

Hairy Woodpeckers feeding on pine seeds.—While investigating the interrelationships of nuthatches and woodpeckers in a stand of ponderosa pine (*Pinus ponderosa*) I watched Hairy Woodpeckers (*Dendrocopos villosus*) forage on seeds of pine cones. Stomach analyses show that Hairy Woodpeckers do occasionally eat pine seeds (Bent, U. S. Natl. Mus., Bull. 174: 32, 1948), but their method of taking them has never been reported. Their way of foraging on bark arthropods is well documented (Kilham, Wilson Bull., 77: 134–145, 1965; Spring, Condor, 67: 457–488, 1965).

From June of 1964 until June of 1966 I timed the foraging activities of Hairy Woodpeckers in the montane forests of Larimer County, Colorado. Walking at random in the forest until I encountered a woodpecker, if I judged it to be foraging, I timed its stay in specific zones with a stop watch.

In the reproductive season Hairy Woodpeckers foraged extensively by digging bark insects out of dead wood and less frequently by superficial foraging and flaking of bark of live wood (Table 1). A striking change of foraging activity occurred in the nonreproductive season when they foraged extensively on seeds of cones of ponderosa pine. I noted this foraging most often from mid-October through February. The Woodpecker usually braced itself vertically in a cluster of cones and excavated bracts by hammering and pecking vigorously with the bill (Figure 1A). Sometimes it grasped and twisted bracts loose with the bill, then wedged the exposed seeds in the excavated area and cracked them open by pecking before eating the contents. Once I saw a male Hairy Woodpecker excavate a seed from a cone on the ground. He then took the seed to a horizontal branch of the upper crown of a pine where he pecked the shell open before eating the contents.

TABLE 1
PER CENT OF TOTAL TIME HAIRY WOODPECKERS WERE OBSERVED IN VARIOUS ZONES
IN BOTH SEASONS

Location	Season	
	Reproductive June–July	Nonreproductive August–May
Live Pine		
Main stem	9.6 (14) ¹	5.7 (30)
Lateral branches	24.6 (21)	8.4 (21)
Foliage and cones of crown	3.0 (3)	64.5 (45)
Dead Pine		
Main stem	32.3 (6)	3.0 (3)
Lateral branches	0.0 (0)	0.8 (2)
Other		
Live aspen	2.1 (4)	1.8 (7)
Dead aspen	13.9 (13)	6.7 (18)
Live lodgepole pine	0.0 (0)	0.4 (3)
Dead lodgepole pine	0.0 (0)	6.7 (3)
Live Douglas fir	1.5 (1)	0.2 (1)
Stumps and logs	12.5 (10)	1.1 (4)
Ground	0.5 (2)	0.7 (5)
TOTAL	100.0 (74) minutes = 82	100.0 (142) minutes = 260

¹ Number of instances Hairy Woodpeckers were seen in each zone.

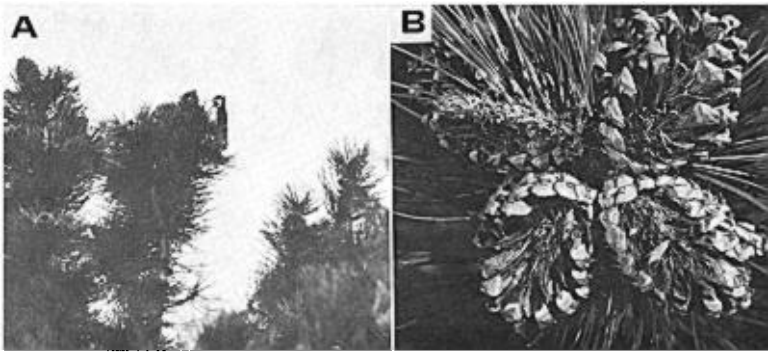


Figure 1. A. Male Hairy Woodpecker perched on cluster of pine cones at top of tree. B. Cluster of pine cones showing area of excavation.

The duration of foraging on cones varied from less than 1 minute up to approximately 25 minutes. The birds excavated only the upper surfaces of cones (Figure 1B) and ate only seeds of the excavated area. At first I thought they used the excavated area as an anvil where they wedged and cracked seeds taken from any part of a cone. Closer scrutiny showed seeds of the unexcavated part intact.

Usually two or three Hairy Woodpeckers foraged in this manner in close proximity but never in the same tree. On 5 February 1965 I saw three females and two males foraging together in an area of about 150 square feet. I estimated that the group spent about 80 per cent of the time foraging on seeds, the remaining 20 per cent flaking bark of live pine main stems and excavating stumps and downed branches.

All woodpeckers that I saw foraging in winter moved slowly through the forest in loose association with mixed flocks of White-breasted Nuthatches (*Sitta carolinensis*), Red-breasted Nuthatches (*S. canadensis*), Pigmy Nuthatches (*S. pygmaea*), Mountain Chickadees (*Parus gambeli*), and Gray-headed Juncos (*Junco caniceps*). All these species appeared to move through the forest in an aggregation that covered an area of approximately 2 or 3 acres. Occasionally different species foraged for seeds in the same trees with Hairy Woodpeckers, but I never observed any of the foraging birds exhibit aggressive behavior. Flocks of Red Crossbills (*Loxia curvirostra*) were seen foraging on seeds occasionally in winter but never in association with these mixed flocks.

The White-headed Woodpecker (*D. albolarvatus*) of North America (Tevis, J. Wildl. Mgmt., 17: 128-131, 1953) and the Great Spotted Woodpecker (*D. major*) of Finland (Pulliainen, Ornith. Fennica, 40: 132-139, 1963) are other members of the genus *Dendrocopos* reported to excavate seeds of pine cones. Pynnönen (Lack, Natural regulation of animal numbers, Oxford Clarendon Press, 1954, PP. 126-127) reports the Great Spotted Woodpecker of Finland consistently changes its foraging from insects in the summer to pine seeds in the winter, but takes seeds in a different manner than the Hairy Woodpecker does. More field work is needed to determine the prevalence and consistency of this behavior in the Hairy Woodpecker.

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