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**FROM THE PRESIDENT**

By Charles A. Hundertmark

In the first number of the 1981 Bulletin (9:1), outgoing President John Hubbard restated his belief, first offered at the 1980 annual meeting, that NMOS must seriously address the question of its future direction. Pursuant to that challenge, which I believe to be timely and valid, I asked the membership at this year's annual meeting to complete a survey indicating the direction NMOS should follow. The membership indicated strong support for continuation of the Society's original commitment to an emphasis on publication and documentation.

Since the annual meeting the board has met twice, May 17 and August 2, to discuss publications as well as several other issues facing the Society. Several actions have grown from those meetings. The board acted to establish a committee to edit the Field Notes, with Roland Goodman as overall editor. The board also elected to expand a draft of a state bird-finding guide offered by Dr. Hubbard, and Dustin Huntington volunteered to assume editorial responsibility for that project. In addition, Dustin assumed responsibility for coordinating an intense area count at the D. H. Lawrence Ranch. Finally, Mary Alice Root has agreed to coordinate planning for the Society's next annual meeting, which will mark our 20th anniversary.

Publication of the Field Notes and Bulletin has been one of the major projects of NMOS through the years. Publication of the Field Notes in particular is a substantial undertaking, the magnitude of which is not fully appreciated until one becomes involved in the editorial task. For many years John Hubbard has performed that substantial task, but at the May 16 board meeting, he indicated his desire to transfer that responsibility. Editing the Field Notes requires a willingness to become familiar with all of the details

of seasonal and geographic distribution of the state's more than 433 species of birds. It also requires the patience to distill the hundreds of individual reports into a succinct manuscript.

To maintain the continuity of the Field Notes in the face of this challenge, Dr. Hubbard has offered to work with an editorial committee during a transitional period of several issues. Each committee member will be asked to become familiar with the status of groups of species in the state. Overall editorial direction of the Field Notes will be assumed by Roland Goodman.

The board also discussed other publication possibilities, including a breeding bird atlas, an analysis of migration data, and a comprehensive work on birds of New Mexico. In our membership survey, the breeding bird atlas was preferred by the membership as a publication priority. However, a number of problems in organizing data efficiently must be solved before this project can be effectively launched. The board will continue to look for avenues to get this project off the ground.

In regard to the bird-finding guide, Dustin Huntington has enlisted several regional experts, who will return their texts in September. The recent contribution of a manuscript by Dale Zimmerman should further strengthen this project, which the Society should be able to publish in a timely way.

Jim Travis, who for many years has managed the Society's collection of migration data, agreed to coordinate an analysis of that information after he has completed other competing obligations.

The Society has also received an unexpected opportunity in a query from Chuck Hunter, a member of the Arizona State University team which recently completed an extensive biological inventory of the lower Pecos Valley. Mr. Hunter has proposed a comprehensive publication on birds of the lower Pecos. This must be considered by the board for a decision, but it appears to be an excellent publication project for the Society.

Discussion of a comprehensive work on birds of New Mexico has been deferred by the board, as completion of the projects discussed above is a logical preliminary to yet broader commitment.

Planning has also begun for an intensive area count during June 1982, and we hope this will be centered on the D. H. Lawrence Ranch near Taos. The purpose of this will be to concentrate many qualified observers to obtain a maximum of qualitative and quantitative data on the local bird population. The ranch should provide an excellent base for coverage of the Sangre de Cristo Mountains, and this should be a quality birding experience, with opportunities for individual and group learning.

Our 20th anniversary meeting will be held in Albuquerque on March 6, 1982. This represents a break from our tradition of alternating meetings between Albuquerque and other cities around the state, but this will resume after the anniversary meeting. Mary Alice will be attempting to contact the Society's founders to invite them to attend this anniversary celebration. She will need help in planning for this occasion, so please help out. Mary Alice can be contacted during the day at 277-3411.

**PREY REMAINS IN PELLETS FROM BURROWING AND BARN OWLS  
IN CENTRAL NEW MEXICO**

By Peter H. Pache

Burrowing Owls (*Athene cunicularia*) and Barn Owls (*Tyto alba*) reside locally in the Albuquerque area, the former mainly in summer and the latter as a permanent resident. In the period March-August 1972, Brother Edwin Mattingly collected a series of pellets--regurgitated remains of the indigestible parts of prey--from Tijeras Arroyo, Bernalillo County, New Mexico. Brother Mattingly kindly made this material available to me for study. It consisted of 917 pellets from a colony of adult and young Burrowing Owls and 41 from three Barn Owls.

#### METHODS

Each pellet was broken by hand and separated into vertebrate and invertebrate remains. The small mammal remains were identified by the use of Hall and Kelson (1959), Hoffmann and Pattie (1968), and Glass (1973). The lizard remains were identified by the presence of lower jaws and small scales; the snake remains were identified by tail portions and large scales. The invertebrate remains were identified by the use of Borrer and White (1970), and by assistance from personnel at the University of New Mexico.

#### RESULTS AND DISCUSSION

The prey remains which were found in the pellets of Burrowing Owls included (1) hair, mandibles, and various other bones of mammals; (2) pedipalps, mandibles, telson segments, assorted body parts of centipedes, scorpions, and solpugids; (3) parts of legs, elytra, occasional wings, heads, and tail segments of insects; and (4) miscellaneous other items (Table 1).

Table 1. Prey remains in 917 Burrowing Owl pellets from central New Mexico.

<u>Prey Remains</u>	No. of Pellet <u>Positive</u>	% of Pellets <u>Positive</u>	Minimum No. <u>Individuals</u>
Vertebrates :			
Pocket mice			
( <i>Perognathus</i> )	284	31.0	344
Kangaroo rats			
( <i>Dipodomys</i> )	39	4.2	39
Deer mice			
( <i>Perornyscus</i> )	23	2.5	23
Grasshopper mice			
( <i>Onychomys</i> )	3	0.3	3
Unidentified mammals	16	1.7	16
Lizard (species)	18	2.0	18
Snake (species)	4	0.4	4
Unidentified birds	1	0.1	1

<u>Prey Remains</u>	<u>No. of Pellet Positive</u>	<u>% of Pellets Positive</u>	<u>Minimum No. Individuals</u>
Invertebrates :			
Chilopoda	56	6.1	78
Crustacea: Isopoda	1	0.1	1
Arachnida: Scorpionida	252	27.5	389
Solpugida	118	12.9	167
Insecta: Coleoptera <sup>1</sup>	610	66.5	2,025
Orthoptera	203	22.1	242
Hemiptera	1	0.1	1

<sup>1</sup> Identifiable families included Cincindelidae, Carabidae, Tenebrionidae, and Chrysomelidae.

The numbers per pellet of individual prey items of invertebrates were highly variable. For example, pellets consisting wholly of invertebrates contained 3-27 individuals of as many as four species. Pellets were also found which contained only individuals of the same taxonomic group (i.e. scorpions, beetles, et cetera). As far as vertebrate prey, I never found the remains of more than one individual per pellet.

Comparisons with other studies indicate that the food items identified in this study are similar to those reported from Burrowing Owls in other parts of their range (Bent, 1938; Ligon, 1961; Errington et al., 1953). Almost all such studies have shown heavy utilization of invertebrates, with vertebrates being taken less frequently. A notable exception was in the case of Maser et al., 1971, who, in a study on seasonal food habits of Burrowing Owls in central Oregon, found that usage of vertebrates and invertebrates was roughly equal. Most studies reveal heavy predation on locally abundant species, demonstrating the highly opportunistic feeding nature of this species.

In terms of individual numbers, invertebrates proved to be the predominate prey items (Table 1). In terms of volume, pocket mice (*Perognathus*), although they were fewer in number, contributed more to this owls diet. Therefore, even though the *Perognathus* were taken less frequently, they were the more important prey item.

The Barn Owl pellet analysis agrees with other studies, showing heavy utilization of small mammals of the species that are locally most prevalent (Table 2). Kangaroo rats (*Dipodomys*) made up a high percentage of this species' diet. Pocket mice were also present in large numbers. Invertebrates were rare, these being restricted to Jerusalem crickets.

I want to thank Dr. John Hubbard and Mr. Charles Hundertmark for their review and constructive criticism of this manuscript. I am also grateful to Brother Mattingly for use of the pellets.

Table 2 Prey remains in 41 Barn Owl pellets from central New Mexico.

<u>Prey Remains</u>	<u>No. of Pellet Positive</u>	<u>% of Pellets Positive</u>	<u>Minimum No. Individuals</u>
Vertebrates:			
Pocket mice ( <i>Perognathus</i> )	30	73.2	83
Kangaroo rats ( <i>Dipodomys</i> )	27	65.8	30
Cottontail ( <i>Sylvilagus</i> )	1	2.4	1
Grasshopper mouse ( <i>Onychomys</i> )	1	2.4	1
Invertebrates:			
Orthoptera: <i>Gryllacrididae</i>	5	12.2	11

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- Pre Remains

THE USAGE OF RANGLE BY BURROWING OWLS

By Peter Pache

Many kinds of birds are known to consume stones and similar material, presumably as an aid to digestive and related processes (Moreau in Thomson, 1964:341-342). In raptors, such material is called "rangle," and its use has long been known in falconry circles (e.g. Latham, 1615). I wish to report the use of rangle by Burrowing Owls (*Athene cunicularia*); this appears to be the first such report for any species of owl.

Latham (1615) reported a captive female Peregrine Falcon (*Falco peregrinus*) swallowing about a dozen stones per day for a month--each time casting them all up the following day. The exact function of these stones is not understood, but it has been hypothesized that they help in shedding the mucous lining and associated materials of the digestive tract--as far down as the ventriculus (gizzard). Fox (1976) reported "some of the mucous is cast up on the stones, and some is loosened and passes through the gut, discoloring the mutes (=droppings) and giving them an oily appearance for a day or two." Stones would seem better suited to loosen mucous than any pellet-forming material, because they are heavier and may grind together more effectively.

The rangle discussed here is from Burrowing Owl pellets that were obtained by Brother Edwin Mattingly from Tijera Arroyo, Bernalillo Co., New Mexico, in 1972 (see preceding paper). Twenty-eight of 917 pellets (3.0%) were found to contain small stones (examples are presented in Figure 1), although not all of the affected pellets containe as many stones. The stones are all similar in size, and they occur throughout the pellets--not just at the surface. Two typical stones measured as follows: length 23 mm, height 14, width 14 and length 19, height 10, width 13.

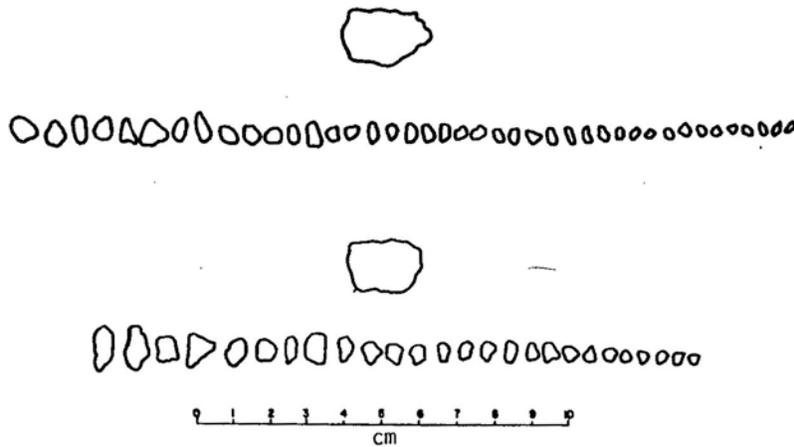


Figure 1. Examples of rangle in pellet castings of Burrowing Owls.

In describing rangle use in New Zealand Falcons (*Falco novaeseelandiae*), Fox (1976) demonstrated a difference in stone selection between males and females, which are markedly dimorphic in size (Brown and Amadon, 1968). I noted no significant difference in rangle among my pellets, which was expected due to the similar size of male and female Burrowing Owls.

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### SPOTTED OWLS IN THE JEMEZ MOUNTAINS

By Terry Johnson

Observations made in the spring of 1980 suggest that the Spotted Owl (*Strix occidentalis*) may be fairly common in the canyons of the southern half of the Jemez Mountains. Calls of this species were heard in four separate locations between mid-March and the beginning of June. Hubbard (1978) states that the species is "rare to uncommon (formerly fairly common) in canyons in forests, pine-oak woodlands, and adjacent riparian (occasional in lower elevation) habitats," and is "most regular and more numerous in the south, but easily overlooked everywhere. It has been reported but not confirmed to breed in the Jemez Mountains, but is not listed for Bandelier National Monument (National Park Service, 1976). Personnel of the Santa Fe National Forest are aware of at least two other sites in the Jemez Mountains where Spotted Owls have been reported, besides the four noted here.

Calls of the owl were heard shortly after dark or late in the night, while this observer was walking or camped. The most common call of this species seems to consist of four notes with a barking quality suggestive of the "Who cooks for you?" call of its close relative, the Barred Owl (*Strix varia*) of northern and eastern woodlands, but with a significant pause before the final note. Three-note variations, omitting the first note, are not uncommon, and others may also occur. A second call, a single prolonged note beginning in a steady whistle of low tone and ending with a markedly rising inflection, has also been heard. This call has been said to be most often given by the female. It has been heard given in answer to the regular hooting call.

Hooting of the Spotted Owl was heard in one location on 16 March 1980 and 23 April 1980; in a second, the night of 3 May 1980; in a third, 4 May 1980; and in a fourth, 2 June 1980. In the last three instances the whistled call was also heard, in sequence and direction indicating that two birds were present, except in the last case, in which the interval between calls did not preclude movement and calling of one bird. Three of these locations are in the nine major canyons from Frijoles to Peralta Canyon, in the area of mesas and canyons on the southeast flank of the Jemez Mountains. In fact, only parts of four of these nine canyons were surveyed at night--and the fourth was not surveyed in its more timbered reaches--so it is conceivable that each major canyon might harbor Spotted Owls.

Canyons where the owls were heard are typically 600 to 800 feet deep with bottom elevations between 6400 and 6900 feet, embracing forests of mainly ponderosa pine (*Pinus ponderosa*) with an admixture of oaks (*Quercus* spp.) and other deciduous trees at the lower extreme to a forest of mixed conifers at the higher elevation, also depending on exposure. In each case a stream was running in the canyon, but these might not be perennial. Outcrops of volcanic Bandelier tuff, which often forms cliffs that are well supplied with potholes, are common to each location, although these might not be of great

extent. Timber covers the canyon bottoms quite uniformly, and generally stands on talus slopes near the base of outcrops. Each occurrence when the whistled call was heard was associated with such an outcrop of tuff, adjacent to timber. Bent (1938) mentions several instances of Spotted Owls nesting in a pothole of a cliff in a canyon, so this might be a preferred nesting situation. The Jemez Mountains as a whole offer many deep, forested canyons with outcrops of rock that provide potholes, and if the Spotted Owl is, as it appears to be, fairly common in these mountains, this might be the reason. Most of this habitat has remained generally undisturbed.

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#### COOPER HAWK ATTACKS BURROWING OWL

By John Hubbard

On September 1980, Gregory Schmitt and I witnessed an adult Cooper Hawk (*Accipiter cooperii*) attack a Burrowing Owl (*Athene cunicularia*). This event occurred on Johnson Mesa, Colfax County, New Mexico. The exact location was on County Road A-35, 7 miles north of New Mexico Rt. 72--at the turnoff to the John F. Doherty Ranch. The time was 10:30 a.m., and the weather was cool and cloudy.

When first observed, the hawk was about 50 feet north of us, moving in rapid, level flight along the top of a shallow arroyo. The direction of flight was approximately east, whereas we were traveling west. We quickly stopped as the bird came even with us, and we observed the hawk Traverse approximately 30 additional feet when it suddenly struck the owl--which we had not previously noticed.

On striking, the hawk flapped its wings briefly and then stood quietly over its prey. There it remained for perhaps 15 seconds, occasionally biting at the prey. We observed for the whole time from our vehicle, and in our binoculars the prey appeared to be brown with barred wings and tail. We surmized that it might be a Burrowing Owl or a female American Kestrel (*Falco sparverius*). Suddenly, the Cooper Hawk released the prey, leaped into the air, and flew away low to the ground. I suspect that our presence disturbed the hawk and frightened it away.

We then got out of the vehicle and ran to the abandoned prey, which indeed was a Burrowing Owl. The owl attempted to escape, but it could not fly or stand. We captured it and placed it in a holding bag, but it soon died. Bloody feathers were evident in the back, but otherwise the owl appeared intact.

An autopsy of the owl revealed it to be a male in good physical condition, weighing 150 g, slightly fat, and just completing the molt. The bird had sustained the following injuries, all apparently inflicted by the hawk:

1. puncture wounds in the left breast;
2. puncture wounds and hematomas in the right scapula and muscle mass of the right humerus;
3. hematomas in the right lung;
4. puncture wounds and hematomas in the left thigh area.

From the wounds, it appeared that the hawk had struck the owl from behind--seizing the right shoulder girdle and pectoral region in the right foot and the left thigh in the left foot. The bleeding in the lungs and possible shock were the probable causes of death, and it is apparent that the hawk would have killed and eaten the owl outright if we had not interfered. This incident bears witness to the predatory ability of the Cooper Hawk, even toward a fellow predator.

### THE OWLS OF COTTONWOOD GULCH AND VICINITY

By Arch McCallum

Cottonwood Gulch (CWG) is located in the Zuni Mountains, McKinley County, at the west end of Bluewater Lake. The following nine species of owls have been recorded in the immediate area, and one other--the Barn Owl (*Tyto alba*)--is expected.

Screech Owl (*Otus asio*). Heard year-round at CWG; also heard at El Morro National Monument (EMNM) in summer 1979 and seen there September 1980.

Flammulated Owl (*Otus flammeolus*). Common at CWG during summer, with birds banded in 1975, 1977, 1978, and a juvenile in 1979. One found dead in Monaghan Canyon, September 1979, and a juvenile seen at EMNM July 1979.

Great Horned Owl (*Bubo virginianus*). Common at CWG year-round, and heard also at Cottonwood Canyon. Permanent resident at EMNM; presumably widespread in the region. Juvenile seen at EMNM in 1978, and at CWG in 1977, 1979, and 1980.

Pygmy Owl (*Glaucidium gnoma*). Heard at EMNM March--August 1978, seen at Kettner Canyon, October 1976, and one 2 miles south of Thoreau, November 1978. These are all the records I know of.

Burrowing Owl (*Athene cunicularia*). The only record in the Zunis is one heard at CWG in the spring of 1980. Family near Thoreau, August 1975.

Spotted Owl (*Strix occidentalis*). Only record is by Jay Schnell in Zuni Canyon in 1949; recorded on the Zuni Reservation in 1981 by John Trochet.

Long-eared Owl (*Asio otus*). Recorded year-round at CWG, with juveniles seen in 1977 and 1970. Adult at EMNM, November 1979, and a juvenile in June 1980.

Short-eared Owl (*Asio flammeolus*). One flushed between CWG and Bluewater Lake in a grassy field, October 1980, for the sole record.

Saw-whet Owl (*Aegolius acadicus*). Heard year-round at CWG, with juveniles seen in 1977 and 1978. Also found nesting near ice caves by J. D. Ligon.

### NOTES AND NEWS

Bird reports for American Birds and N.M.O.S. Field Notes are to be sent to John Hubbard. Report periods are as follows: spring (Mar.-May); summer (Jun.-Jul.), autumn (Aug.-Nov.); winter (Dec.-Feb.). If you want your records considered for publication in American Birds they should be received no more than a month after a period closes. However, it is best to get them in within two weeks, in order for them to be included in the first draft of a seasonal report.

Breeding record cards for 1981 and previous years should be sent in as soon as possible, again to John Hubbard. This is a very important source of data to individuals, agencies, and others. You are urged to submit all records, no matter how commonplace they seem or sketchy they may be. Please use N.M.O.S. cards for your records; these are available from the Secretary.

Revisions to the membership list are as follows (current as of August 27, 1981):

COCHRAN, Carol--1415 Phoenix, N.W., Albuquerque 87107  
EGBERT, John--P. O. Box 7, Cliff 88028  
HALVORSON, Gary L.--6908 Bing Pl., N.E., Albuquerque 87111  
HAYWARD, Bruce-- (renewed)  
HEFLEY, Mr. and Mrs. Harold--(renewed)  
HINK, Valerie--4233 Courtney, N.E., Albuquerque 07100  
JONES, Daniel--Department of Fishery and Wildlife Sciences, Box 4901  
N.M.S.U., Las Cruces 88003  
KARO, James--(renewed)  
LEWIS, W. Burton--(renewed)  
NELSON, Alan P.--(renewed)  
PARRISH, John F.--B.L.M. P. O. Box 1420, Las Cruces 88004  
PRICE, George and Evelyn--503 8th St., N.W., Albuquerque 87102  
RAITT, Dr. Ralph--(renewed)  
ROTHROCK, James S.--2521 Kelton Ave., Los Angeles, CA 90064  
SCHMITT, Greg and Donna--811 Calle Saragosa #5, Santa Fe 87501  
SKAGGS, K. E.--P. O. Box 182, Glenwood 88039  
TROCHET, John, M.D.--c/o Woodside Med. Center, 3201 Del Paseo Boulevard,  
Sacramento, CA 95015  
VILMAR, Joy--804 Maverick Trail, S.E., Albuquerque 87123  
WEST, Mr. and Mrs. Clarence--(renewed)

John Trochet has moved to California (see address above), and we hate to see him go. Thanks to John and Al Schmierer, the Zuni Reservation has become one of the ornithologically best-known areas of central-western New Mexico. The Society is grateful for these efforts.

New Mexico Ornithological Society, Inc.

President:

Charles A. Hundertmark, 223 Morningside, NE Albuquerque, NM 87108

Vice-President:

James R. Travis, 9410 Avenida de la Luna, NE Albuquerque, NM 87111

Secretary:

Sue Huntington, 11 Calle Pueblo Pinado, NW Albuquerque, NM 87120

Treasurer:

Ross L. Teuber, 1612 Kentucky, NE Albuquerque, NM 87110

Directors-at-large:

Dustin Huntington, 11 Calle Pueblo Pinado, NW Albuquerque, NM 87120

Kevin J. Zimmer, Department of Biology NMSU, Box 3AF, Las Cruces, NM 88003

William Stone, 927 Los Lovatos Road Santa Fe, NM 87501

Editor:

John P. Hubbard, 2016 Valle Rio Santa Fe, NM 87501