upon hatching or within the first 12 hours and is the product of albumin ingestion during incubation.

Normal wings and legs are pink to dark pigmented (depending on the species), plump, soft and easily manipulated. Coordination is poor in the perinatal period and improves slowly during the neonatal period. More rapid progress is made during the weaning, fledging and juvenile growth intervals. Minor cuts are of some consequence, as very little hemorrhage will be tolerated by the young chick and the possibility of opportunist invasion is relatively serious given the immune status of the baby. Nail and beak punctures during feeding frenzy or nest shifting can appear as osteomyelitis later in development.

The ulnar and femoral veins should be visualized for color (dark blood may indicate dehydration hypoxia or shock), size (small diameter vessels indicated hypovolemia, dehydration or shock) and pulse character.

The breast is auscultated for cardiac function (normal heart rate is 180 to 400 bpm) and respiration character (normal rate is 20 to 60/min.) over the lateral chest and abdomen and thoracic inlet. Some chicks may have exaggerated respiratory efforts until fully feathered. Cardiac disorders are rarely diagnosed, as most affected chicks will expire during development or at hatching due to the marked demand for function by the chick's normal physiology.

Healthy offspring should have slightly opaque pink to pink/yellow skin color with darker shades naturally occurring in Rose-breasted and Moluccan Cockatoos as well as all subspecies of Eclectus Parrots. Any color variation should be considered a significant indicator of systemic disease as indicated by the following:

- Red (bright or dark): hypoxia,

hypothermia, cardiac dysfunction

- Blue: hypoxia, hypothermia, cardiac dysfunction.

- White: anemia, shock, chilling, advanced disease, severe malnutrition

- Flaky: dehydration (some flakiness can be normal in Eclectus)

Skin defects, such as punctures, contusions or abrasions, are usually inflicted by clutchmates or improper tub housing. Chick acne is often misinterpreted as old pox lesions, bacterial infections or neoplasia. These babies will always have a history of nursery mate contact and will be presented with "measles" type facial lesions. Biopsy will reveal fibrosis with occasional bacterial organisms. Nail and beak trimming of clutchmates is curative. Subcutaneous masses may be the result of puncture fibrosis, injection site reactions, abscesses or calcification. Petechiae and ecchymosis is a severe sign and most often associated with sepsis (viruses, such as Polyoma, Reo, etc. or bacteria, such as *Staphylococcus* and *Streptococcus*), D.I.C., Vitamin K deficiency or coagulopathy.

Developing feathers in neonates and early juveniles must be ascertained for rate of maturation, anatomical development, stress marks (some are generally unavoidable especially in macaws), fragility, shaft distortion and hemorrhage. Nutrition and sepsis, especially due to PBFD virus, are the primary concerns here.

A neurological examination should be conducted early after hatching for simple muscular resistance, balance, strength and simple reflexes. Repeat exams are necessary as nidicolous chicks are difficult to evaluate in early life. Some neurological disorders tend to disappear quickly with the baby's rapidly physical development. The following tests should be conducted:

- pedal pinch reflex
- response to tactile contact
- hopping
- foot grip reflex
- balance
- vocalization
- foot placing
- vocalization response to stimulation
- visual tracking after eyes open

Some species have slow development, probably due to relative size, as especially seen in Hyacinths. Some species, such as Black Palm Cockatoos, appear to have rapid neurological development compared to other psittacines. ●

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