

Rearing Pesquet's Parrots at Loro Parque

by Rosemary Low, Grand Canary Island, Spain

During the two years I looked after the birds at Loro Parque, Tenerife, one of my aims was to rear as many species as possible that were not well established in aviculture, and to obtain and publish data that would assist others in the reproduction. In this period, 96 species (plus a number of sub-species) were hatched and reared there, plus an additional three in my own collection which were kept on the premises. Of these 99, three species were especially dear and important to me. The young (hand-reared and parent-reared) gave me immense pleasure. They were Blue-throated (Caninde) Macaws (*Ara glaucogularis*), Moluccan Cockatoos (*Cacatua moluccensis*) and Pesquet's Parrot. Alas, all three are threatened by man's activities and are now on Appendix 1 of CITES.

Pesquet's Parrot (*Psittichas fulgidus*) is not — yet — but is an almost certain candidate. It is the least known and most rarely-bred of the three in captivity. A spectacular, large parrot with scarlet and black plumage, once seen it can never be forgotten. Its colour scheme and unusually shaped head and beak make it one of the most distinctive parrots in existence. There are rare exceptions, but adult birds can normally be sexed by the presence, in the male, of a small patch of red feathers behind the eye. All immature birds show this characteristic. Admittedly, sexual dimorphism is slight — but in no other parrot species in which the immature bird has been described, does it resemble the male, rather than the female. But this species has a number of unusual characteristics and, no doubt, others will be revealed when we know more about its biology.

It is a highly specialized parrot, adapted to feed on the pulp of fruits only. The lower mandible (thus, of course, also the upper) is elongated, no doubt, to form a scoop with which to remove the fruit pulp. The side of the face and the forehead are covered in hair-like feathers. If these areas were normally feathered, they would become matted with particles of fruit. This feature is reflected in the scientific name: *trichas* which means hair. Length of this species is about 20 in. (50 cm) and its weight is about 900 grams.

In February 1987 when I took my position in Loro Parque, this species

was represented by an adult pair and a young male reared in the previous year, the latter on exhibit. Delightfully tame and inquisitive, he attracted the attention of many visitors. He was very playful and his regular keeper was entertained by his antics with the rake (the floor was of sand) during the daily cleaning session. During any repair or alteration, it eventually became necessary to shut this male in a cage because he became so involved in "helping" that it was difficult to carry out the work! Strangely enough, he did not like the keeper who worked the days off of the regular keeper. I give these anecdotes to show how responsive tame birds are towards people.

Accommodation

His parents were housed in an aviary in the original breeding centre (off-exhibit). Their aviary measured approximately 24 ft. (7.2 m) long, 8 ft. (2.4 m) wide and 8 ft. (2.4 m) high. The situation was fairly enclosed; the lack of light in the aviary did not permit photography except with flash, which I dislike using, thus I have no illustrations of aviary or nest site.

Diet

Food of the Pesquet's Parrots during my period at Loro Parque consisted of whole or half fruits spiked to nails on the perch: papaya, apple, pear and banana, also carrot, fed twice daily. Bread and milk was fed once daily. The protein requirements of this species appear not to be high, even when rearing young. At that time, however, I increased the protein slightly by adding a raw egg to the bread and milk. A favourite seasonal food, available for about five months of the year, was the fruit of the prickly pear cactus which grows abundantly on Tenerife.

Pesquet's is one of the few parrots which will not eat seed under any circumstances. They do not recognise it as food.

Candidiasis can be a problem with this species. Regular fecal examination was carried out and the yeast *Candida albicans* was always present. No action is necessary unless the level is high. For this species, it is an easy matter to add Nystatin (Mycostatin, Squibb) suspension to liquidised fruits, bread and milk or an appropriate food that the birds are used to. This is preferable to the stress

caused by catching.

The voice of the Pesquet's Parrot is loud, harsh, rasping — discordant to most ears (but music to those fond of the birds!).

The first recorded breeding occurred in a private collection in the Netherlands in 1977. It was subsequently bred on several occasions at the zoos in Los Angeles and San Diego, and more recently is being bred at the Bronx Zoo in New York. At Loro Parque, Tenerife, it was first reared in 1986; unfortunately, there are no available records for that year. Two chicks hatched in one nest and were removed for hand-rearing — but one died (Pickering, 1986), apparently from candidiasis.

On March 6, 1987, the pair at Loro Parque was provided with a new palm log, about six feet 8 inches (2 m) high. This was prepared by sawing it into two pieces, about 12 inches (30 cm) from the top. An indentation about six inches (15 cm) in diameter and six inches horizontally was made where the two sections joined. It needed three men to lift the log into position.

Initially there was no inspection door, so the date the first egg was laid was not known precisely. It did not occur until nearly seven months later, at the end of October or the beginning of November. Excavation of the nest, mainly by the male, had started very soon after it was installed, and extended over a period of seven months. The pair had to work very hard to make a cavity about 12 inches (30 cm) in diameter and 40 inches (1 m) deep. The sides were smooth, as though machine-finished.

The floor below the nest would be littered with wood chips when excavation was in progress. These were carried out of the nest in the feathers, which would be ruffled to unload them. It was an interesting performance.

During my period at Loro Parque, the female always laid two eggs, only one of which was fertile. The chick, which hatched at the end of November 1987, was removed for hand-rearing on December 10, partly because nest inspection was difficult and partly because the rearing capabilities of the parents were unknown. It was difficult then to assess the age of the chick; it was probably about 12 days because the eyes were just slitting. In a parent-reared chick hatched the following year, the eyes opened at 14 days. The weight records showed that its age on removal from the nest

was, therefore, 12 days.

On December 13, estimated age 15 days, the dark feathers of the second down, which had not yet erupted, were apparent through the whitish primary down which was no longer dense, but wispy. The beak was greyish with uneven pinkish areas. Feet and cere were pink and the nails were black. The chick sat very upright.

By December 24, the charcoal grey second down had erupted over body and nape — but not over the head. The face was almost bare of down. The periorbital skin was unpigmented. The eyes were wide open; ears were also open. The beak was black on the basal half, pink near the tip of the upper and lower mandibles.

By January 2, the red feathers of the wing coverts had just started to erupt. A few strands of yellowish down clung to the head. The periorbital skin was dark grey and the beak was mainly black except the tip of the upper mandible. The body was so thickly covered in second down that one assumes that by this age, in the wild, the parents are no longer brooding their chicks. By February 20, the chick was fully feathered with a short tail and yellowish down still clinging to the head. All unfeathered areas and the beak were black.

Hand-rearing this young Pesquet's — and those to follow — was a delight. The young of this species are so gentle, affectionate and responsive. In no other parrot is the physical process of feeding the chick so easy. It has a wide gape like a softbill and the food is almost poured in. Here I should point out that I give food of a liquid consistency to nearly all parrot chicks. Food for the Pesquet's had almost the same ingredients as the standard mixture I used at Loro Parque but with a higher proportion of fruit and a lower level of protein. It consisted of papaya, banana, carrot, wheat germ cereal and Nestle's baby cereal (Milupa, my cereal of choice, was not available). It was notable that the feces of the *Psittichas* chicks were different in texture and consistency compared to those of the other parrot chicks which surely indicates a difference in the digestive system.

The young are ever eager for food and seldom refuse food from the spoon. Digestion was very rapid. Young would normally be fed as soon as the crop was empty, between 6:30 a.m. and 10 p.m. Here I would like to pay tribute to the wonderful girls who worked in the hand-rearing

room, Inma and Mena, and Sandra who worked their day off, as I did also. We all doted unashamedly on the Pesquet's chicks. It was difficult to be "tough" with them, thus they were slow to wean. The first food they sampled would be ripe papaya; slowly they accepted other fruits and carrot. The first chick, taken to the hand-rearing room on December 10, did not leave until May 30. Even then he was taking food from the spoon. I moved him to a small aviary near the clinic, where my office was situated, and continued to spoon-feed him there, initially twice daily.

The rearing of the 1987 chick had proved easy — too easy. It lulled me into a slightly blasé attitude towards rearing this species. The female did not lay again until early May 1988, after the nest had been excavated a further 80 cm. There were two eggs, and one chick was present in the nest on June 9. This chick was removed for hand-rearing on June 20 when it weighed 143.9 g with food in its crop. Next morning, with empty crop, its weight was recorded as 127 g.

In appearance, this chick differed from the first. The second down was lighter grey, except on the wings. The down on the head was white-grey as far as the crown, but light grey from crown to nape, with a clear line of demarcation.

At the time this chick was being reared there were quite a few chicks of large *Ara* macaws in the hand-rearing room, thus the basic rearing mixture then had a higher protein content than that used when the first chick was reared. This second chick was growing well. At 40 days, it weighed 488 g before feeding and 533 g with the crop nearly full. In comparison, the first chick had weighed only 340 g when its age was estimated at 40 days. However, at the same age the only parent-reared chick weighed 606 g with some food in the crop.

By the end of August, I was becoming very concerned about the chick being hand-reared. It looked magnificent, was nearly as large as an adult and weighed nearly 900 g — but it coughed a lot after being fed. Fecal analysis failed to show any abnormality. On the evening of September 7, an urgent summons to the hand-rearing room revealed the young Pesquet's on the floor of her cage in distress and barely able to breathe. Alas, she died a few minutes later.

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This Pesquet's Parrot chick has not yet acquired its grey down coloration at seven days of age.



Pesquet's chick at 83 days of age.

Necropsy showed severe damage to liver and kidneys. No histology was carried out. At the time I believed that the diet was to blame, possibly an excess of protein. However, future events indicated another possibility: a virus condition.

The female laid again on July 26, 36 days after the previous chick was removed. Assistant curator Mike Gammond pointed out the relationship between the time between each clutch and the amount of work carried out to prepare the nest. He had paid much attention to the log, realising that it, and compatibility, are the key to breeding success. It had taken the pair five months to excavate a further 32 inches (80 cm) for the second nest, to a depth of about 10 inches (25 cm) from the base of the

log. For the next clutch, Mike packed the log with wood shavings. The male was primarily responsible for transporting these out of the nest. When the nest was prepared, Mike made an inspection door at nest level, about 40 inches (1 m) below the entrance.

The two eggs laid in July were placed in an incubator on August 7 because the pair was fighting. Normally they were compatible. On August 25, a chick was pipping at the wrong end of the egg, i.e. the end without the air space. I enlarged the hole slightly to ensure that it could breathe. The following day it was calling loudly. I enlarged the hole minutely and a spot of blood appeared, indicating that it was not ready to hatch. Next day I removed it

from the egg. It weighed 17.7 g and took 0.6 g of liquid food at its first feed. It was covered in long, silky white down, almost like a mane on the forehead and sparser on the underparts. The chick was otherwise pink, including the beak, except for a line of grey on the edge of the beak.

As is normal with chicks which have been reared from the egg, its initial growth was much slower than that of a parent-reared chick; the reduced protein content of its diet was another factor in keeping its weight low. When the dark grey second down grew, it seemed sparser

Weights of two hand-reared Pesquet's Parrots, before and after the first feed of the day.

Hatched:

estimated date Nov. 29, 1987 and June 9, 1988

Estimated Age In Days	Weight In Grams	Weight In Grams
11		— / 143.9
12	76.4 / 82.8	127 / 139
13	78.0 / 84.5	127 / 141
14	73.8 / 84.2	148 / 165
15	80.7 / 95.7	165 / 182
16	87.9 / 110.2	182 / 198
17	102.2 / 112.8	191 / 229
18	109.2 / 125.6	198 / 236
19	118.2 / 121.5	219 / 263
20	121 / 139	230 / 268
21	133 / 148	238 / 278
23	142 / 151	254 / 290
25	143 / ?	304 / 336
27	157 / 202	320 / 371
29	203 / 221	377 / 455
31	238 / 270	384 / 415
35	278 / 379	457 / 507
40	340 / 380	509 / 600
45	385 / 417	619 / 666
50	460 / 514	687 / 740
55	539 / 587	744 / 828
60	600 / 657	742 / 791
65	640 / 699 moved to cage	773 / 852
70	674 / 736 eating papaya	802 / 890
75	715 / 777	809 / 876
80	746 / 789	869 / 933
85	717 / 780	914 / 1014
90	746 / 823	904 / 951 DIED
95	785 / 843	
100	773 / 827	
105	810 / 863	
110	832 / 914	
115	826 / 893	
120	854 / 942	
125	876 / 933	
130	869 / 947	
135	879 / 953	
140	914 / 952	
145	882 / 936	
150	908 / 986	
155	882 / 932	
160	871 / 924	
165	880 / 953	
170	879 / 915	
175	861 / 903	
180	840 / 882	
182	845 / 877 left hand-rearing room but spoon-feeding was continued.	

than in the other chicks. At 16 days it had one eye open. It grew into a beautiful bird, indistinguishable from the others except for its low weight. When I left Loro Parque in February 1989, it was eating quite well on its own but was still taking 40 g to 50 g of food from the spoon at each feed.

After the removal of the two eggs in August, the female laid again after only 28 days, on September 4. The second egg was probably laid on September 7. A chick, presumably from the first egg, hatched on October 5 or 6 to give an incubation period of 28 or 29 days. (The incubator-hatched chick probably hatched after 29 days.)

This time the chick would be left with the parents. This would have occurred in the previous clutch, had events not dictated the removal of the eggs. The Pesquet's proved to be perfect parents. The chick seemed to develop at a phenomenal speed. It was ringed on November 5. By November 11 the female was spending much of the day out of the nest. It was then possible to examine and weigh the chick. It weighed 606 g and looked different to those which had been hand-reared. There was

thick, dark grey down on the body and the red wing coverts were just starting to erupt. Bright yellow down was adhering to the ends of some of the head feathers.

The young one was weighed on three other occasions: November 23, 728 g; November 29, 816 g; December 6, 755 g. On the latter occasion, it was almost fully feathered. Its claws were needle-sharp. It left the nest on December 29, at 85 days. (This compares with 83 days for the Pesquet's reared by Mr. van Leeuwen in the Netherlands and 105 days for one reared at Los Angeles Zoo in 1980 (first U.S. breeding). On another occasion, a Pesquet's at Los Angeles Zoo fledged at 84 days (Thursland and Paul, 1987). On leaving the nest, the one reared at Loro Parque perched confidently between its parents. In fact, it needed to take only a few steps as one end of the favoured perch was attached to the nesting log. To me, a family group is the most rewarding sight within aviculture — but I feared problems if a young one was left too long with its parents. It soon learned to feed itself and was removed from the aviary on January 16 — three weeks before my own departure from Loro Parque.

In 1988, Loro Parque was very fortunate to receive a female Pesquet's reared at Bronx Zoo to pair with the 1986-hatched male. She was a delightfully tame bird who allowed herself to be stroked the day she arrived. It is important that these unrelated birds should eventually be producing young. The production of multi-generations of captive-bred young is the only way that this species will survive in aviculture.

The export of wild-caught birds from Papua New Guinea is no longer permitted. International trade in this species has always been small, unlike the local trade which may be substantial. According to Diamond (1972), the red feathers of this species are 'prized by natives far more than the plumage of any other bird, including any bird of paradise. Even in a poor area like Karimui, a *Psittichas* commanded the relatively enormous sum of twenty dollars, equal to the price of a large pig and not much less than the price of a wife. Despite this popularity, I saw or heard of only three captive *Psittichas* in the Karimui area, an indication of its rareness even in areas with sparse human population. This is one of the few montane species whose existence is threatened

Photo by Rosemary Low



This Pesquet's Parrot was the first reared at Loro Parque. It is a male just over one year of age.

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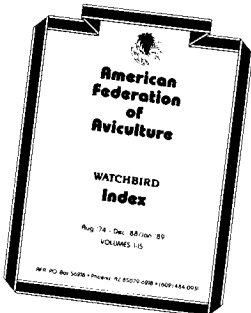
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directly (i.e., as opposed to being threatened indirectly through destruction of its habitat) by man."

This view is echoed in *Birds of New Guinea* by Beehler, Pratt and Zimmerman (1986). They state, "Thus far no species of Papuan bird appears truly endangered but a number are quite rare, and may well be vulnerable to future threats from hunting or development of their habitat. The large and handsome Vulturine Parrot (the alternative name for Pesquet's) is nowhere abundant. In most parts of New Guinea it is rare, and in many localities it is inexplicably absent. Hunting pressure is considerable, because the bird's tail and wing quills are exceedingly valuable for traditional headdresses. Today, they are bought and sold in a black market that is locally thriving."

The importance of captive breeding is underlined by these views. I believe that, like macaws, Pesquet's Parrots could prove quite prolific — once the initial obstacle has been overcome. This is: compatibility. I know of one instance where a male killed a female instantly when she was introduced and another case where the male killed the female after an unsuccessful breeding attempt in which a chick died after a few days. Unfortunately, unlike most macaws, Pesquet's are too rare in aviculture for alternative partners to be easily located.

It should also be borne in mind that most wild-caught birds are easily stressed by removal to a new location. I know of several instances where birds have died a few days after removal to new premises. Fortunately, captive-bred birds do not appear sensitive in this respect.

All those privileged to look after these truly wonderful birds must do everything in their power to persuade them to breed. If they are successful, they must also find unrelated birds so that new pairs are formed. I feel great concern for the future of this species — in the wild and within aviculture.

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Deadline Schedule

June / July '90
April 1 — editorial copy
April 15 — ADS, classified & display

Aug / Sept '90
June 1 — editorial copy
June 15 — ADS, classified & display

Oct / Nov '90
Aug. 1 — editorial copy
Aug. 15 — ADS, classified & display

Dec '90 / Jan '91
Oct. 1 — editorial copy
Oct. 15 — ADS, classified & display

Feb / Mar '91
Dec. 1 — editorial copy
Dec. 15 — ADS, classified & display

Apr / May '91
Feb. 1 — editorial copy
Feb. 15 — ADS, classified & display

