

PSITTACULTURE : THE CHICK

By Geo. A. Smith

The chick is almost helpless on hatching. It has to have food and warmth. It can, to some degree, prevent itself from becoming overheated by moving over to a cooler spot and by panting (gular flutter). Yet until it acquires, with age, sufficient bulk and the necessary insulation of down and feathers, the chick is unable to conserve its heat. Like the egg it is, and has to be, reptilian in its tolerance to cold. It is well able to survive periods of cooling below the optimum warmth. But coolness of the body is damaging. Its body cannot function fully, nor can the proper digestion of food take place, unless the chick has an internal temperature of, say, a very minimum of 37°C (100°F). On hatching the chick weighs somewhat less than three-quarters of the fresh-laid egg. With its irregular outline of legs, wings, neck and head, the chick cools far quicker than the near spherical egg. But, being mobile, the chick can actively search out a warm spot. The chicks we incubator-hatch are left in the incubator at the incubative temperature of 100°F (37°C) until such days time as they start to become distressed. Then they are moved to a brooder kept at, say 95°F (35°C) until, again, days later they start to pant and hold the wings away from the body and they move apart. When they again will need a lower temperature. Lower only to the minimal amount each time. You cannot be empirical on the temperatures and say on such a day lower the heat. With large chicks, chicks that grow fast, such as Lesser Sulphur-crested Cockatoos, it might be a week before they need a lower temperature and with Plumheads, Ringnecks - ten days or a fortnight. I have kept Hawk-headed chicks at 100°F (37°C) for four weeks, to their infinite benefit. They may have reptilian tolerance to cold; but after all, birds are warm-blooded. In the nest the chicks lie with their heads over the necks of siblings and bodies in a clustered ball. When they are particularly warm they lie quite separate. Some species of parrot are completely naked on hatching (e.g. Eclectus, Ringnecks and *Forpus* Parrotlets). Others have so little a covering of down as to be almost as bare (e.g. Amazons, and *Tanygnathus* Parrots). Yet others (e.g. *Pyrrhura* Conures, Cockatoos, Broadtails, -all the New Zealand Parrots and *Polyletis* Parakeets) are quite downy. These latter can be almost swathed in a 'halo' of wispy down with which they conserve heat. The most noticeable difference, visually, between parent and hand-reared parrot chicks is how the parents fluff and preen the down of the chick. This can give nestlings a cuddly attractiveness. It also makes them look larger than the flat-downed and un-preened orphan.

The natural nest should remain dry throughout the nesting period. The, (and

I am certain it is a largely mistaken) belief that the breeding cavities used in the wild are humid and moist has led to the common practice of filling nest-boxes with soaked peat. The barely moist faeces of the chicks are dropped when they back outwards from the clumping group of chicks. These faeces are not immediately removed by the parents and soon crumble into powder. Then older chicks will, if they can move some considerable distance to defaecate. For example, *Psittaculirostris* Fig-parrots (hand reared in a converted incubator) were seen to bestir themselves (climbing out from their plastic tub) to scurry off to 'relieve' themselves. Once done they would scamper back, just as quickly, to the nest.

Such cleanliness of behaviour almost certainly would probably equally apply to the very, very, closely-related brush-tongued parrots or lories (Loriini). In captive conditions lories are well known for fouling their nests. I doubt that they would do so in nature. Evidence from two Australian correspondents support this. When they have chicks parent parrots chew at the nest interior to shower down splinters and debris to supplement the litter. (Somewhere I have suggested that plucking of chicks, in the nest, could partly be that, in some instances, the parents are thwarted in not having chewable surfaces in the nest box). Parent parrots (usually the hen) turn over the nest litter with the bill and feet and may vigorously shower it through the nest hole. (Or would if the hole was not, as it so often is, impossibly high up). After experimenting and observing different nest boxes, over the years, I am convinced that sloping, even horizontal, boxes are best for parent and chick.

The chick grows fast. The rate of growth depending on food and warmth. At hatching, attached to its mid-bowel, and lying within its abdomen, is the yolk from the egg. The yolk is an early food supply. It is absorbed, and utilised, in a week to ten days. Were the chick not to be fed but merely kept nicely warm, this very concentrated, fat-rich, yolk might well keep it alive for as much as three or four days. And if the chick were supplied with a simple source of carbohydrate (starchy seeds, sugar or glucose) it might well survive two or three times longer. During the absorption and utilisation of the egg yolk the liver gets to be infiltrated and thoroughly permeated with fatty globules. These considerably handicap its normal functioning. A common mistake, because it can so easily kill the chick, is to feed the fresh-hatched chick well. Hand-reared chicks first demand nutritionally 'dilute' fare. (Hand rearing is to be discussed in a later article). As the yolk is absorbed the carotenes that gave the yolk its yellow or orange colour are released into the tissues. If particularly highly represented in the yolk, these carotenes often colour the chick yellow, so that it seems jaundiced. It is not. A correspondent (Dale Thompson) has told me that his incubator-hatched

chicks rear more easily if he administers 'bacteria' obtained by lavaging an adult parrot's crop. Likewise a friend, well-known for hand-rearing parrots, said that I would not be able to raise young parrots unless I first gave them natural yogurt. (Yet I previously had, and continue to do so, without yogurt). With the utmost of respect, though these statements may well apply to their collections, it is not necessarily a universal truth. The theory, in both examples quoted, is, I suppose, that, like ruminant animals, it is essential to establish 'good' bacteria within the alimentary canal. Either because such 'good' bacteria helps to synthesise certain dietary essentials or that they prevent disease-producing bacteria from becoming established. Certainly Lactobacillus, in suckling babies, has been repeatedly shown to suppress diarrhoea-producing bacteria. Yogurt, like suckling children, feeds upon milk. Parrots are not mammals. They have no milk. True the term 'crop-milk' is widely used in psittaculture. It is misleading to do so. Pigeons do secrete crop-milk for their very infant chicks; but it differs considerably from mammalian milk and parrots have no crop-glands or, to the best of my examination, any 'special' glands as have pigeons in the upper part of the alimentary canal with which to secrete protein rich substances.

Because you can sometimes cure digestive problems in young parrots by administering yogurt it does not prove it to be essential in rearing. By analogy, were this so, then anyone who suffers from 'indigestion' and has an appropriate medication to relieve the symptoms might well suggest that such medication is a dietary essential, whereas his indigestion may be because his wife is a very poor cook. Likewise parrot chicks should not get digestive problems if correctly fed. They do not suffer with 'sour-crop' or diarrhoea when parent fed - or should not. An excellent reason for hand-rearing incubator-hatched chicks is that, by so doing, it might become possible to eradicate Chlamydia (the agent producing Psittacosis) and Mycoplasma (the agent responsible for chronic sinusitis and upper respiratory-tract 'troubles') for which many parent parrots are benign carriers.

By making it a regular practice to weigh and handle parrot chicks, in the nest, daily and comparing these chicks with those that are artificially reared certain conclusions are possible (and will be dealt with in a later communication). Suffice to say that whereas parent-reared chicks, in the late evening, tend to have huge, often of such an incredible size as to appear disfiguring, food-filled crops. After the night, sometimes till quite late in the morning, the crop is quite empty. The inference drawn by myself, from this, is that parent parrots do not necessarily, feed their offspring during the hours of darkness. Indeed the nature of my work often had me called out at night. Sounds carry well in the sleeping dark. Yet though I invariably made

it a practice to listen for long periods not once have I heard chicks being fed. Leaving a tape-recorder running has consistently failed to pick up nocturnal feeding. I do not see why parent parrots should not feed their chicks during the night but mine seem not to. However human-fostered parrot chicks are often fed round the clock. Usually the foster-foods are richer in animal fats, protein and readily assimilated carbohydrates than those that the parents give. Fostered chicks, in consequence, can grow, indeed will grow much faster, once they are 'established' onto these alien foods, than the night-starved naturally reared chicks. It is not surprising that many (most to my experience) of the deaths in fostered chicks are directly attributable to liver and kidney damage - by having the near impossible task of absorbing extraordinary quantities of rich food from the bowel which finally overwhelm liver and kidney with their quantity. The larger proportion of the remaining deaths result from supplying insufficient heat in the early stages: i.e. until they are reasonably well-feathered. One dis-satisfaction with hand-rearing is that we have to feed excessive quantities of fluid with our substitute food: if the food is not reasonably sloppy the chicks cannot be fed. But birds are physiologically designed to conserve water. They cannot so easily shed surplus fluid as can mammals. In result the faeces of hand reared chicks are sloppy; not granular and near-dry as with the parents. One feature we shall be attending to next year is to try and devise a means of feeding less moist food and food which is less 'processed' than that currently fed. Chick growth can be shown by measuring the increasing length of body, head, wings, legs or any other measurable body appendage. But the simplest assessment will come by weighing. One scale, one spring balance, may not be enough. One to read up to 30g, another to 500g and, if macaws are kept, yet another to 2.5 kilos are needed. The chick may bounce a little when held in his envelope suspended from the balance. In consequence very, very accurate readings are not always possible. But they still ought to be taken. Carefully examine chicks as you handle them. Keep all records, better still graph them. It is found that artificially reared chicks with an abnormally high sustained increase in body weight are particularly likely to develop damage to their pelvis and hind limbs and to suffer from Fatty Liver and Disease Syndrome (FLKS).

Experimentally, and sometimes intentionally, chicks can be kept so that their pre-pinfeather stage continues far longer than usual. For example if we keep parrot chicks at temperatures slightly below optimum they cannot digest food properly and can barely increase in weight. Yet when this handicap is overcome they later grow normally and will become perfect examples of their kind. You can, therefore, have a chick that does not put on more than a few grams of weight over, say, a fortnight and yet which, ultimately, becomes perfectly normal in development. However once the

pin-feather stage has started it is dangerous to retard chicks. Feathers and skeleton will be affected and the changes made to the skeleton may never, subsequently, be overcome.

N.B. The author of the above article was a well known English aviculturist and veterinarian. This article first appeared in the June 1984 issue of the Magazine of the Parrot Society and was reprinted in the October 1984 issue of *Bird Keeping in Australia*. It was reprinted then, and is re-printed now because it raises a number of topical and thought provoking points relating to rearing parrots. We would be interested in hearing from any member wishing to support or contradict any of the points raised. Ed.