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WILD TAKEN PEREGRINES BREED IN THE MELBOURNE, AUSTRALIA, ZOO

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The fact that the Peregrine (*Falco peregrinus macropus*) bred in the Melbourne Zoo in 1976, 1977, and 1978 is by itself no remarkable event. We feel, however, that the circumstances and conditions under which this pair of falcons bred is for several reasons noteworthy. These data were gathered while working on a Peregrine research project sponsored by the Fisheries and Wildlife Division, Victoria, and we are indebted to Mr. Roy Dunn, curator of reptiles at the zoo, for his help and information.

It is now rather well documented that Peregrines will breed in a variety of enclosures, but there has been considerable speculation and discussion, especially at Raptor Research Foundation meetings, as to the optimum age for taking Peregrines for breeding purposes and the conditions that will best promote breeding. Speculation revolves around the question of whether they breed most easily if taken as small nestlings, as fledglings, as first-year migrants, etc., and what sort of disturbances they will withstand. Most would agree that first-year falcons taken on migration are difficult, if not impossible, to breed, and that falcons taken as fledglings kept in relatively secure and isolated conditions are the easiest to induce to breed (cf. Cade et al. 1977). Although we also agree, the data given herein suggest that factors necessary for breeding may vary more widely than expected, but that the "psychological disposition" of the falcons may still be one of the major overriding factors.

The pair of falcons discussed herein arrived at the Melbourne Zoo in about 1972 as adults after having been found injured. They were from different locations and were not mates. The male had a severely broken wing, which left him flightless. The female had a grotesquely deformed mandible that may have been the result of a collision with utility wires, and she probably had other injuries not readily visible. They were placed in a pen constructed of a mixture of chain-link and chicken-wire fencing. The enclosure is rectangular in shape, about 3 m wide on the narrow end by 6.1 m on the long side by 6.1 m high. The pen has walkways on two sides (the narrow ends) that pass immediately next to it. On one side (the long dimension) is a pen containing several little Eagle (*Hieraaetus morphnoides*) and Laughing Kookaburra (*Dacelo gigas*) and on the other side, a pen with several Whistling Kite (*Haliastur sphenurus*) and Australasian Harrier (*Circus aeruginosus*).

The series of pens in this particular row are open on all sides, with a piece of corrugated tin covering about 20% of the roof. Both pens adjacent to the Peregrine pen are

separated from it by chain-link type wire; otherwise there is clear visibility between the pens (see fig. 1). The three chambers with raptors are the same size. The Peregrine pen has two small trees growing at one narrow end opposite the nest box location. A nest box of wood 28 cm by 38 cm by 38 cm is closed, except for the front, on all sides and the top and is placed 1.8 m from the ground against the back wall. The box is at eye level and adjacent to a walkway. On the portion of the pen between the nest and the walk is a series of slatlike branches against the wire to form a screen effect (fig. 1) but with spaces a few mm wide between each slat. These slats were about 2 m high.

The pen containing the Whistling Kites had a perch the same level as the Peregrine nest box and only 1.2 m away. This was a favored perch for one of the kites, and from the perch the kite could look directly in on the incubating Peregrine. The female falcon apparently laid eggs in 1975, as eggshell fragments were found in the pen; subsequently, the nest box was erected. In 1976 the female laid four eggs, three of which hatched, and the two young that survived fledged on 8 November, the day prior to our visit to the zoo. The fledging date is similar to that of the wild population of Victoria. Two young were raised in both 1977 and 1978.

On the occasion of our 1976 visit, we entered the pen to view the adults more closely, and the moment we were fully inside the pen, both adults began to give alarm calls. We moved outside the pen, and, although we were totally visible through the wire, the calls stopped. The falcons clearly knew the boundaries of their "territory," which were the limits of the wire pen. We were at the pen for about 20 minutes, and some ten people passed along the walk less than 0.6–0.9 m from the nest and the recently fledged young. The adults gave no alarm calls at the people, nor did the young move away.

The foregoing facts bring to mind several items worthy of consideration. Both parent birds were adults and were injured when placed in the pen. Because of the injuries they could not get away from people, and we feel that they were "psychologically" committed, as it were, to the fact that people were a regular part of their environment and would not harm them. The continued presence of people passing them was thus of no concern. (Taped or tied outer primaries on some particularly wild females may produce a similar result.) Other falcons capable of flight in large pens, unless relatively tame, never quite seem to adjust as well, and each time a person enters the pen they fly and thus "escape" from the potential danger. The female laid eggs and hatched young in a wooden box placed at eye level and less than 2 m from where perhaps 200 or more people pass on a busy spring day. The incubating female was visible, however, only from the opposite end of the pen, 6.1 m away. In this position she was still somewhat protected by a loose screen of vegetation furnished by the trees.

A kite frequently sat 1.2 m away and looked in on the fully visible incubating female, eliciting no response. Again, however, the kite was on the other side of the wire and was therefore out of the falcons' territory.

These facts taken together tend to modify the speculation that some of the factors conducive to breeding success, such as isolation, height of the nest, and age of falcons when taken, are not altogether essential. Unless this case is the exception, and we do not feel that it is, we suggest that these and other injured adult falcons (notably the one used by Waller [1962] in one of the first recorded incidents of successful captive breeding of Peregrines) adjust "psychologically" to their captivity. Such falcons, having already had experience at breeding, need only to be supplied with compatible mates and the correct physiological timing (photoperiod) to achieve breeding. It is worthy of note that the

only other captive Peregrine breeding record known to us for Australia involved an injured (broken-winged) female found in the wild in immature plumage about three months post-fledging (cf: Robinson 1976).

We realize that this is additional speculation, but we feel the foregoing facts should be taken into consideration when attempting to derive “formulae” necessary to achieve successful breeding in captive Peregrines. Injured adult falcons that have presumably bred in the wild can form valuable breeding stock. Although they may look poorly in pens and take a year or so longer than nestling-taken birds to breed, they may nonetheless do so very readily.

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Figure 1. View showing the general relationship of several pens to each other, the wire, and the walkway. Roy Dunn, left; Steve Jones, right.

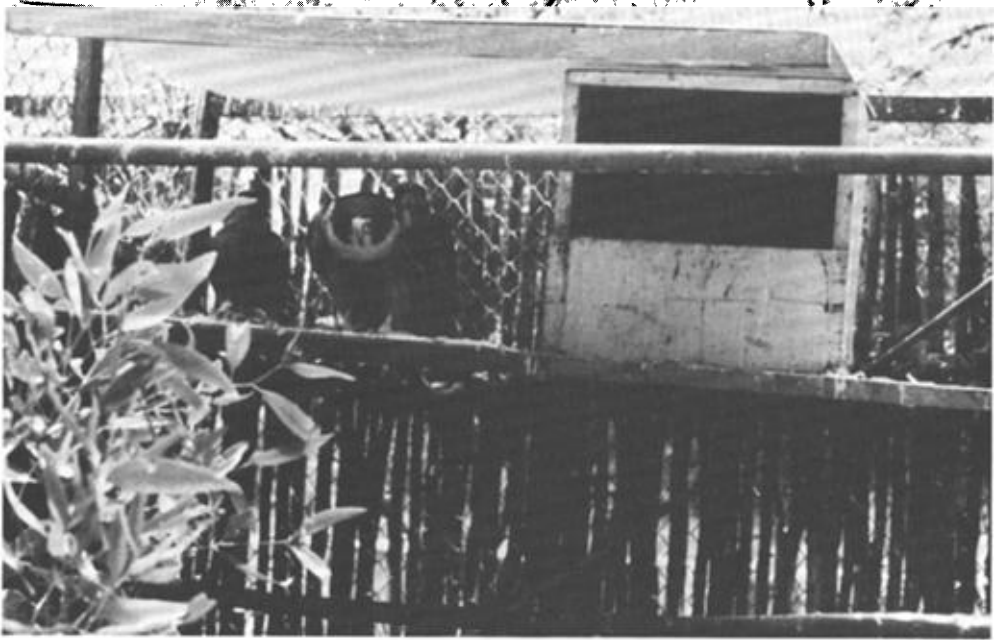


Figure 2. View of adult female (note deformed bill), recently "fledged" young, nesting box, and slatlike branches forming the back wall of the pen. Female and box are at eye level.