

Peters' Twinspots

Care, Breeding, Behavior

by Jayne Yantz
Wilmington, Delaware

Peters' twinspots (*Hypargos niveoguttatus*) are estrildid finches from tropical Africa. Males are more brightly colored than females; but both are attractive birds, having predominant colors of red, brown, grey and black accompanied by white spots on the flanks and lower breast. Peters' are active, long-lived and reasonably hardy, qualities which make them excellent aviary birds if their basic requirements are met.¹

CARE OF PETERS' TWINSPOTS

Housing

Peters', like other waxbills, are not well suited to cage life, and deserve a large flight or aviary. I accommodate my breeding pairs indoors in individual flights ranging from four to six feet in length, five to six feet in height, and 20 to 30 inches in width. Individual flights ensure the greatest breeding potential, although Peters' may be kept in larger mixed flights with little difficulty (if the birds are placed with other species and are selected for peaceful dispositions).

Peters' need some natural branches for perching and some heavy cover for security, which should be placed in at least one upper corner of the flight. They will also benefit from low cover (small bushes, potted plants, etc.) because they spend much time on the ground, especially when nesting. Other features of the flight should include: good bathing facilities; access to natural sunlight, some rocks; and pots cultivated with grasses, seedling heads or other suitable plants. Peters' bathe daily and, if allowed, enjoy sun bathing as well — the birds will spread their feathers apart, especially on their heads, to achieve the greatest effect from the sun. The rocks, in addition to natural branches, will help to keep nails trim (although occasional trimming may be required anyway), and the pots of grasses will provide extra cover and dietary supplements.

Food

Dishes should be placed on the ground where Peters' naturally seek their food. These twinspots need a good quality finch mix, supplemented with small millet (yellow or panicum) and a song mixture similar to those provided for canaries. The song mix-

ture, made up of darker, oilier seeds such as hemp and niger, is favored by Peters' and provides a higher protein content than plain millets. In addition to seeds, the birds should have several "insectivorous" or high protein mixes (fed dry) available at all times.² They should also be provided with oyster shell or mineral mix, grit and cuttlebone. Peters' enjoy sampling different foods, and should be given a variety of items for their mental and physical benefit.

Essential extras include seedling heads, soaked seed, meal worms, wax worms, and a variety of insects such as aphids which can be collected from the garden. If the birds are housed outside, they can capture most of their own live food; but a few meal worms and wax worms will still be appreciated. Live food is a necessary part of the diet, especially during breeding season. Peters' are moderately easy to care for, however, because they require a little less live food than some of the other waxbill species. During winter or non-breeding season, I provide live food once or twice a week and find that the birds remain in good health as long as they are eating high protein mixes regularly.

Other supplements include moist high protein mixes, but not all my birds are enthusiastic about these. I have had the best results using Abba Green, and have one pair of Peters' which relies heavily on this for rearing young. Many wild-caught Peters' reject moist food, particularly egg. It is always worth the effort to provide these supplements, though, in case the birds do learn to accept them.

Problems

Peters' are very hardy once they are acclimated. They do require relative warmth during the winter months, and I recommend not keeping them below 65 to 68 degrees, depending on the individual. I have some birds which show signs of stress when the temperature dips below 68 degrees; others do just fine at 65 degrees. I house them accordingly. Birds living outside *may* adjust to lower temperatures, but they should be carefully watched and protected against sudden drops in temperature. I have collected several reports

on Peters' twinspots which have died in outside aviaries after temperatures have dropped rapidly.

Peters' also have the reputation for shipping and acclimating with difficulty. This is true, although perhaps not to the extent that some of the literature suggests. If you have Peters' shipped, attempt to do so in moderate weather. Prepare a secure, quiet, warm quarantine cage for them when they arrive — especially if they are wild-caught birds which have already been stressed in quarantine stations and at wholesalers.

BREEDING

General Care

Peters' twinspots are moderately easy to breed. They usually nest on the ground and will quickly accept wooden nest boxes. The birds gather dried grasses, wood-straw, or coconut fibers to form the nest, and feathers or other softer material such as moss to line the nest. These waxbills enjoy having Spanish moss to aid in nest construction, but particularly like this material for camouflage. They place Spanish moss near the nest entrance, and then accept strips of white tissue paper which they use to close the entrance and hide the eggs.

The clutch usually consists of four or five eggs. The incubation period is 12 to 13 days, and the young fledge the nest about 18 to 20 days later. They do not return to the nest to roost.

To successfully fledge the entire brood, I provide meal worms free choice; and supplement this with wax worms (a dish of 20 three times per day), white worms (a saucer at sunrise), and any aphids or other live food which can be collected from the garden. Once wild-caught birds have raised one or two nests of young, they will be more willing to complete the process successfully with less variety in live food. I have successfully reared Peters' on only meal worms and wax worms when no other live food was available.

In addition to live food, I provide greens, seedling heads, and soaked seed. Garden-grown pots of grasses, seedling heads or greens (lettuce, kale, etc.) are placed in the flights, allowing the birds to collect their own greens

and insects. Soft, dry, high protein foods are always available and, if the birds will use them, moist high protein foods such as egg.

Using this feeding regimen, it is possible to fledge all the young hatched in any nest of Peters' in my inside flights. Peters' are very good parents, and when they fail to raise their young it is usually due to inadequate housing or diet. In that situation, attempts may be made to foster eggs or nestlings under other waxbills or societies.⁴ However, the problem should be corrected before attempting to breed the birds again.

Fledglings are dull red and greyish black. Gape flanges are bright yellow. Young may be sexed on appearance as soon as they leave the nest. Males have a brighter breast, more reddish in color; females have a duller breast, more russet in color.

Breeding Problems

Egg-binding is a problem I have encountered with Peters' twispots, especially in winter months after females had nested during the breeding season. Unfortunately it is sometimes difficult to stop this species from mating, even when nests have been removed, and occasionally it may be necessary to separate members of a pair to protect the health of the female. Low temperatures, shortened day lengths, and depletion of calcium reserves seem to be critical factors for female Peters' which have continued to lay eggs during winter months. Evidence suggests that female Peters' often perish from being allowed to breed too frequently, especially under improper conditions such as lowered temperatures. I have several accounts of this from other breeders who have only male Peters' remaining. In my own experience, I have never had a seriously ill male, but I have lost six females. (Three died due to egg-binding or related reproductive failure. One was shipped during winter and arrived in poor health. Another also arrived in poor health after the shipment crate was "misplaced" at the airport during a damp day with temperatures around 65 degrees. The sixth female died of unknown causes.)

The greatest problem with egg-binding is that it can be rapidly fatal. When caught in time, I have saved egg-bound females by simply placing them in a heated cage (85 degrees or above). My egg-bound females which did die were all young birds (hatching in summer and succumbing to egg-binding

over the following winter even though they were not encouraged to nest). These birds did not show symptoms before cooler evening temperatures arrived, but all were found dead in the morning. Older females which displayed symptoms, apparently, were more capable of surviving long enough for me to observe their distress. Therefore, I strongly suggest careful observation of female Peters' and prevention of mating among young females, especially in winter.

Another potential problem among Peters' twispots is infertility. I cannot determine whether or not this is a universal problem because there are few reports from breeders who have worked with Peters' over long periods. However, I have encountered it in my birds and know of one other breeder who is experiencing similar difficulties. At present I have two infertile pairs, both of which raised young during earlier seasons. I may also have a third infertile pair which raised young previously for three consecutive seasons, but recently produced its first infertile clutch. The individual bird which is probably the oldest, a bird in my care for five years, no longer makes attempts to nest. This male is otherwise extremely healthy and active, and did raise young in earlier seasons. A lack of interest in nesting is extremely uncharacteristic of this species (which is often too eager to breed in captivity). I do not know the cause of infertility among my Peters' twispots. My other waxbills receive the same diet and care, and continue to be fertile beyond the third season — although this does not mean that Peters' do not have a special requirement for long-term fertility which I have failed to identify.

Breeding Behavior

Mating occurs on the ground. Males dance, puffing up their plumage so that their red feathers show to advantage while holding a bit of nesting material in their beaks. The dance is often, but not always, directed in a circular pattern and may also be performed without nesting material. Females are not as flamboyant, but they may also engage in this courtship ritual, following in a portion of the dance around a circular path with a bit of nesting material in their beaks. I have witnessed two female Peters' which performed in this manner, but I have never seen a female engage in the courtship display without the male present. Females will, however, sing a subdued song if their mates are absent (or if they have no

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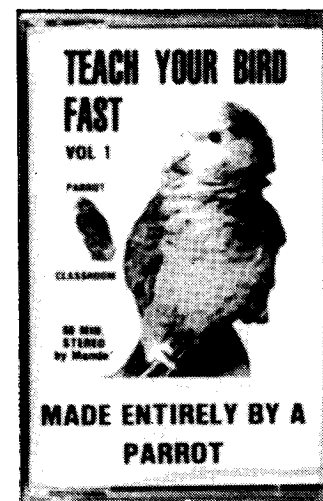
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mate). The favored time for displaying is just after sunrise, although it may be performed at other times as well, especially among birds which have been without mates for a period of time.⁵

Both parents incubate in the usual estrildid manner, sharing duties during the day while only the female incubates at night. Both sexes have been observed bringing a piece of nesting material to the entrance, calling softly to their mate, and then quickly changing places. This behavior is particularly easy to observe when the eggs have hatched and both members of the pair, but especially the female, will eagerly bring soft materials to enhance the lining of the nest. If appropriate nesting materials are not available, I have observed the female pulling flank feathers from the male. The male was tolerant of this activity.

Once eggs hatch, enough live food must be available or the parents will be unable to raise the entire clutch. Live food consumption is moderate at first, increasing slightly around day three but increasing sharply around day five or six. Live food intake peaks during days nine to 11, and then slowly tapers until the nestlings fledge. If live food is not provided in large enough quantities, the parents will usually remove one or more of the nestlings until the number of nestlings which remain can be supported on the live food available. This may occur the first day the eggs hatch, but if all other conditions are satisfactory, the parents may wait until days six to nine when live food requirements rise. Then, when there is not enough live food for the demands of the young, some young will be eliminated until the food supply is adequate for those remaining. Nestlings are usually deposited, one per day, at the end of the flight opposite the nest. This is followed by eliminating any unhatched eggs, also removed to the opposite end of the flight, presumably to distract attention from the nesting site.

I have never found a live nestling which had been removed from the nest by its parents. In at least one pair, I observed the parents removing the young and killing them before depositing them away from the nest site. Nestlings are killed quickly by twisting or biting the neck. Parents perform this activity secretively, and I have only observed a single male removing and killing his young. This particular male became quite agitated when he realized he was being observed. It appears, at least among my Peters', that it is so

important to the parents to keep the nest site hidden that they kill abandoned young which, if alive, might call attention to the nest and endanger the remaining young. Fostering abandoned young, then, is not easy to do because these nestlings are usually not found alive. (I have, in fact, only fostered eggs. I have never found a live abandoned baby. However, Peters' will not abandon their young if conditions are adequate so the need to foster is limited.)

Once the parents cease removing young or unhatched eggs, it indicates they will complete the task of raising the remaining young in the nest. More accurately, it means that conditions satisfy the parents' requirements for rearing the remainder of their brood. If all eggs hatch, and all conditions are met, of course, no eggs or young will be removed from the nest.

Young are audible from an early age (possibly the first day), if you are close enough to the nest. They often make low, sustained begging sounds which are especially easy to hear from days three to six. (These sounds seem to be independent of actually begging for food from the parents, and cease to be given after day six.) The parents will attempt to cover begging sounds from the young by calling loudly and producing a trilling alarm call. This is usually accompanied by tail-switching, and effectively attracts attention to the parents instead of to the nest. If, however, begging sounds are produced while one parent is in the nest feeding the young, the other parent will give a quieter warning to his mate in the nest (and begging then stops), before giving a louder alarm call and engaging in tail-switching. Once the nestlings fledge, they will be flighty for at least two days during which time the parents engage in numerous alarm calls, again, to divert attention from the young. After this initial period, fledglings settle down comfortably if there is more than one. However, if a Peters' is an "only child," it tends to remain nervous much longer. Generally, parental protection in the form of alarm calls and tail-switching is directly related to the developmental stage of the young. While incubating, parents tend to be secretive and relatively quiet. This pattern continues (except to camouflage begging sounds from the young) until the nestlings become reasonably large (approximately 14 days old), when parental protection increases in intensity and parents may begin giving alarm calls as soon as a threatening individual

enters the room. Before the nestlings fledge, the parents appear to direct a number of their alarm calls directly to the nest, indicating that they are actually warning the young to remain quietly in place. The parents, therefore, are willing to increase risks to themselves in order to divert attention from their nest. The risks they are willing to take increase as the nestlings grow and as parental investment increases.

The literature warns against checking nests of Peters' twinspace⁶. Considering the efforts of the parents to protect their young, I have avoided disturbing the nests. In addition to diversion displays, the parents also often enter and leave the nest along a zig-zag path, making it difficult for a predator to locate the nest by observing the parents. Clearly the adults intend to keep their nests secure. I have, however, unintentionally removed a nest on more than one occasion (either because I did not recognize it as a nest because I thought it was unoccupied), and discovered that there were eggs in the nest. I replaced the nest immediately and the parents successfully completed incubation and rearing. I have also checked nests when live food was scarce and I doubted that eggs had hatched (which would allow me to save live food for other parents with nestlings). Each time I checked a nest box which did have young in it, the parents successfully continued the process of raising the young. Therefore, it is probably safe to check nest boxes of most pairs of Peters' twinspace. I still prefer to provide them with privacy, because this seems particularly important to them. I don't check nests unless it is necessary and I would be hesitant to remove the babies for closed banding, although it is possible that certain pairs will tolerate this also. Simply, I prefer not to risk it unless I have to.

The parents continue to care for the young for 12 to 14 days after they fledge, and may provide supplemental feedings for several additional days if the young continue to beg persistently, which they will do if they can hear other nestlings being fed. The offspring may be encouraged to eat on their own by placing millet sprays, soaked seed and seedling heads in the flights. They make no effort to eat on their own during the first few days, and very little food seems to be fed by the parents on the first day the babies fledge; the entire family appears to be stressed by fledgling nervousness.

Soon after weaning, the young are best removed because the parents may

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LORIES

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renest, and the young may interfere with this process. Peters', also, have a reputation for being aggressive birds, so it is wise to remove the young, especially if you do not know if a particular pair is aggressive toward their young once the young begin to attain adult plumage. My young Peters' generally become fully independent around the 18th day out of the nest, and show signs of getting adult colors about five weeks after that.

GENERAL BEHAVIOR: A PRELIMINARY STUDY

Peters' do have the reputation for being aggressive. I have at least one report from a breeder who states that the male parent attacked and killed his male offspring which had remained in the flight after assuming adult plumage. There is, however, some disagreement about the aggressive nature of Peters' twinspace. My own birds are not particularly aggressive, and I have successfully wintered young Peters' with their parents on several occasions. I observe the birds closely when parents and young (or pairs of siblings) are kept together — just in case. Difficulties do arise when parents attempt to renest. Parents will begin to drive the young from the flight (or territory). When I observe this, I open the flight door and allow the parents to do so. The young are captured and housed separately. The young, also, may attempt to displace their parents from the flight. However, on no occasion have any of my birds engaged in serious disputes which resulted in injuries. This does not mean that all Peters' are this good tempered. I suspect, in part, that their tolerant disposition is a reflection of an unstressful environment largely devoid of competition or disturbance? Environment is a critical factor in influencing behavior; environment cannot, though, compensate totally for natural characteristics or innate behavioral patterns.

Peters' are by nature territorial and competitive birds. Each morning shortly after sunrise all of my male Peters' puff up their plumage, notably displaying the spotted flanks and red breast feathers, and call loudly. To my ears at least, it seems clear that each male is attempting to drown out the others, producing songs which become harsh and strained at the expense of loudness. Following these initial calls, most males (except some of the older individuals) begin to "chase" their females around the

flights. This "chasing" appears to be purely ritualistic, and no harm is ever done to the females. (Recently paired females do appear to react with some concern, but members of established pairs do not.) This chasing appears to be an aspect of territorial display — my flight, my female.

Peters', then, are best bred in individual flights, definitely not with other twinspace. They have specialized needs and are competitive creatures. If they are housed with other individuals, make selections carefully. I have successfully mixed a breeding pair of Peters' with a breeding pair of blue-capped waxbills (*Uraeginthus cyanocephalus*). The Peters' nest on the ground; the blue-caps nest in the upper level of the flight, and there is no conflict. Blue-caps, also, have no red in their plumage. Similarly colored species are more prone to be targets of aggression by Peters' twinspace.

Sexual Differences

Most Peters' twinspace are calm, accepting captive life well; but all retain their secretive habits, preferring to take immediate cover when they feel threatened. Peters' often travel on the ground very close to cover, hopping from one protected area to another. It is not essential for the birds to be completely hidden — they appear to be secure skulking behind a few plant stems, but they require some object of camouflage between themselves and potential danger. Although females also engage in these protective measures, I have found all female Peters' to be more trusting and openly inquisitive than males. Females will often venture into unfamiliar places which the males are hesitant to investigate, leaving these males to produce alarm calls as they watch the females explore. The females, usually, ignore the warnings of their mates. Females, generally, show less caution and restraint than their partners. For example, females will anxiously come to the door of their flights if they want something. When the object is produced — meal worms, a special tidbit of nesting material, etc. — the females will often grab the item before I can withdraw from the flight. They may even land near my hand in their eagerness to collect a prized piece of nesting material, quickly becoming startled and jumping back before the male can produce an alarm call. One female has also taken a bit of chickweed

from my fingers. The chickweed was not being offered to this bird, but as soon as she spotted it, she made her way directly to my hand. Since I make no special efforts to tame these birds, the other Peters' were disturbed to observe this over-confident female going so close to danger. My females, clearly, are often less cautious than my males.

Female Peters' also appear to have a higher death rate in captivity because of reproductive problems and greater difficulty adjusting to the stress of capture and transport. I suspect that in the wild their death rate is also higher than the death rate for male Peters' because of greater potential problems in reproduction and because of their less cautious dispositions.⁸

The birth rate among my Peters' twinspace is two females for each male. I do not know if this is typical, but it ensures greater population balance among members of my individual flock. By pairing young females with males which had lost mates and by providing females for other breeders who had lost them, I have an exact balance at present.

Some Unusual Behavior

My work with Peters' twinspace began after purchasing a single male from a pet shop. (The bird's mate had died in the store.) After purchasing this bird, it became clear that this individual could not tolerate confinement in a cage. This is not characteristic of Peters', a species which tends to be trusting. The cause of this unusual flightiness is uncertain, although the pet shop housed the bird in an extremely small cage in a high traffic area, and this experience may have contributed to a justified aversion to confinement in the presence of humans. Also, I suspect (but cannot prove) that this individual was an older bird, less capable of adjusting to captivity (or any other significant change). Consequently, the bird was given supervised liberty within the house until he could be placed in a flight with a mate. He accepted my presence well when he was not caged, and as a result of this I was able to observe his behavior closely.

This single male built several nests by himself. All nests were carefully hidden in the living room and dining room on the first floor of the house. This bird showed a marked preference for antiques and stereo equipment, building nests in the open box-

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shaped base of an antique scale, in the hollow of an ancient South American pot, and beside a stereo speaker which formed one wall of a nest. Because these objects were valuable, they were placed in protected and secure locations — exactly what a Peter's twinspace demands of a nesting site. Since several nests were constructed without the encouragement of a mate, this behavior clearly shows that Peters' have strong nesting instincts. This is, of course, true, and I have since discovered that it is even difficult to stop Peters' from nesting.

When a mate finally arrived, she was introduced (in a cage) into his territory (the dining room). The male immediately began to sing and dance, doing an elaborate display on the floor in front of the cage before flying to the side of the cage to continue cultivating the female's affection. Both birds were later removed to a breeding flight on the second floor of the house. However, the male still could not tolerate being confined when humans were near. Consequently, this bird was allowed to breed with the flight door left open — the only situation he would accept. The male continued to return each day to the first floor which, apparently, he considered his territory. He taught his mate to follow him, and together they would forage for items for their nest or for stray seeds dropped on the floor. Feathers from a few birds kept on this floor were bundled up in the beak, never one feather at a time, always a collection of feathers which resulted in repeated attempts to arrange them properly before returning to the nest. Courtship displays continued to be performed, but probably functioned to strengthen pair bonds and to assert territorial claims, because mating was never observed (and probably took place in the early morning near the nest site). Both birds always returned to the breeding flight for roosting, apparently preferring the added security of the enclosure and the proximity of their nest. During incubation the male or female would make solitary trips to collect feathers for the nest while one member of the pair remained on the nest. When the nestlings were large enough for brooding to become unnecessary, both birds resumed their foraging activities and left the nest unguarded. Shortly, they fledged three young.

The most unusual behavior I observed was exhibited by the male

before he received a mate. He would fly immediately toward a cage or flight of birds which were engaged in any kind of noisy dispute. The size of the birds or the seriousness of the dispute did not matter. The male would fly rapidly to the flight, landing on the side of the enclosure. He appeared to be drawn into situations of conflict, and this made little sense in terms of survival in the wild. After he received a mate, he continued this behavior, but with a variation. He continued to fly in the direction of a disturbance, but would change his direction to "chase" the female. In both cases he would puff up his plumage and call loudly when he reached the vicinity of the dispute. This behavior is very similar to the typical display at sunrise which also includes "chasing" the female. It appears that the sounds of a disagreement among other birds stimulates the territorial instincts in my male Peters' twinspace. In this case, however, chasing the female, essentially, protects her from involvement in the dispute. In other situations, Peters' will expose themselves to (limited) danger to protect their nest and young, or to protect their mates or siblings (by producing alarm calls which draw attention to themselves). There is, apparently, a strong allegiance between family members or members of a pair. Yet, compared to other waxbills, I would not consider Peters' twinspace to form exceptionally strong pair bonds.⁹ Chasing a female away from a dispute (or perhaps even producing alarm calls to distract a predator) may more closely relate to inherent territorial instincts than to altruistic desires to protect family members. It underscores the fact that Peters' twinspace, especially the males, are largely territorial and self-assertive birds.

SUMMARY

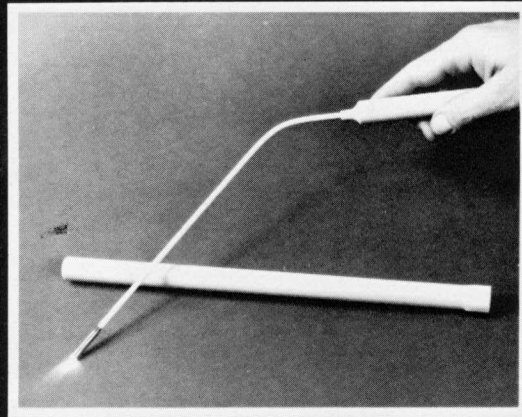
Peters' twinspace make excellent and interesting aviary birds. They are rewarding to work with, breed well, and should be represented more in aviculture. Among waxbills, which I specialize in, I would classify Peters' as moderate in difficulty. As the literature suggests, these are not birds for beginners; they compare favorably to other waxbills, but not to zebra finches. They do require specialized care and should not be kept in a cage. Moreover, they should be bred, not kept as pets. They have a strong desire to breed which their caretakers

should encourage. They do not ship particularly well, and do not easily tolerate the stress of capture and confinement in quarantine stations. Therefore, it is my strong recommendation that all young Peters' be placed directly with breeders.

FOOTNOTES

1. This report is drawn from working with Peters' twinspots for a five-year period. All original pairs (three) were wild-caught; offspring were combined to create additional pairs or to replace lost members of a pair. All birds were kept and bred indoors.
2. High protein, dry mixes fed to my Peters' include the following: Abba Soft, available from Abba Products, P.O. Box 122, Elizabeth, New Jersey 07207; Proteen 25, available from Sunshine Bird Supplies, 8535 N.W. 56th St., Miami, FL 33166; Clifford's Nestling Food, available from Clifford's Pet Supplies, P.O. Box 1994, Buffalo, New York 14219; La Feber's Finch Granules and Finch Pellets, available from Wm. Reichert, 1523 Potter Rd., park Ridge, IL 60068; Orlux Insectivorous Mix for Finches, available from Windhover Bird Ranch, 3910 Niagara St., Denver, CO 80207. Wheat germ, available from grocery stores, health food stores or bird suppliers, is also offered.
3. Feeding meal worms free choice means that the meal worm dish is never empty. This may involve feeding 300 to 600 meal worms per day, of which, usually, only the heads will be eaten. If the meal worm supply is not kept up, the birds may return to the dishes and consume the bodies of the worms. However, this is not guaranteed. (Parents may also decide the supply is inadequate and remove young from the nest.) When rationing was necessary, dishes of 50 to 75 meal worms were placed in the flights five or six times per day, beginning at sunrise. Demand for meal worms and other live food depends on the number of nestlings and the stage of their development.
4. Terry Dunham states that Peters' can be successfully fostered under society finches which feed egg food instead of live food (*Bird Talk*, July 1986). Rutgers also reports that societies will feed nestling Peters', but only records unsuccessful attempts. In my own experiences, I have successfully fostered eggs of Peters' twinspots under red-checked cordon bleus (*U. bengalus*) on two different occasions. For an explanation of why I made this choice over societies, see *Watchbird*, Feb/Mar 1985 which records a similar fostering under the same pair of cordons. See also remarks here under "Breeding Behavior" which suggest that it may be difficult to foster Peters' nestlings at all.
5. Goodman reports breeders' observations which indicate that females do not hold nesting material during courtship rituals. Two of my females (which are unrelated) were observed doing so. I suspect this contradiction is not due to individual differences, but results from my ability to easily observe my birds without disturbing them, particularly in the early morning when mating often occurs. The conditions under which we observe our birds often determine what we see. For example, Harrison and Dormer report a communal display which is performed in the wild by males only (as females passively observe). I have never witnessed anything suggesting that male Peters' might perform in this

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Male
Peters' twinspace



Female Peters' twinspace.

Nestling Peters' twinspace, approximately two to three days from leaving the nest. Yellow gape marks are visible at the sides of the beak. This bird is a female, indicated by her reddish-brown breast feathers.



Pair of Peters' twinspaces. The male may be identified by the brighter red feathers on his head.

manner. However, my birds have had limited opportunities for several males to join together in a communal display.

6. Nicolai warns against checking nests, indicating that parents will abandon the nest if it is disturbed.
7. Aggressiveness or displays to assert territorial rights or dominance appear to increase with the number of Peters' twinspaces housed in the same area. Therefore, I limit the number of pairs kept in each room. My birds are housed in four separate rooms, and the Peters' are accommodated so that no more than two pairs are ever kept in the same room. This seems to reduce natural competition and aggression. Also, if Peters' are located away from other aggressive species (such as Dybowski's twinspaces, *Euchistospiza dybowskii*), then Peters' tend to be generally calmer.
8. According to Trollope, Peters' are probably double brooded in the wild. In captivity where the restraints of seasonal changes that influence the breeding cycle are reduced or eliminated, Peters' will continue to breed (especially if housed inside). Therefore, it is difficult to compare problems encountered by feral females with problems encountered by captive females. However, potentials for difficulties in the female reproductive system still remain higher than in the male reproductive system. As a general rule, I allow my Peters' no more than three clutches per year, the third clutch being delayed for some time after the first two successive clutches. This is, however, often difficult to enforce if another pair of birds (of any species) is nesting while a pair of Peters' is not.
9. It is impossible to quantify the emotional attachment between two birds. Peters' do, however, appear somewhat less devoted to their partners than other waxbills I have kept. Peters' do clump and preen each other, but members of a pair may also travel individually and may focus their attention on other individuals of the opposite sex. Females, also, may refuse to heed alarm calls given by their mates, and, on occasion, will refuse to answer contact calls. One particular female consistently refused to answer her mate's appeal to return to the flight for the evening, preferring instead to sleep by herself in a favorite tree a few feet from the flight. Later, this compliment was returned when the male refused to return for the evening, preferring to remain near the vicinity of a recently-caged male Peters' which he appeared to be challenging through the bars of the cage.

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