

Following concern over the status of the hooded siskin (Carduelis cucullata) in its native Venezuela, an attempt at surveying the captive population of this delightful species was undertaken. Although a fairly ambitious project, details of the proposed census were circulated, via four regional collators, to many journals and individuals throughout the world in the hope of obtaining as much publicity as possible for the project.

Problems encountered were many, the most restrictive being the language barrier but despite this, some valuable information has been forthcoming, a summary of which is set out below.

For convenience the data has been divided into two sections: Captive Status — attempts to summarize the populations for each country from which information was received and is applicable to 1984, data being requested for 1st January 1985; Husbandry — attempts to analyze the methods adopted by the various aviculturists who forwarded details

Captive Status

South America

Peru — Information received via Mary Goodwin would indicate that a captive population does not exist at the moment.

Uraguay — As for Peru.

Venezuela — Replies were received from three breeders, Juan Camacaro, Vincenzo Serino and Domingo Conde, all of whom had kept the species for some considerable time, 30, 20 and 28 years respectively. Breeding has taken place over a number of years with Serino and Conde reporting success covering as many years as kept. Camacaro has been breeding the species for five years. Numbers reared in 1984 were 3, 24 and 26.

At maximum, there are believed to be only one or two other breeders in the country with whom contact was not made.

North America

Pat Demko reared 19 (11 males, 8 females) in 1984 from eight pairs, all of which were parent-reared. Otherwise little information was forthcoming but it is evident that a fairly substantial population does exist but with the species singled out for research by the Conservation Committee of the American Federation of Aviculture, it is hoped that more exhaustive data will be available in the near future.

The only return received showed the breeder to have had success from 1976 with between 15 and 36 reared annually. Present breeding stock consists of 10 pairs.

Australia

A viable population exists but little information materialized. The Australian Federation of Aviculture is planning a survey of stock within the country which it is hoped will give an insight into the numbers kept and bred. **South Africa**

A fragile population in the care of one aviculturist. Fred Barnicoat of Johannesburg, who has five pairs plus three males. In 1984 three of the five pairs laid and two hatched young. Two males only were reared from one pair.

Europe

Gibraltar. At present being bred by D. Galliano. Five young reared in 1984 proved to be four cocks and one hen from one pair. Total number of birds is now three pairs and two odd males. Norway. Does not seem to be represented. Enquiries by H.R. Grastveit to the country's eight bird societies proved negative.

Denmark. On hearsay, represented in several collections with breeding

reported in one. Many letters written but practically no replies.

Sweden. Represented in at least one collection, that of U. Magnusson who has several birds.

Britain. Very few birds with a total population of less than a dozen. Most are males in the hands of canary breeders but a pair owned by H. Brierley bred for the first time in 1984, rearing four (3/1).

West Germany. Details of the census were printed in several magazines but only one reply was obtained, and that from an aviculturist who had just obtained his pair. However, Joachim Steinbacher, editor of *Die Gefiederte Welt*, states: "I am now quite sure that we have in Germany many hundreds of successful breeders."

Italy. Through the cooperation of the Federazione Ornicoltori Italiani who initially sent a lst of 14 keepers/breeders, we were able to obtain the only documented evidence provided by our returns, that the hooded siskin is bred in quite substantial numbers, confirming a generalization made by Bruno Mancini in Cage and Aviary Birds (reference unknown).

Of the 14, replies from only three materialized but they do provide an insight into how prolific the species can be with the correct management techniques. One can only surmise that the species is well established in Italy. Their achievements for 1984 are as follows: Franco Pontiggia, 129 reared from 18 pairs; Giorgio Lattanzi, 49 (31/28) reared from 8 pairs; Giovannia Bertolini, 124 (68/56) from 12 males mated to 15 females.

Spain. The only reply was received from Juliana Miralles Vila, via the Federacion Ornitologica Venezolana. Success being achieved for the previous 16 years with the 1984 season yielding 29 independent young from six pairs. Although impossible to ascertain numbers, it would appear from the above success, and various breeding accounts which unfortunately lack numerical data, that its existence is well established in Spain.

Belgium. No helpful replies but on hearsay it is believed to be extensively bred.

Holland. As for Belgium.

No replies were received from New Zealand, Japan, Malaya, Singapore, Switzerland, Portugal, Hungary, Austria, East Germany or France. However, in fairness, it must be said that in most cases the language problem and lack of contacts were a considerable barrier. Despite the problems, it is possible to

get an idea of how the captive population stands. Unlike the situation in the wild, numbers of the hooded siskin in captivity seem to be on an upward trend, even if only in a limited number of countrires, and it is more than probable that the number held in captivity exceeds the wild population.

The unsavory practice of smuggling continues to be a threat to the wild population and it is a situation that must not be condoned, but one cannot help wondering whether the practice could be completely stamped out if the Venezuelan authorities allowed the export of captive-bred, close-rung birds, especially males, of which there seems to be a surplus and for which there is most demand. Captive breeding could also, in time, satisfy a local demand.

In response to our efforts, three Venezuelan aviculturists sent in their returns: between them they have 78 years' experience in keeping, and 53 years of breeding the hooded siskin, rearing 53 young in 1984. To ignore this depth of experience in an endangered species' homeland, while trying to save it from extinction seems shortsighted indeed.

Husbandry

In addition to the information collection from questionnaire returns, Professor Antonio Rivero has kindly given his permission to quote from his book El Cardenalito de Venezuela which was painstakingly translated.

To make the task of compilation simpler and information easier to pinpoint, material is placed under separate headings, roughly along the lines of the questionnaire, but with additional data included where necessary.

History of stock. Where details have been divulged, it seems that most owners obtained their breeding stock from established breeders. Certainly in European countries at least the vast majority of birds, if not all, are now captive-bred.

Identification. Many birds are closerung, but it appears that in Italy, breeders of the hooded siskin (and others?) are registered with the Federazione Ornicoltori Italiani and given their own coded rings. Lattanzi was the only one to give details on rings, his being put on during the sixth day.

Accommodation. The method favored by all breeders was an indoor environment, although Barnicoat did experiment with a completely covered outdoor aviary with some success. Indoor accommodation allows a means of controlling temperature, if necessary, and eliminates problems caused by dramatic changes of climate, and predators.

Cage sizes seemed unimportant as results were not proportionate to space provided. Bertolini bred his birds in cages measuring 60 cm x 30 cm x 30 cm which were presumably of the box type with a wire front. Only Barnicoat and Brierley kept their birds in what could be considered flight cages, and which had a minimum length of 180 cm; both have bred young.

All others housed their birds in presumably box-type cages, the length of which varied between 60 and 80 cm with height and depth roughly half the length size. Only Lattanzi gave extra depth in proportion to length.

Most breeders keep their birds in a quiet, tranquil area to avoid disturbance but Conde never found it necessary and kept his birds in the kitchen, with all the accompanying noise and "...my birds still reproduce in a most healthy manner."

The subject of artificial light is only mentioned by Pontiggia who extends day length by about half an hour before dawn, starting at the beginning of March to arrive at a maximum of an hour by the end of April. This regime is kept up until the end of July.

Where heat is controlled, a range between 15-21°C seems to be preferred but several breeders allow it to drop much lower. Although fit birds seem able to cope, as Pontiggia notes, health problems may be encountered, particularly in elderly birds.

Diet. Perhaps the most important aspect of husbandry and one on which several authors give very detailed information. Pontiggia, who goes into it very thoroughly, gives the following:

½ Niger

1/2 Wild Chicory Cichorium intybus, Huds Dispacus silvester, Hemp Cannabis sativa — in equal parts

Lettuce leaves and/or slices of apple are given daily, as are two spoons of husked sunflower seed. Grit, very fine sand and cuttlefish 'bone' are also given.

During the breeding season (March to August) the following seeding weeds are added to the previous diet:

Oats, Avena satura June/July Shepherd's Purse, Capsella bursa-

pastoris April/May Chickweed, Stellaria

media Feb/March/April/May Wild Chicory, Cichorium

intybus Aug/Sept./Oct. Couch Grass, Agropyron repans June/July/Aug./Sept.

officiniale June/July/Aug./Sept.

Hedge Mustard, Siymbrium

doctylon April/May/June/July Smooth Meadow Grass, Poa pratensis April/May/June Patience Dock, Rumex patientia June/July Greater Plantain, Plantago major June/July/Aug. Groundsel, Seneccio vulgaris April/May/June Dandelion, Taraxacum officiniale . . March/April/May/June Besides the above, the following unripe

Bermuda Grass, Cynadon

ears are also fed: Maize, Zea mays July/Aug./Sept. Small Sunflower, Halianthus

annus Aug./Sept./Oct. Italian Millet, Setaria

italicaJune/July/Aug. Common Millet, Panicum

miliacum June/July/Aug. Finally, three times a week, a soft food is given, made as follows:

1 glass of wheat semolina

1 glass of milk powder (as for calves) mixed with water

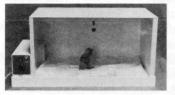
This is cooked for 10 minutes adding three egg yolks and albumen before boiling point is reached.

All give additional food during the breeding season, several provide it just









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prior, as the birds approach breeding condition. Rivero suggests a mixture of 65% bird seed, 10% rape, 10% niger, and 5% each of turnip seed, linseed and hemp. Conde feeds a mixture of one pound of rape, one pound of oats and half a pound each of hemp and wheat germ, blended in a liquidizer. Brierly gives a quarter of a teaspoon of a mixture of linseed, hemp, teazle and a few groats, half a teaspoon of niger and rape ad lib.

The provision of a soft food is practiced by most although Brierley states that although his young were reared by canaries, they would not touch egg food. Several formulae are given below: Serine: 2 litres of milk mixed with 1 kilo

of cornmeal and two eggs.

Vila: A paste with a base of breadcrumbs, sova flour and some seeds such as niger and rape. Additional to this, Vitamin E, calcium and Terramycin (oxytetracycline - an antibiotic) are included in the breeding season. Extra water is added, if necessary, to ensure the mixture is not compacted.

Other items offered during breeding are: hard-boiled egg, chickweed, lettuce (of which they seem to be extremely fond), watercress, dandelion, green pepper, apple plus the usual cuttlefish 'bone' and mineralized grit. Only Rivera mentions live food, ". . . small portions of insects, such as mealworms, are indispensable."

Out of the breeding season, many feed "standard" canary mixture, plus greenfood and fruit. Lattanzi, however, feeds a mixture of six parts plain canary, four parts niger, one part small hemp, one part linseed and half a part each of teazle, chicory and lettuce seed.

Nest Receptacle. The most favored receptacle seems to be a "typical" canary nest pan but the material from which this is made seems to differ from country to country and is either of plastic, wood or wicker. Only Pontiggia mentions the use of half open-fronted boxes; these he placed high up, three to a cage.

Nesting Material. The type used for canaries seems to be the most favored but moss, fine dried grass, plumber's hemp and horsehair are also offered. Serino offers "strings of jute which is usually enough to bring females into breeding condition."

Nest Construction. Carried out mainly by the female but behavior is variable with some males assisting.

Pairing. Rivero reports males to be polygamous and very active sexually, both in the wild and in captivity. Most

breeders keep their birds in pairs but Pontiggia had one "very restless" male which he used to introduce to a female when about to lay. In this way, he could get four hens to lay almost together. Bertolini reports using 12 males with 15 breeding females.

Clutch Size. Ranges from three to five whitish eggs. Approximate size 15.8 mm by 12.2 mm (Rivero).

Number of Broods. Rivero gives the number of broods in the wild as one or two. Captive pairs can have as many as four but three seems to be the most usual for prolific pairs in an average breeding season of about five months. Less prolific pairs may only have one or two. Generally it seems that pairs kept as canaries are the most prolific in terms of broods, and consequently numbers, reared.

Incubation. By female alone and lasts from 12 to 14 days.

Fertility. Only two breeders give statistics. Bertolini says "in the region of 80%" while Pontiggia gives "hatch percentage" as 85-95%. However, where fertile eggs have been laid with others, percentage hatching seems to have been very good. At present there seems little degeneration of stock. Bertolini gives dead-in-shell as 3% but this must surely be an acceptable level.

Progress of Chicks from Hatching. (Rivero) "Young are born with dark reddish skin, covered with fine grey down. For the first three to five days, only the female feeds the young but after approximately the fifth day the male helps with the feeding. When the male brings food to the young, he gives a soft "call." The young, recognizing this call, immediately raise their heads and open their beaks to be fed. After the sixth day, the young give small chirps or peeps in a tone that seems to be characteristic of the species of the genus Carduelis

"It is the female that cleans the nest from the first to approximately the seventh or eighth day. After each feeding, the young face the centre of the nest, depositing small faecal sacs on the edge of the nest. These are picked up by the female and thrown out. From about the eighth day the young have grown sufficiently to expel the faecal sacs over the edge of the nest."

Some breeders found males to be excitable and removed them when young were in the nest. Their eyes open at six days old and they fledge at about 15 days, although Barnicoat gives 21 days for his birds.

Independence. This is achieved in 32 to 40 days but, as with most birds, the young may continue to be fed for a time afterwards.

Sex Ratio of Young. Bias seems to favor males, with all except Pontiggia having bred a surplus. However, in his return he states, "After many years of breeding, I have noticed that the voungsters are more hens than males, approximately one male to three hens."

Hand-rearing. Pat Demko was the only breeder to report hand-rearing, and then only if necessary. In such cases she used Abba 92 nestling food, finely sifted, adding hot water and a little hard-boiled egg volk. A split plastic band expander was used to feed with. Babies being hand-fed are kept in a hospital cage at 90°F if unfeathered, gradually lowering the temperature as they feather.

Fostering. Three breeders, Serino, Brierley and Barnicoat, use fosters for both incubation and rearing while others have potential foster parents on hand in case the need arises. Canaries are the most favored, but Pontiggia has also used redpolls, siskins and, in 1983, even a rosefinch hen. Conde likewise fostered when necessary and found Andean siskins (Carduelis spinescens) the best mothers and vellow-bellied siskins (C. xanthogastra) the best fathers. Pontiggia remarks on the subject, "In my opinion, the true mother gives the chicks all the antibodies they need to grow perfectly, therefore I try, if at all possible, to parent-rear and to keep in the youngsters the feeding instinct."

Hybrids. The crossing of male siskins with the canary to obtain the much sought-after "red factor" is well known but other hybrids are on record. Rivero believes that hybrids with the Andean siskin occur naturally where the ranges overlap. This cross has also been achieved by Serino while Pontiggia in Italy crossed it with goldfinch, redpoll, Mexican rosefinch and siskin, presumably using the hooded siskin as male parent. A male from the redpoll cross proved fertile when mated back to a female redpoll.

Longevity. On average Pontiggia gives a five or six year life span and is of the opinion that a diet of canary, pannicum and sunflower seeds give the longest life. A ten-year-old male, still very fertile, is cited by Bertolini. An eight-year-old hen is still in the collection of Pat Demko.

Ailments. Rivero devotes a whole chapter to the sujbect but most of the illnesses mentioned seem to occur in newly caught specimens and for the most part must be attributed to capture

stress and resultant problems.

Only two returns touched on the subject of health: Pontiggia, with his usual thoroughness, reports, "Deaths usually happen, as with most birds, in the very delicate period of the moult. It is well known that for specimens not in good condition it is difficult to pass this vital period. A bad and long moult is a symptom of not very good general condition and, therefore, I do not use these specimens for future reproduction. It is generally three- to four-year-old birds that find the moult a trial.

"It can also happen that some youngsters show abdominal swelling. Any birds showing symptoms are isolated and given only canary seed and lettuce. I think that it is possibly caused by an excessive preference for oily seed, in particular niger and sunflower. Normally in this way, after about 20 days, specimens come back to normality. However, they are kept under examination and, if possible, not used for breeding.

"Some deaths in winter are due to difficulty with respiration (usually in old birds). I think this is due to a cold temperature of 2 to 3 °C and also to sudden changes in temperature. In these cases, I try to intervene, bringing it up to about 10 to 11 °C.

"However, I consider losses of 9 to 10% normal and, therefore, do not give medicines."

Rivero cites, "abdominal inflammation" as a cause of death, giving it as "the most common and typical illness of red siskins," but gives no solution other than antibiotics.

Vila relates that deaths are attributed to no specific illness and that siskins generally appear to be stronger than canaries. Lack of notes by others would suggest a relatively trouble-free species, if managed properly.

Precautionary Treatments. Only Pontiggia mentions giving a preventative prior to the breeding season. At about the end of February/early March, a two-week course of Bimixim antibiotic is given and to avoid the use of anti-acari insecticide powder, Tabar stripe insecticide is used in the birdroom, changed on average once a month.

Acknowledgements

An undertaking such as this involves the work of a great many people, many of whom have gone unnamed. To these and all aviculturists who took the trouble to return questionnaires, gratitude is extended for all your assistance. On a personal footing, I would like to thank the three regional collators, Steven Amos, Mary Goodwin and Bryan Reed, whose enthusiasm made the census possible and whose hard work is, I hope, amply rewarded with the publication of this report.



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