

# The memory bird

David Burges

**H**IGH IN the Rocky Mountains of Western USA and Canada grows a tree which typically marks the upper tree line, the Whitebark Pine (*Pinus albicaulis*). The cones which are produced in abundance in the autumn yield tasty, nutritious pine nuts, containing around fifty per cent fat. These are a valuable source of food for animals, such as squirrels and bears, preparing for the approaching harshness of winter. A grizzly bear can put on five pounds a day, just by eating pine nuts.

But these consumers of the Whitebark Pine's largesse do nothing to assist the tree in its need to distribute its seeds to produce new stands of trees. For this role it has to depend on a remarkable bird known as Clark's Nutcracker (*Nucifraga columbiana*).<sup>1</sup> A member of the crow family, it is a large ash-grey bird with black and white wings and tail feathers.

Clark's Nutcracker is perfectly equipped for the task of cracking open pine cones and removing the nuts. Its long, powerful beak forces apart the cones, and it has a special pouch beneath its tongue that can store up to 150 pine nuts, amounting to a fifth of its entire body weight.

The bird then flies as much as fifteen miles away and finds an area with suitable soil. It drills the nuts into the ground to a depth of two to three centimetres in sets of about ten and carefully covers them with a stone to mark the spot. Having



**Whitebark Pine cone in early August, Crater Lake National Park, Oregon.**

Picture: Richard Sniezko, US Forest Service Dorena Genetic Resource Center

buried all of the seeds in its pouch in this way, the bird returns to the tree again and again. Through the few weeks of autumn a single bird can bury up to 30,000 nuts over an area of 100 square miles. This will serve to supply its requirement for food during the long, severe winter of the mountain regions. But the store is more than it will need,

1. Featured in the 'Autumn' section of BBC documentary *Yellowstone*, about the Yellowstone National Park, available on DVD.



**Clark's Nutcracker  
(*Nucifraga columbiana*).**

David Menke, US Fish and Wildlife Service

*The Testimony, May 2009*

**US Forest Service  
photograph of a group  
of Whitebark Pines.**

Picture: Richard Snieszko



as an insurance against theft by other animals such as squirrels.

But the most remarkable aspect of the behaviour of Clark's Nutcracker is its ability to locate the widely distributed stashes of nuts even when hidden beneath the winter snow. Its long-term spatial memory enables it to remember the locations of a staggering seventy per cent of the buried nuts, an extraordinary feat. But that still leaves around 300 out of every 1,000 nuts buried by the bird to germinate the following spring and so ensure the survival of the Whitebark Pine. Both tree and bird thus profit from this remarkable relationship.

The astonishing memory of Clark's Nutcracker makes a marked contrast with that of the ostrich. In the Lord's answer to Job, the ostrich is presented as an example of forgetfulness: ". . . which leaveth her eggs in the earth, and warmeth them in the dust, and forgetteth that the foot may crush them . . . because God hath deprived her

of wisdom, neither hath He imparted to her understanding" (Job 39:14-17). This probably refers to the fact that the females of an ostrich harem lay their eggs in a shallow scrape in the ground; once incubation commences, the dominant female discards excess eggs, leaving about twenty to be hatched.<sup>2</sup>

The obvious conclusion to be drawn is that, just as God, as Creator, has withheld wisdom from the ostrich, so He has endowed Clark's Nutcracker with its extraordinary memory. Interestingly, fledgling nutcrackers follow their parents around for several months in order to learn the complex seed-storage behaviour,<sup>3</sup> demonstrating a blend of 'nature' and 'nurture'. This remarkable bird and its arboreal partner the Whitebark Pine provide just one more example of the unlimited wisdom of God in His creation.

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2. Wikipedia, 'Ostrich', reproduction.

3. Wikipedia, 'Clark's Nutcracker'.