

The Biology and Husbandry of Whydahs & Combassous

by Luis F. Baptista
Chairman and Curator
California Academy of Sciences

The word "finch" is a catchall phrase that includes birds belonging to several unrelated families whose members have conical bills and tend to forage on seeds as their main food item. The Cardueline Finches include species such as Linnets, Goldfinches and Canaries, who build open cup nests. The Emberizid Finches include some 279 species, and contain a diverse assortment of small songbirds ranging from 50+ gram *Saltators* to

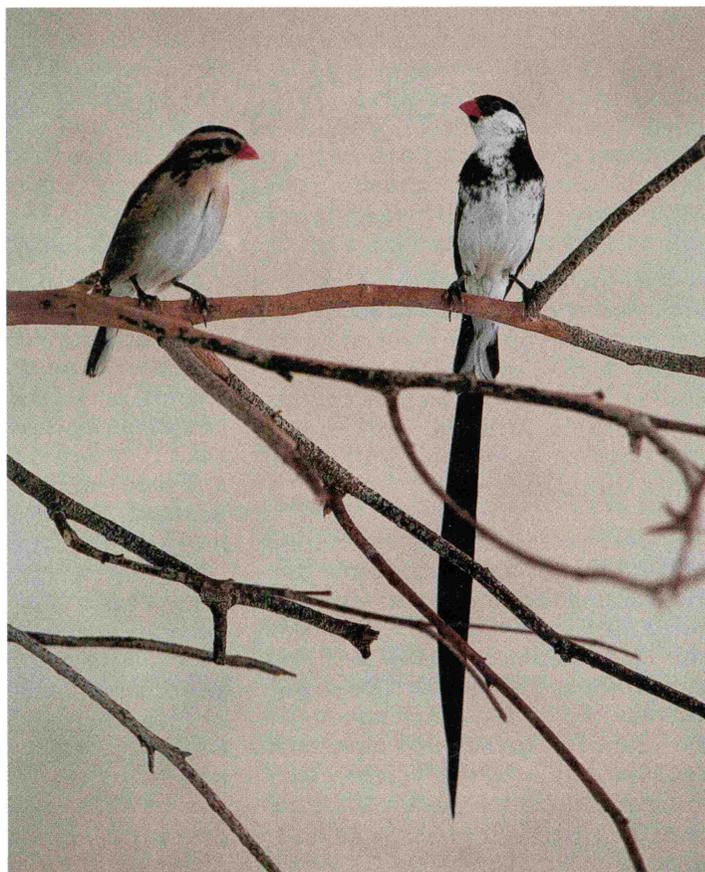
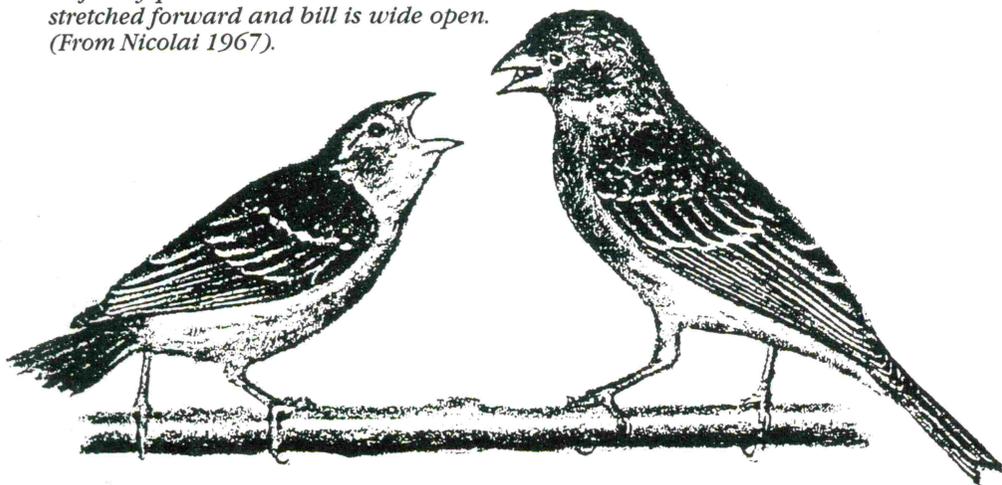


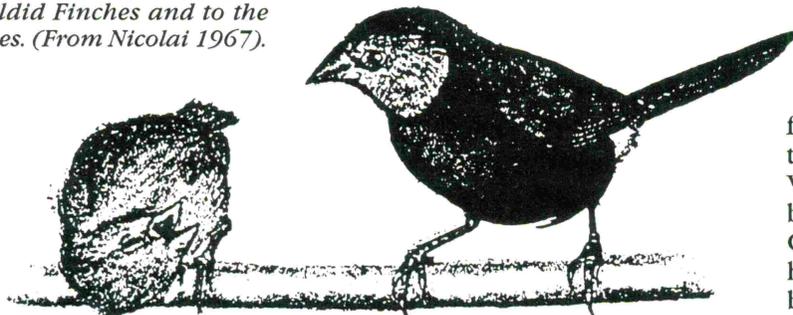
Photo by Nancy Vigran

Pair of Pintailed Whydahs

Cardueline Finch fledgling begging to be fed by parent. Note that the neck is stretched forward and bill is wide open. (From Nicolai 1967).



Estrildid Finch (Violet-eared Waxbill) begging to be fed by parent. Note that the head is twisted and held below the horizontal. This method of begging is unique to Estrildid Finches and to the parasitic viduines. (From Nicolai 1967).



tiny 8 gram Seedeaters and Grassquits. The Weaver Finches belong to the family Ploceidae and actually weave nests using special stitches and knots. The Estrildid Finches (*Estrildidae*) include the Waxbills, Mannikins and Australian Grassfinches. They build domed-over nests that are "thatched" like the roof of a grass cottage.

Because of their beauty and usually easy maintenance, Estrildid Finches have been popular subjects of aviculture and a good number of species are well established in the hobby. Some of the other finch groups, notably the viduines, have been relatively neglected by aviculturists. In this essay I bring together some of the literature on this finch group which are not readily accessible to the average aviculturist.

Introduction to the Viduine Finches

One subfamily of the weaver finches, The Viduinae or viduines in the anglicized version, include the Whydahs and Combassous who are brood parasites. Like the European Cuckoo or North American Brown-headed Cowbird, viduines do not build nests but instead lay their eggs

in nests of estrildid finches and depend on the latter to raise their young. With the exception of the Pintail Whydah (*Vidua macroura*) who lays its eggs in nests of several Waxbill (*Estrilda*) species, each viduine species lays its eggs in nests of only one host finch species.

Identification of Viduines

Viduines may be divided into three groups. One group which includes the Pintail, Steel (*V. hypocherina*), Queen (*V. regia*), and Fischer's (*V. fisheri*) Whydahs have straw-like tails and are placed in the subgenus *Vidua*. These species are easily identified. The second group, the Combassous, also known as Widow Finches or Atlas Finches, are placed in the subgenus *Hypochera*. All have short tails although occasionally individuals do appear with slightly elongated rectrices. Distinguishing species in this group is a great challenge as developed below. The third group, the Paradise Whydahs, have long flattened rectrices, and are placed in the subgenus *Steganura*.

Combassou males may vary geographically in color within a species, but always utilize the same host. The same species may be blue, or green, or even purple in some regions. Two species of Combassous may live in the same area in Africa but each will parasitize a different Firefinch. Mimicking the song and other vocalizations of the correct Firefinch ensures that the female will make the correct mate choice. For example, the Village Indigobird (*Vidua chalybeata*) may vary from green to blue in color depending on the geographic region, but it always mimics the Senegal (= Red-billed) Firefinch (*Lagonosticta senegala*). The Variable Indigobird (*Vidua funerea*) may be green or blue, again depending on the area, but always mimics the Dark Firefinch (*L. rubricata*). The surest way to identify a Combassou species is by the mouth-markings of the nestling which mimics those of the host nestlings. The next best way is to listen to its mimicked song which should be that of its host Firefinch.

The Village Indigobird is the most frequently imported. Since the Red-billed Firefinch, its host, is the easiest of the Firefinches to breed, it is not too surprising that this Combassou is the most frequently bred viduine in captivity.

The four Paradise Whydah species can be distinguished by body color

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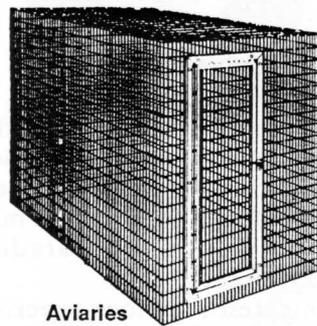
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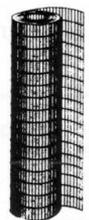
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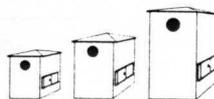


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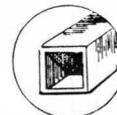
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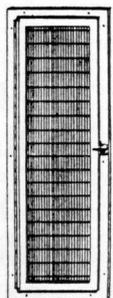
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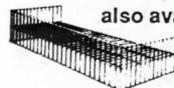
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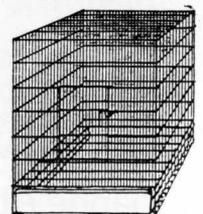
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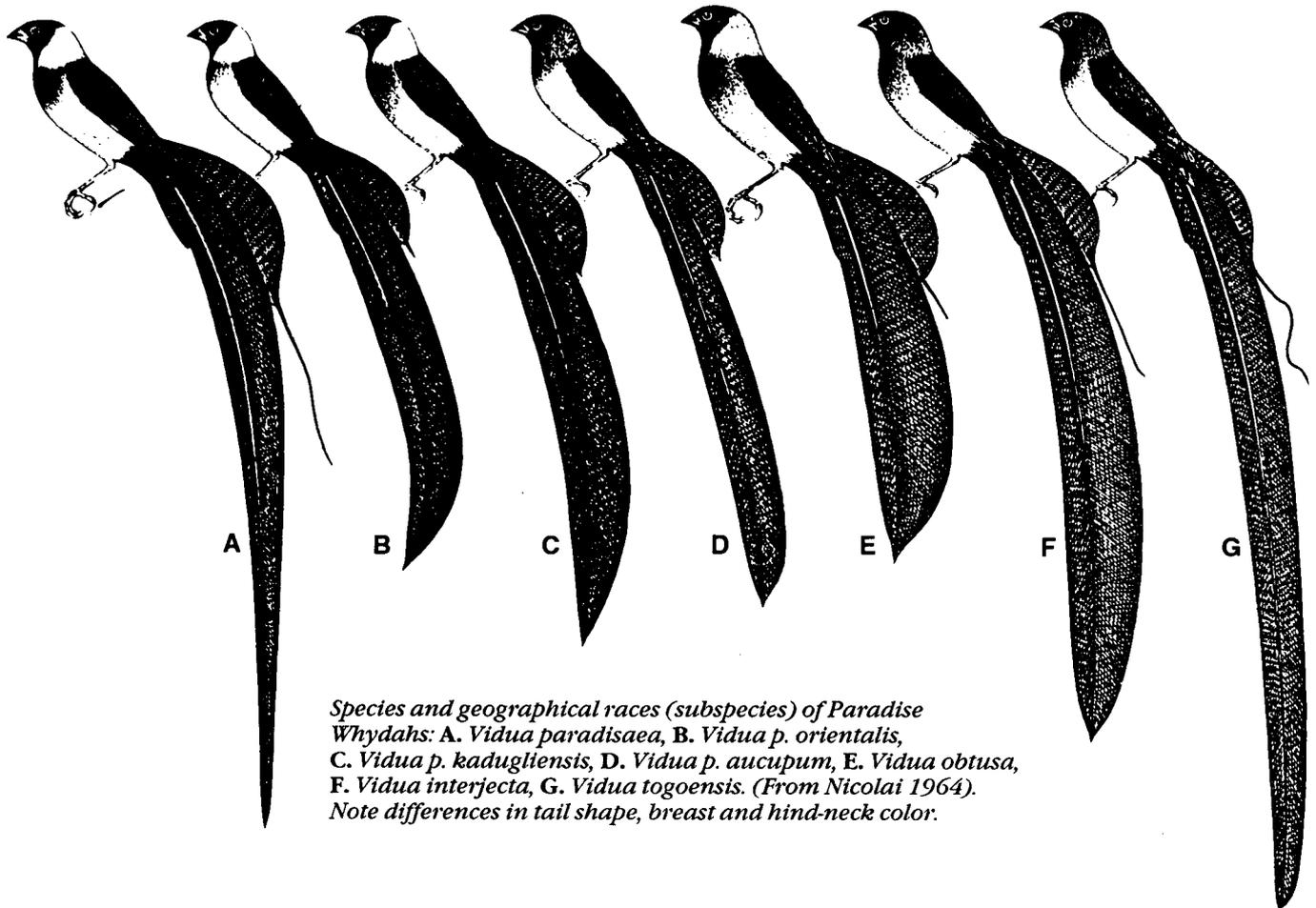
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Species and geographical races (subspecies) of Paradise Whydahs: A. *Vidua paradisaea*, B. *Vidua p. orientalis*, C. *Vidua p. kadugliensis*, D. *Vidua p. aucupum*, E. *Vidua obtusa*, F. *Vidua interjecta*, G. *Vidua togoensis*. (From Nicolai 1964).
 Note differences in tail shape, breast and hind-neck color.

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and pattern and by the shape of the tail. The following is a key modified from that devised by the late Herbert Friedmann (1960: 158) which may be used to distinguish Paradise Whydah species:

- 1a. Elongated rectrices tapering noticeably terminally *V. p. paradisaea*.
- 1b. Elongated rectrices tapering terminally.

- 2a. Hind neck pale yellow without any orange golden brown.
- 3a. Wing 75-80 mm. Breadth of rectrices 24-30 mm ... *V.p. orientalis*.
- 3b. Wing 80-89 mm. Breadth of rectrices 35-37 mm ... *V. obtusa*.
- 2b. Hind neck golden orange brown or darker.
- 4a. Breast not noticeably darker than hind neck.
- 5a. Long rectrices very long,

Whydah Species and Their Hosts

WHYDAH SPECIES

- Paradise Whydah (*Vidua p. paradisaea*)
- Broad-tailed Paradise Whydah (*V.p. orientalis*)
- West-African Paradise Whydah (*V.p. aucupum*)
- Golden-naped Paradise Whydah (*V.p. kadugliensis*)
- Broad-tailed Whydah (*V. obtusa*)
- Cameroons Paradise Whydah (*V. interjecta*)
- Togo Paradise Whydah (*V. togoensis*)
- Queen Whydah (*V. regia*)
- Fischer's Whydah (*V. fischeri*)
- Steel-blue Whydah (*V. hypocherina*)
- Pintailed Whydah (*V. macroura*)
- Village Indigobird (*V. (Hypochoera) chalybeata*)
- Baka Indigobird (*V. lavarticola*)
- Variable Indigobird (*V. funerea*)
- Wilson's Indigobird (*V. wilsoni*)
- Jambandu Indigobird (*V. raricola*)

HOST

- Melba Finch (*Pytilia melba*)
- Orange-winged Pytilia (*Pytilia afra*)
- Aurora Finch (*P. phoenicoptera*)
- Yellow-winged Pytilia (*P. hypogrammica*)
- Violet-eared Waxbill (*Uraeginthus granatina*)
- Purple Grenadier (*U. ianthinogaster*)
- Black-cheeked Waxbill (*Estrilda erythronotos*)
- Red-eared Waxbill (*E. astrild*)
- Senegal Firefinch (*Lagonosticta senegala*)
- Masked Firefinch (*L. larvata*)
- Dark Firefinch (*L. rubricata*)
- Bar-breasted Firefinch (*L. rufopicta*)
- Black-bellied Firefinch (*L. rara*)

over 275 mm.

6a. Long rectrices 290-360 mm.... *V. togoensis*

6b. Long rectrices 284-298 mm....*V. interjecta*

5b. Long rectrices shorter, under 275 mm *V.p. aucupum*

4b. Breast definitely darker, more brownish, than hind neck *V.p. kadugliensis*

Closely related parasitic species lay in nests of closely related host species. Thus all the various Paradise Whydah species lay eggs in nests of *Pytilia* species, i.e. Melba Finches and their relatives. The related Queen and Fischer's Whydahs lay in nests of Violet-eared and Purple Grenadier Waxbills respectively. The Steel-blue Whydah lays in nests of Black-checked Waxbills (*Estrilda erythronotus*). The Pintail Whydah chooses various other *Estrilda* Waxbill species as hosts. Finally all the Combassou species, essentially Whydahs with short tails, lay in nests of various Firefinches (*Lagonosticta* spp.).

Adaptations for a Brood Parasitic Mode of Reproduction

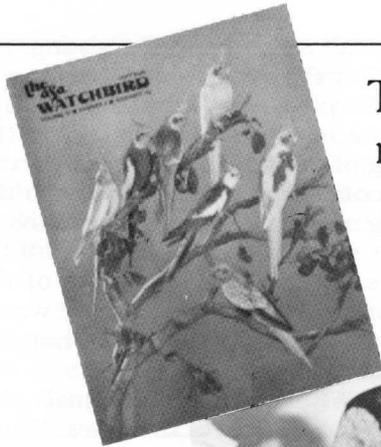
To ensure that the host will accept and raise the parasite, Whydahs have evolved a number of "tricks" to fool the host:

1. Each Whydah nestling uses the identical begging call of the host nestling. Nicolai (1964) has raised Fischer's Whydahs under Society Finches and found that the Whydah's mimetic begging calls are innate, i.e. inherited and not learned. In the course of evolution, Whydahs have evolved begging calls matching those of their hosts.

2. The parasite young has similar plumage as its host. The beginner may have difficulty telling apart a Combassou fledgling from those of the Firefinch host. However, Combassous scratch for food on the ground with both feet kicking backwards at once and Firefinches never do. This should give the novice a certain clue as to what he has in his fledged brood.

3. Estrildids have very colorful palate colors and markings. Incredibly, each Whydah parasite has almost identical palate colors and markings as its specific host.

4. With the exception of some species such as Cutthroat Finches (*Amadina fasciata*) and Parrot Finches (*Erythrura* spp.), estrildid finch chicks beg in a very special manner. Rather than stick their heads



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straight up and open their bills as in the picture on the Nestle Chocolate label, estrildid finches twist and lower their heads below the horizontal so as to expose the mouth markings. The nestling or fledgling viduine parasite twists its head like the host nestling when begging for food.

5. The parasite's eggs tend to hatch in 10 to 11 days, i.e. a day or so earlier than the eggs of their hosts (12-14 days). Thus a parasite may have an advantage over its foster siblings by having a head start. However, unlike Cuckoos and Cowbirds, eggs and/or young of the host species are not destroyed but are raised along with the parasite (Morel in Payne 1977).

Nicolai's (1969) field studies reveal the extent of parasitism by some Whydahs in the wild. Paradise Whydahs lay larger eggs than those of their host the Melba Finch and may be easily recognized. He found Whydah eggs in 13 of 15, i.e. 86.7%, of the nests of Melba Finches. Each Melba nest contained two or three Whydah eggs. In one Melba nest Nicolai counted four eggs on March 14. On March 15 he counted seven eggs in the same nest. The three new eggs were laid by Whydahs, three females laying on the same day. Eleven of 15 nests (73.4%) of Grenadier Waxbills were found to contain eggs of Fischer's Whydahs: four nests contained one Whydah egg, six had two, and one had three parasite eggs.

Does a female viduine sometimes lay more than one egg in the same nest? Payne (1977) answered this question by placing one pair of Village Combassou in an aviary full of Red-billed Firefinches. He found 22 firefinch nests with eggs of which nine contained one Combassou egg in addition to that of the Firefinch, four had two Combassou eggs and three had three Combassou eggs per nest. The viduine eggs were larger and rounder than the Firefinch eggs and were thus easily recognized. Payne (1977) also found that a female Paradise Whydah (*V. paradisaea*) may lay up to 26 eggs per season, and a Village Combassou (*V. chalybeata*) may lay up to 22.

Songs of Whydahs and Their Functions

With the exception of the Pintail and Steel-blue Whydahs, each parasite also learns the song and all the other vocalizations of the host Waxbill or Firefinch. Thus the Paradise

Whydah sings the Melba's song, the Fischer's Whydah sings the song of the Purple Grenadier, and the Village (or Senegal) Combassou sings the song of the Red-billed Firefinch, etc. (Nicolai 1964). By listening to the song of your Whydah you can tell its host species. Very seldom do Whydahs lay their eggs in nests of the wrong host and thus learn the wrong song, although this does happen occasionally.

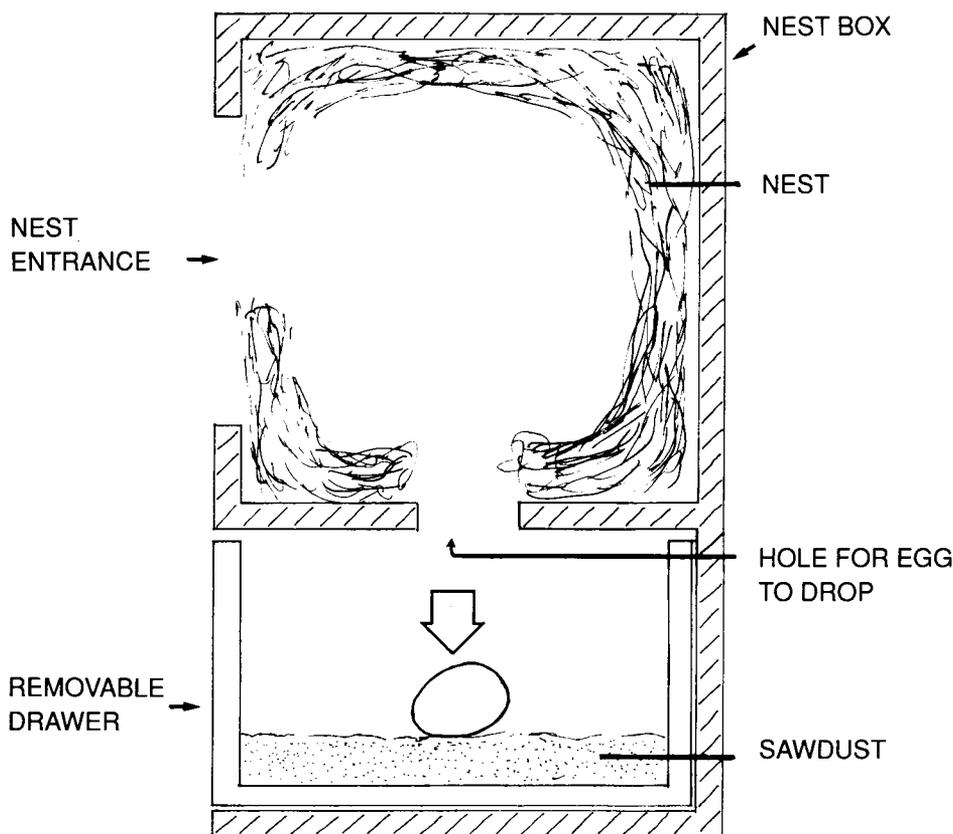
All Whydahs are "bilingual", i.e. they have two vocabularies. When males are competing with each other, they sing their conspecific Whydah songs. When males are courting or trying to advertise for a female, they sing the estrildid finch song of their host.

Bob Payne (1973) played taped Melba Finch songs to a female Paradise Whydah and she eventually laid an egg. He also played taped Red-billed Firefinch songs to a female Combassou and she ovulated. Subsequently Payne (1983) played songs of different Firefinch species to Village

Combassou females. The Combassou developed ovarian follicles only when they heard the song of the correct host, namely the Red-billed Firefinch. Thus, the song of the host also stimulates the female parasite to produce hormones and lay eggs. This is important to remember in Whydah husbandry as developed below.

Whydahs are promiscuous, i.e., there are no pair-bonds between boys and girls. Males often gather in a "lek" (Norwegian for playground) to sing and display, and females come to copulate and then leave to search out host nests to lay eggs. Bob Payne studied leks of Combassous in great detail and found that it is the alpha male that receives the most visits and copulations with females (Payne and Payne 1977). The rest of the males usually just get to watch.

Whydahs and Combassous have been bred from time to time in aviaries. From the published literature, Combassous appear to be the more regularly raised species in captivity followed by the Pintail Whydah (e.g.



Special nest-box designed by Karl Sabel to breed Whydahs and Combassous.

Poulson 1956, Payne 1977). The Paradise Whydah has also been bred in captivity (Lloyd 1955). It is a great challenge to breed Whydahs using their natural hosts, however, this is not often practical as all Whydahs tend to be egg-eaters. Indeed Nicolai (1976) suggests feeding Whydahs raw egg-yolk as part of their diet.

Karl Sable has successfully bred Broad-tailed Paradise Whydahs (*V. obtusa*) using a special nest box that he developed. This consists of a half-open finch nest box with a false bottom equipped with a small tray filled with sawdust. Place the modified nest box in a cage or aviary and let an estrildid build its domed nest within. Zebra Finches or Societies may be used for this purpose. Now dig a hole with your fingers on the nest floor.

Place the special boxes containing nests in the aviary or large cage holding your viduines. Since viduines are promiscuous, one could theoretically keep several females with one male. Indeed, if more than one male is kept in an aviary one may expect frequent fights and even deaths of the subordinate individuals if the aviary is not large enough. Now either play taped songs of the hosts or, better still, place a breeding pair or singing male host Firefinch or Waxbill in a nearby cage or aviary. Remember it is the song of the host, and better still the sight and sounds of the host's nesting activities that stimulates your Whydah female to lay. If your Whydah lays in the specialized nest-box, then the egg should roll down the hole into the sawdust trap where the Whydah cannot eat it. The eggs may then be harvested and placed under Society Finches or Zebra Finches. Combassou eggs can be placed under pairs of Firefinches known to be good parents. Nicolai (1969) hatched Broad-tailed Whydah eggs under Bengalese and then moved them to a nest of *Pytilia* who successfully raised the parasite.

Viduines do not imprint sexually on Bengalese Finches. Indeed, when Nicolai was studying the biology of viduines in the wild, he traveled with a land-rover stuffed with cages containing breeding pairs of Bengalese. Whenever he found a viduine egg or nestling in a Waxbill nest, he simply popped it under the Bengalese and in this way actually raised them successfully and later transported them to Germany where he continued his ontogenetic studies. The Societies

were fed egg-food which were, in turn, fed to the parasites. Bob Payne (1977) also used Societies in the field to see if larger, rounder eggs found in estrildid nests were those of viduines. Eight large eggs collected in the wild produced viduines and six small eggs produced Firefinches.

Epilogue

Some years ago I warned aviculturists (see *Watchbird* 5: 28-32, 1978) that someday as third world countries develop an environmental consciousness, exports of exotic birds will stop altogether. The day is almost here. If you wish to continue to enjoy the songs and displays of Whydahs in your aviaries, now is the time to place some efforts in establishing captive breeding strains. Since Whydahs learn songs of hosts and are sexually stimulated by their songs and displays, it is theoretically possible to imprint Whydahs on Society or Zebra Finches as hosts that raise them in captivity and thus establish domestic strains. These will be domestically raised Whydahs independent of the need for their sometimes harder-to-acquire natural hosts, the Firefinches and Waxbills. Once you do this, you should have more freely breeding viduines in your aviaries, i.e. strains of Whydahs stimulated to breed by hearing songs of Bengalese or Zebra Finches.

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