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Bald Eagle at Rapid City

—Don Polovich, Rapid City Journal

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In This Number . . .

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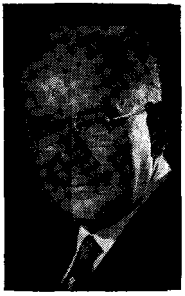
President's Page

THE birds visiting our back yard and neighborhood this winter are the fewest, both in numbers and species, since we broke up the meadow with our basement excavation 15 years ago this spring.

A simple observation, from the simplest of records, such as many of us keep. Of course we have no idea why it is so or if the condition is general or local. We have not made any study of past records to decide if the falloff has been steady or irregular. Thus, what our observation may mean is still unknown. What the future will show of different aspects, in space or time, of our local finding, we have no idea. The condition may be local and present, and so minor, or widespread and long term. Alone, our element view means no more than a single dot in a halftone. With enough other dots we could have a picture of birdlife over the state and beyond. Since birds react swiftly to environment, the result might be a clue to conditions of climate or pollution in distant areas.



It is a basic problem: acutely limited knowledge in a universe of ignorance. We can tolerate our ignorance, as generally we must, for lack of time and facilities that can be brought to bear. But, in this case, we don't have to.

Happily, there is something we can do and now: **Audubon Field Notes**, describes at length in the December issue, with its wide-spread organization, is designed exactly for this sort of problem. Its greatest lack: observers who will report regularly to their regional editors of the birds of their own locality.

With the regional reports from each regional editor before him, the editor of each issue can study the birdlife of the period throughout the United States and Canada. His opening description of trends shown is always intensely interesting, often a revelation of the fluid movements of birdlife, or the cause of unusual ones. He can often point to new mysteries, never imagined before.

As a result, when the issue for the winter season of 1970-71 comes out, we will be able to tell if our local condition was unique and of minor importance, or a part of a larger trend over time or area.

In South Dakota, we are now fortunate in having a sub-regional editor, newly appointed, who will have a closer view of our reports, as she arranges them for her regional editor. Reports should now be sent to our sub-regional editor: Miss Esther Serr, 615 Eighth Street, Rapid City, S. Dak. 57701. For those not now reporting for Field Notes, it will be a help if you list the birds in check-list order; but simple notes, particularly of unusual birds or numbers—or their unusual absence—with dates and any pertinent conditions will be gratefully received. Even when birds appear at usual times and numbers, the data on species and numbers, seasonally reported, are most important, particularly from a new reporting point. Data received are credited to the observer.

And the magazine, the best buy of all time for the bird oriented, is $5 a year, from Audubon Field Notes, 1130 Fifth Ave., New York 10028.—**J. W. Johnson**

Small Mammals from Barn Owl Pellets

Dr. Robert A. Martin

D. G. ADOLPHSON'S studies of a barn owl nest reported in South Dakota Bird Notes (XXI (1): 20-22,) 1969) have provided a vast amount of owl pellets containing remains of small mammals. This nest is located under the Hat Creek bridge on Highway 71, approximately 15 miles south of Hot Springs, Fall River County. Mr. Adolphson kindly donated most of his collections of pellets to me. I have identified the following small mammals which are housed in the mammal collections of the Department of Biology, South Dakota School of Mines and Technology:

Sorex nanus—dwarf shrew

Reithrodontomys sp.—harvest mouse; **Reithrodontomys megalotis** and/ or **Reithrodontomys montanus**

Peromyscus maniculatus—deer mouse

Peromyscus leucopus—white footed mouse

Microtus pennsylvanicus—meadow vole

Pitymys ochrogaster—prairie vole

Perognathus sp.—pocket mouse; **Perognathus fasciatus** and/or **Perognathus flavescens**

Perognathus hispidus—hispid pocket mouse

Dipodomys ordii—Ord's kangaroo rat

Geomys bursarius—plains pocket gopher

The diet of the "Hat Creek" barn owl is primarily composed of prairie voles and hispid pocket mice. Ord's kangaroo rats and white footed and deer mice make up the next greatest proportion of remains. With the exception of the plains pocket gopher and dwarf shrew, which were rare finds, the remaining species were taken with about equal abundance.

A few bird skulls were also recovered, but without comparative material I am unable to identify the remains to species. Anyone interested in studying these skulls is welcome to do so.

Since many bird-watching enthusiasts discover owl or hawk nests it is likely they will also find a number of pellets. Although there are mammalian species unlisted here which are undoubtedly taken by South Dakota raptors (see Discussion) the most common species encountered were captured by the Hat Creek barn owls. Figure 2 illustrates some skulls, mandibles, and dentitions of these mammalian remains, and will aid the amateur in determining to a limited degree the types of mammals he is likely to uncover in pellets of predatory birds in western South Dakota.

The following is a key to the identification of the more common small mammal species. After each species a letter (or letters) is provided which corresponds to an example in Figure 2. The reader will note that in a few instances the key will end with two species. Only a specialist can differentiate the two, and it is not feasible here to provide further information which 1) will not work in all cases and 2) only confuse the reader further.

All skull or mandible (jaw) parts mentioned in the key are illustrated in Figure 1. Dental characteristics are noted in the legend of Figure 2 and further information is provided under Discussion.

1. Skull and jaws massive, large; upper incisors with a double groove; teeth like long flattened pegs without distinct roots . . . **Geomys bursarius**—plains pocket gopher (C, F, I, R).

1'. Skull and jaws not massive, large;

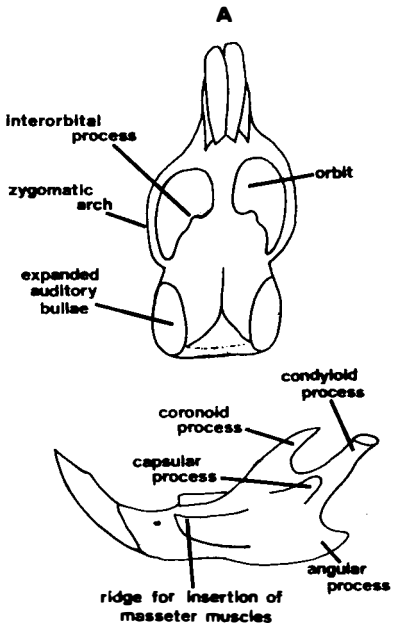


Fig. 1.—Generalized skull, A, and mandible (jaw), B, of a small mammal. Refer to this diagram for illustration of terms used in the key and in Figs. 2 and 3.

* * * *

upper incisors without a double groove; teeth with or without roots . . . 2.

2. Auditory bullae enlarged and visible from top view of skull; upper incisors with a single groove; jaws with large and flaring angular process and highly developed capsular process . . . 3.

2'. Auditory bullae not enlarged and not visible from top view of skull; upper incisors with or without a single groove; jaws without large and flaring angular process and without highly developed capsular process . . . 5.

3. Auditory bullae extremely inflated, bulbous; size large; ridge for insertion of masseter muscle pronounced and running up to and in front of first tooth in lower jaw; teeth like flattened pegs without roots . . . **Dipodomys ordii** —Ord's Kangaroo rat (B, P).

3'. Auditory bullae not extremely inflated, not bulbous; size large or small; ridge for insertion of masseter muscle present but not pronounced, does not run up to and in front of first tooth in lower jaw; teeth complicated, each with at least two halves and with distinct roots . . . 4.

4. Size large . . . **Perognathus hispidus** —hispid pocket mouse (G, H, Q).

4'. Size small . . . **Perognathus fasciatus** and **Perognathus flavescens**—olive-backed and plains pocket mouse.

5. Skull without zygomatic arches; teeth blade-like; jaws tiny, condyloid process sticks almost straight up, angular process a thin rod . . . **Sorex nanus,** the dwarf shrew and **Sorex cinereus,** the masked shrew (E, K, T).

5'. Skull with zygomatic arches; teeth not blade-like, jaws not tiny, condyloid process slants backwards, angular process well developed . . . 6.

6. Skull somewhat massive with projections into orbital area; mandible also somewhat massive with highly developed coronoid process; teeth prismatic, infolded areas filled with cement and without distinct roots . . . 7.

6'. Skull relatively delicate without distinct projections into orbital area; mandible relatively delicate, coronoid process reduced; teeth not prismatic, infolded areas not filled with cement and with distinct roots . . . 8.

7. Triangles 4 and 5 of first lower tooth open, dentine running into both triangles; second upper tooth without extra triangle . . . **Pitymys ochrogaster** —prairie vole (D, L, N).

7'. Triangles 4 and 5 of first lower molar tightly closed, dentine not running into both triangles; second upper tooth with extra triangle . . . **Microtus pennsylvanicus**—meadow vole (D, L, M, O).

8. Upper incisors with single groove;

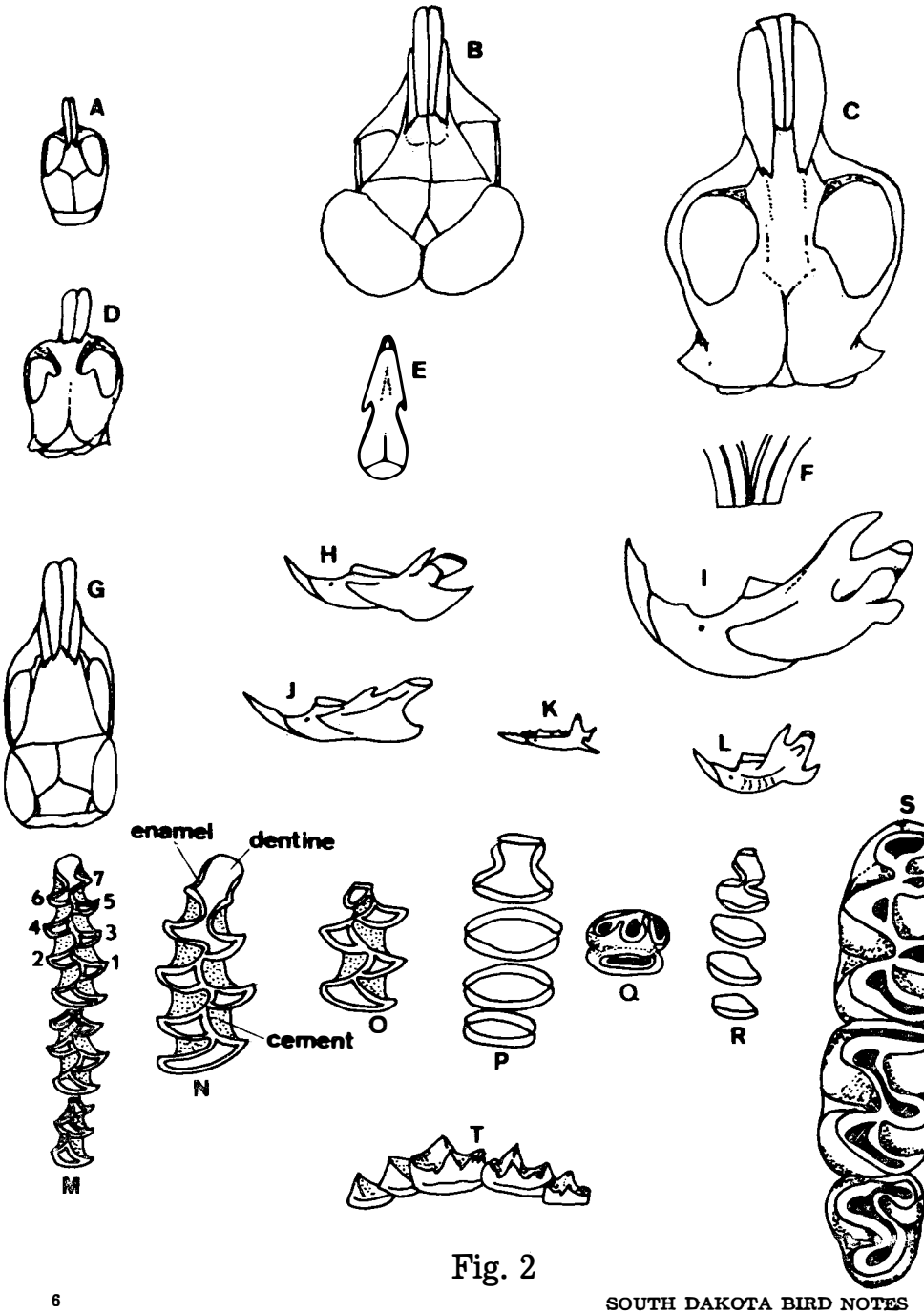


Fig. 2

size of skull and jaws tiny . . . **Reithrodontomys megalotis** and **Reithrodontomys montanus**—western and plains harvest mice (A, J, S).

8'. Upper incisors without grooves; size of skull and jaws small but larger than harvest mice . . . **Peromyscus maniculatus** and **Peromyscus leucopus**—deer and white footed mice (A, J, S).

* * * *

Fig. 2.—Skulls, mandibles, and teeth of some common South Dakota mammals. A, generalized **Peromyscus** or **Reithrodontomys** skull as viewed from above, about ¼ to ⅔ natural size depending upon the species; B, **Dipodomys ordii,** Ord's kangaroo rat, about natural size. Note the huge auditory bullae; C, **Geomys bursarius,** the plains pocket gopher, about natural size. Note the large size and massive features; D, generalized **Microtus** or **Pitymys** skull, about ⅔ natural size. Note the relatively massive features and interorbital projection (process); E, generalized **Sorex** skull, about 1⅓ natural size. Note lack of zygomatic arches, tiny orbital region, and general skull shape; F, **Geomys bursarius,** front view of upper incisors showing double groove on each tooth; G, **Perognathus hispidus,** hispid pocket mouse, about natural size. Note the enlarged but not tremendous auditory bullae; H, generalized **Perognathus** left mandible, outside view, from ⅛ to ⅔ natural size depending upon the species. Note the well developed capsular process, the flaring angular process, and the ridge for the insertion of the masseter muscles which does not curve up and around the front of the first tooth; I, **Geomys bursarius,** left mandible, about natural size. Note the massive features, general curvature, enlarged coronoid process, and reduced angular process; J, generalized **Peromyscus** or **Reithrodontomys** left mandible, about 1⅓ natural size. Note poorly developed coronoid and capsular processes; K, generalized **Sorex** left mandible, about 1⅓ natural size. Note vertical coronoid process, unique condyloid process, and rod-like angular process; L, generalized **Microtus** or **Pitymys** left mandible, about natural size. Note well developed coronoid and angular processes and general shape; M, **Microtus pennsylvanicus,** the meadow vole, lower right teeth viewed from directly above, about 7 times natural size. Numbers correspond to triangles. Note the prismatic pattern and also that dentine does not connect triangles 4 and 5. (see Discussion for further explanation); N, **Pitymys ochrogaster,** the prairie vole, lower left first tooth (molar) viewed from above, about 9 times natural size. Note that dentine tracts connect triangles 4 and 5; O, **Microtus pennsylvanicus,** second upper tooth, about 7 times natural size. Note fourth tiny triangle; P, **Dipodomys ordii,** lower teeth as viewed from above, about 5 times natural size. Note simple nature of last three teeth; Q, **Perognathus hispidus,** lower second tooth (first molar or (M_1), about six times natural size. Note the complex nature of this slightly worn tooth and the cleft which separates it into two parts. As the tooth wears further the complexity will decrease, but the two halves will remain obvious; R, **Geomys bursarius,** lower teeth, about 2⅓ natural size. Note the constriction of enamel in the first tooth (the fourth premolar or P_4) and the lack of enamel on the anterior end of the last three teeth; S, generalized **Peromyscus** or **Reithrodontomys** left lower teeth, about 20 times natural size. Note complex pattern with obvious cusps (protuberances from the crown) and lack of cement. The cross-hatched area is dentine. All else is enamel; T, generalized **Sorex** teeth as viewed partly from the side, about 7 times natural size. Note blade-like cusps of last three teeth.

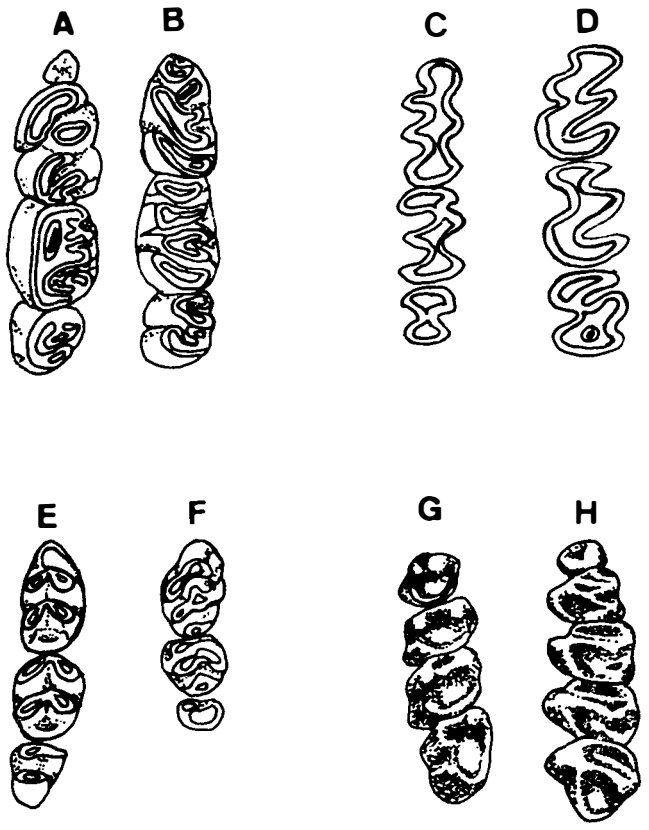


Fig. 3

Fig. 3.—Upper and lower teeth of some small mammals from South Dakota. All teeth illustrated as seen from directly above. Right uppers, A, and right lowers, B, of **Zapus hudsonius,** the jumping mouse, about 12 times natural size. Note the extremely complex and convoluted nature of these teeth; right lowers, C, and left uppers, D, of **Neotoma cinerea,** the wood (pack) rat, about 2 times natural size. This is the only relatively large rodent with prismatic, rooted teeth in South Dakota; right lowers, E, and left uppers, F, of **Mus musculus,** the house mouse, about 10 times natural size; left lowers, G, and left uppers, H, of **Spermophilus tridecemlineatus,** the thirteen-lined ground squirrel (referred to erroneously by most South Dakota natives as "gophers." The true gophers are **Geomys bursarius** and **Thomomys talpoides.**), about 5 times natural size.

* * * *

—DISCUSSION—

Identification of mammalian species from owl pellets is not an easy task, even for the specialist. One is further hampered by the fact that during the processes of digestion and regurgitation skull and jaw materials may be broken up. This is one reason why more than a single characteristic for each species

was included in the key. Yet a few more hints will probably prove valuable. The reader is cautioned to remember one thing: individual variation. Skulls and mandibles of most species may still be identified by the key provided regardless of the age of the animal, but characteristics of the crown patterns of the teeth when observed from above may vary quite drastically from those illustrated in Figure 2 due to differential wear. This is not too important in prairie and meadow vole teeth, but is certainly true for teeth of harvest mice, deer mice, etc., which display patterns as in illustration 5 of Figure 2. Unworn teeth show distinct cusps and the crown is wholly enamel. As the teeth wear more and more dentine is exposed, and eventually the dentine channels connect as the cusps flatten out. Furthermore, in the cases of Ord's kangaroo rat and the hispid pocket mouse, complicated deciduous premolars may remain in place well into adulthood. This is why the second tooth in the series of both was illustrated in Figure 2. However, the best ways to tell these two species apart still are 1) the presence or absence of roots on the teeth and 2) the development of the ridge on the mandible where the masseter muscles attach (insert). Even toothless jaws and skulls of these species may be differentiated easily via these methods. If one has only the anterior portion of a broken skull without teeth, a quick check of the alveoli (the holes in which the teeth are imbedded in the skull) will differentiate the two. In Ord's kangaroo rat there will be four large holes, while in the hispid pocket mouse there will be numerous holes about the size of a pin in diameter. As noted in the key, this is because the teeth of Ord's kangaroo rat lack roots; the entire tooth is effectively an enamel peg surrounding a dentine center. In the hispid pocket mouse (and all other pocket mice) the enamel crown ends at the level of the alveolus, and tiny non-enamel roots brace each tooth in the skull. Thus if one has a relatively large rodent skull with single-grooved upper incisors and tiny multiple alveoli the skull can be referred to **Perognathus hispidus** (other South Dakota pocket mice also demonstrate these traits, but are tiny animals). Do not be dismayed if the skulls lack the zygomatic arches; they are extremely delicate and break off easily.

The roots of the lower teeth in the hispid pocket mouse are larger than the uppers, and are arranged front to back, so the best way to separate mandibles of this mouse from Ord's kangaroo rat is via the ridge for the insertion of the masseter muscles unless one has a mandible with teeth in place. Although teeth of the plains pocket gopher, **Geomys bursarius,** superficially resemble those of Ord's kangaroo rat, the skull and jaws are entirely different.

The term "prismatic" was used in the key to distinguish meadow and prairie vole teeth from those of all other small mammals. This term refers to the convoluted and complex nature of the teeth as can be seen in illustrations M, N, and O of Figure 2. Since teeth of these species also lack roots and the convolutions are filled with cement, from side view the teeth appear quite symmetrical and striated. Refer again to Figure 2. Note that the infolded enamel areas create what appear to be isolated "triangles," and that is what they are referred to and are so numbered as in illustration M. The posterior portion of the lower teeth and anterior portion of the upper teeth are not given numbers. The first triangle after that is numbered. Thus the second tooth of illustration M (the second lower molar, or M_2) has four triangles.

The terms "open" or "closed" refers to whether or not dentine tracts connect triangles. Thus upon close comparison of illustrations M and N of

Figure 2 one can see that where dentine connects triangles 4 and 5 in N, it does not in the first tooth of M. Thus triangles 4 and 5 of the first lower tooth of the meadow vole, **Microtus pennsylvanicus,** are said to be closed, whereas they are open in the first lower tooth of the prairie vole, **Pitymys ochrogaster.** This is the surest way to separate these two species. Triangles 3 and 4 of the second lower tooth (M_2) of the meadow vole also are usually closed, and usually open in the prairie vole, but this is slightly less reliable than the characters of the first tooth. Toothless mandibles are virtually impossible to differentiate.

Skulls of the meadow and prairie vole are almost impossible to tell apart. The only reliable method is to study the second upper tooth, if present. The meadow vole almost always has an extra, small triangle on this tooth which appears as in illustration O of Figure 2. The prairie vole lacks this extra triangle.

Teeth of the harvest mice and their close relatives the deer and white-footed mice are different but not different enough to be recognizable by an amateur. The only sure way to recognize the presence of the harvest mouse is to have at least part of a skull which has single grooved upper incisors and teeth with a dental pattern like S of Figure 2. Remember that the upper incisors of the tiny pocket mice **Perognathus fasciatus** and **Perognathus flavescens** are also single-grooved, so the presence of upper molars is important to tell these species apart. The mandibles of harvest and pocket mice are completely different, so there is no problem there; just follow the key. Skulls with ungrooved upper incisors and upper molars like illustration S may be referred to either of the two species of **Peromyscus.** If skulls of the grasshopper mouse, **Onychomys leucogaster,** happen to be in the collection one will undoubtedly lump these with deer and white-footed mice, but this species is not commonly taken by avian predators and errors in this case will be slight.

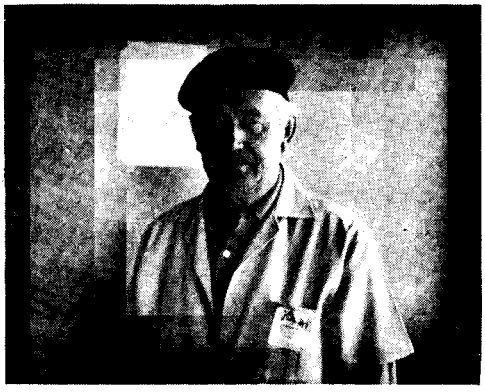
There is another pocket gopher which is common in certain areas of South Dakota; the Northern pocket gopher, **Thomomys talpoides.** Forget about differentiating the two on the basis of lower teeth and jaws; only a specialist can do that. However, the upper incisors of the Northern pocket gopher lack grooves, whereas the upper incisors of the plains pocket gopher have two grooves (F of Figure 2).

Three other rodent species are liable to be encountered: the house mouse, **Mus musculus;** the jumping mouse, **Zapus hudsonius;** and the wood (pack) rat, **Neotoma cinerea.** The teeth of these species are easily recognizable and are illustrated in Figure 3.

Chipmunks and ground squirrels are also eaten by owls and hawks, but rather infrequently. They are not easily separable and have not been included in the key. An example is given in Figure 3.

In closing, I would ask the reader not to be too depressed at the seemingly impossible task of identifying remains of small mammals mentioned here. The majority of the mammals encountered will be those in the key. Utilizing the key, the illustrations, and the above discussion, plus playing around with these remains for a while it will be surprising how quickly the species can be separated. At the very least a person will be able to get a general idea of the diet of the bird being studied.

Comparative material is available in the mammal collections at South Dakota School of Mines and Technology and I will be happy to personally aid anyone in identifications if they feel it is necessary.—**Department of Biology, South Dakota School of Mines and Technology, Rapid City, South Dakota**



In Memoriam

Dr. L. J. Moriarty died Friday evening, March 26, 1971, at Memorial Hospital, Watertown, South Dakota. A member of SDOU since 1951, and a director since 1956, Moriarty served SDOU as treasurer (1956-1962) and president (1962-1964).

Born in 1900, near Redfield, Spink County, he acquired an enduring interest in the fauna of South Dakota, and he pursued this avocational interest throughout his adult life, while in the practice of dentistry at Watertown. An avid outdoorsman, Moriarty traveled extensively in the western states and spent many vacations in the Spearfish area. With retirement in 1965, his travels expanded to worldwide tours, including Africa, Australia, and South America. SDOU members at the Highmore spring meeting will recall their pleasures from his impressive talk and colored slides on his South American adventures. His recent fatal illness forced him to terminate a birding trip in southern Texas.

Always a keen field observer, Moriarty's interests grew to include bird photography, art, and sculpture. He was a reliable contributor to BIRD NOTES, with 48 articles from 1951 to 1968. In this capacity, his distinctive contribution was the series of "Bird Nests of South Dakota," which consisted of detailed nest descriptions for 39 species.

SDOU is indebted to Dr. Moriarty for his long and varied services, including his unheralded financial support. SDOU members will remember him with gratitude and will deeply miss his presence in future meetings and work of the organization.

Reflections on Summer Birds of Harding County

L. M. Baylor and Willard Rosine

AMONG various unfortunate typographical lapses in "Summer Birds of Harding County, South Dakota: 1967-1969" (BIRD NOTES, XXII: 36-48, 57), two erroneous dates must be corrected. In the paragraph on the canvasback (p. 38), the date 6-22-67 should read 7-22-67. In the paragraph on the cedar waxwing (p. 44), the date 6-8-69 should read 6-8-68.

Subsequent to the appearance of the above article, Dr. Paul Springer and Bruce Harris offered critical comments on certain implications in our original report. Their remarks are valuable, for the advancement of knowledge must thrive on critical analysis.

Concerning the Baird's sandpiper, we speculated (p. 40) that the observed individual probably was a non-breeder that did not go north to the arctic breeding area. Springer suggests that this species begins to return in July and that probably the Baird's sandpiper observed in Harding County was a southbound bird rather than a non-breeder which remained in the county for the summer. On reflection we acknowledge the greater likelihood of Springer's interpretation.

Regarding the greater yellowlegs, Springer notes that this species typically breeds in northern wooded muskeg habitat, with a few individuals breeding south to central Manitoba. South bound greater yellowlegs tend to appear in the Dakotas about mid-July. On the basis of our observations, we did not intend to imply that the greater yellowlegs is a breeding species in Harding County, but we inadvertently omitted this species in the list of most likely non-breeding birds (p. 36). We concur with Springer that the yellowlegs we saw very likely were early southbound migrants.

The report on the pectoral sandpiper (p. 40) is the subject of greatest concern. Both Springer and Harris note that this species is another far northern breeder which seldom nests south of Churchill, Manitoba. The pectoral is one of numerous sandpipers that begin to migrate in mid-summer. Further, Springer has observed considerable size variation in adult pectoral sandpipers so that smaller individuals might appear to be juveniles. Thus, a question arises as to the interpretation that our observation represented pectoral sandpipers which probably bred in Harding County.

Although our observation occurred over four years ago, we vividly recall the setting: a small, open marsh by a gravel road. The sandpipers moved in a close group about 10 to 20 yards from us. Our optics included 7x35 binoculars and a 20x spotting scope. We are confident that we saw two adult pectoral sandpipers accompanied by three smaller nondescript birds that we took to be juveniles of this species. In the light of Harris and Springer's serious doubts, however, we agree that the pectoral sandpiper, pending conclusive evidence, should not be accorded the status of a breeding species in Harding County.

When we listed Dr. N. R. Whitney's Harding County observations of species that we had not seen, we included the white-crowned sparrow (p. 57). Springer notes that Whitney's observation was on Sept. 27, 1955, and probably repre-

sented a fall migrant rather than a breeding resident. Again, we must concur with Springer's judgment.

The concentrated efforts of SDOU members and North Dakota guests at the Bison meeting, June 5-7, 1970 (BIRD NOTES, XXII: 68-70), included some intensive field observations in Harding County. As a result, 10 new species were reported—species that were not in our 1967-69 list. In combination the total list of 1967-1970 reported summer species in Harding County now stands at 122.

A summary of the additional species recorded June 5-7, 1970, follows, with comments and comparisons to Visher's 1910-1912 records.

Sharp-shinned Hawk (**Accipiter striatus**). Early June observations in the Slim Buttes, by B. J. Rose, Don Adolphson, and George Jonkel, are particularly meaningful, for Visher recorded the sharp-shinned hawk as only a common migrant after Aug. 22.

Hairy Woodpecker (**Dendrocopos villosus**). Visher noted this species as a rare summer resident in Harding County. Clearly, it is still a rather rare species in this area.

Blue Jay (**Cyanocitta cristata**). Visher did not record this species during his 1910-12 study. However, the species was reported at Reva Gap, Slim Buttes, during the 1970 SDOU meeting.

Red-breasted Nuthatch (**Sitta canadensis**). Visher listed this species as a common summer resident in the pines of the buttes, Apparently this nuthatch is present in far fewer numbers today.

Warbling Vireo (**Vireo gilvus**). B. J. Rose found this species north of Ludlow along the road to North Cave Hills. In Visher's study the warbling vireo was common during the summer in wooded areas. Today, it seems to be much less numerous, despite the existence of scattered but apparently suitable habitat.

American Redstart (**Setophaga ruticilla**). In 1911, Visher found several pairs nesting at the Slim Buttes, and the species was common along the Little Missouri River in September, 1912. We believe the 1970 observation was also in the Slim Buttes.

Western Tanager (**Piranga ludovicina**). Nelda Holden reported this tanager in the Slim Buttes. Visher found this species as an abundant breeder in the Short Pines, June, 1911.

Rose-breasted Grosbeak (**Pheucticus ludovicianus**). One of our North Dakota guests, if memory is correct, reported a rose-breasted grosbeak at Buffalo. Visher did not list the species.

Lazuli bunting (**Passerina amoena**). Dr. Frank Cassel found this species in the Slim Buttes area. Visher recorded the lazuli bunting as a rare breeder in the forested buttes.

McCown's Longspur (**Rhynchophanes mccownii**). Visher judged the McCown's longspur to be the most abundant prairie species in 1910-12. We could not find it in 1967-69. Now, Harris and Springer's observation of a single male, June 7, 1970, near the North Dakota state line, restores the McCown's to a modest contemporary status. Their accomplishment reinforces the hope that in the future a breeding population of McGown's longspurs will be established in Harding County.

COVER PICTURE

Don Polovich, Rapid City Journal photographer, took the picture of the Bald Eagle that wintered in the western part of Rapid City. The eagle stayed near the Meadowbrook Golf Course during January and February, 1971. Bald Eagles are common winter visitors in the Black Hills, but this is the first one to remain for a long period in the city limits.

An Annotated Bibliography of Selected Government Publications on Ornithology

Compiled by Paul T. Culley, Assistant Librarian, South Dakota School of Mines and Technology

THE following is a listing of various publications in the subject area: ornithology. Each report is briefly annotated. These reports were received in 1969 and 1970 by the Devereau Library, South Dakota School of Mines and Technology, Rapid City, South Dakota. The Library is a depository for selected U. S. Government reports. All of the reports are available at the Devereaux Library for perusal. There are several other Libraries within the state that also may have these same documents in their collections.

(1) Bump, Gardiner and Bump, Janet W. A Study of the Spotted Tinamous and the Pale Spotted Tinamous of Argentina. (U.S. Bureau of Sport Fisheries and Wildlife. Special Scientific Report—Wildlife No. 120) Washington, D.C.: Govt. Print. Office, April 1969. 160 p. (I 49.15/3:120).

Modern agricultural practices are putting increasingly heavy pressures on native game birds. The Bureau's search for foreign game birds resulted in this study of tinamous, a group of birds well adapted to the pampas, savannahs and grassy bushlands of Argentina. This report tries to determine whether or not a trial introduction into the United States would be justified.

(2) Ricklefs, Roberts E. An Analysis of Nesting Morality in Birds. (Smithsonian Contributions to Zoology, No. 9) Washington, D.C.: Govt. Print. Office, 1969. 48 p. (SI 1.27:9).

An attempt "to evaluate nesting mortality of birds as a feature of environment and as a selective force in the evolution of reproductive strategies."

(3) Birds Protected by Federal Law. Washington, D.C.: Bureau of Sport Fisheries and Wildlife, for sale by the Govt. Print. Office, May 1969. 4 p. (I 49.13: 486).

An alphabetical listing of birds afforded Federal protection in all areas under U.S. jurisdiction.

(4) Martinson, R. Kahler and others. Waterfowl Status Report, 1969. (U.S. Bureau of Sport Fisheries and Wildlife. Special Scientific Report—Wildlife No. 128. Washington, D.C.: Govt. Print. Office, Dec. 1969 153 p. (I 49.15/3: 128).

"Presents tabulations of the 1969 waterfowl population and habitat surveys and the results of mail surveys of water fowl hunters for the 1968-69 season." Covers all important waterfowl areas in the U.S.

(5) Ruos, James L. and MacDonald, Duncan. Mourning Dove Status Report, 1967. (U.S. Bureau of Sport Fisheries and Wildlife. Special Scientific Report —Wildlife No. 121) Washington, D.C.: Govt. Print. Office, Dec. 1968. 23 p. (I 49.15/3: 121).

Describes methods employed to obtain and analyze dove population data and presents the status of the 1967 mourning dove breeding population.

(6) Duck Stamp Data: Information for Stamp Collectors and Conservationists. (U.S. Bureau of Sport Fisheries and Wildlife. Circular 111) Washington, D.C.: Govt. Print. Office, Revised 1969. 48 p. (I 49.4: 111/5).

Provides information about the Duck Stamp Act and the Duck Stamp which was first issued in 1934. Each year is shown with picture and descriptive data.

(7) Goudy, William H. Woodcock Research and Management Programs,

1967 and 1968. (U.S. Bureau of Sport Fisheries and Wildlife. Special Scientific Report—Wildlife No. 123) Washington, D.C.: Govt. Print. Office, Apr. 1969) 32 p. (I 49.15/3: 123).

"Presents the most recent data on the status of the woodcock population as measured by singing-ground and wing-collection surveys."

(8) Homes for Birds. (U.S. Bureau of Sport Fisheries and Wildlife. Conservation Bulletin 14) Washington, D. C.: Govt. Print. Office, 1969. 18 p. (I 1.72: 14/2).

Discusses bird houses, how to build, how big, where to locate, etc.

(9) Menzie, Calvin M. Metabolism of pesticides. (U.S. Bureau of Sport Fisheries and Wildlife. Special Scientific Report—Wildlife No. 127). Washington, D.C.; Govt. Print. Office, July 1969. 487 p. (I 49.15/3: 127).

Covers primarily the metabolism and decomposition of pesticides. Includes a 121 page bibliography.

(10) Audubon National Wildlife Refuge, North Dakota. (U.S. Bureau of Sport Fisheries and Wildlife. RL-509-52) Washington, D.C.: Govt. Print. Office, Jan. 1969 1 p. (I 49.44: 509/3).

A small brochure with map and descriptive data on the Refuge's history and make-up.

(11) MacDonald, Malcolm E. Annotated Bibliography of Helminths of Waterfowl (Anatidae). (U.S. Bureau of Sport Fisheries and Wildlife. Special Scientific Report—Wildlife No. 125) Washington, D.C.; Govt. Print. Office, June 1969. 333 p. (I 49.15/3: 125).

"An attempt to list all the publications dealing with helminths of waterfowl (Anatidae)." It brings up to date and revises an earlier work published in 1965—Wildlife disease, No. 45.

(12) Robbins, Chandler S. and Van Velzen, Willet T. Breeding Bird Survey: 1967 and 1968. (U.S. Bureau of Sport Fisheries and Wildlife. Special Scientific Report—Wildlife No. 124) Washington, D.C.: Govt. Print. Office, Apr. 1969. 107 p. (I 49.15/3: 124).

Report on the Breeding Bird Survey of North America covering the U.S. and Canada. There were 982 survey routes run in 1967 and 1,174 in 1968.

(13) Morrow, Thomas L. and Glover, Fred A. Experimental Studies on Post-Mortem changes in Mallards. (U.S. Bureau of Sport Fisheries and Wildlife. Special Scientific Report—Wildlife No. 134) Washington, D.C.: Govt. Print. Office, 1970. 24 p. (1 49.15/3:134).

"Post-mortem changes in mallards were studied to develop techniques of estimating time since death in birds killed by hunters." All work was confined to laboratory studies of mallards. Hopefully, the development of reliable methods for estimating the time of death will strengthen the investigative position of game officers and offer valuable courtroom evidence.

(14) Blankenship, Lytle H. and Reeves, Henry M. Mourning dove recoveries from Mexico. (U.S. Bureau of Sport Fisheries and Wildlife. Special Scientific Report—Wildlife No. 135) Washington, D.C.: Govt. Print. Office, July 1970. 25 p. (149.15/3:135).

"Of 37,000 reports of mourning dove band recoveries in the files of the Migratory Bird Populations Station on Oct. 30, 1967, 1,120 came from Mexico . . . Of the banded birds for which 'how obtained' was known, 83.5% were reported as shot (or killed) and only 3.2% reported as captured or trapped . . . Mexico is an important wintering area for mourning doves produced in the United States . . . This report provides preliminary data on mourning doves banded in the United States and recovered in Mexico."

(15) Ruos, James L. Mourning doves status report, 1969. (U.S. Bureau of Sport Fisheries and Wildlife. Special Scientific Report No. 132) Washington,

D.C.: Govt. Print. Office, Apr. 1970. 35 p. (I 49.15/3:132).

"Management of mourning doves in the United States is essentially the regulation of hunting to achieve proper harvest. The Call-Count Survey, conducted annually since 1953 . . . provides population data on which wildlife administrators rely in setting annual regulations. This report describes the methods employed to obtain and analyze those data and presents the status of the 1969 mourning dove breeding population."

"U.S. mourning dove population indexes declined from 1968 to 1969 by 2 percent in the Eastern Management Unit and 8 percent in the Central Management Unit, but remained unchanged in the Western Management Unit . . . For the three units combined, the 1969 index was 5 percent below that for 1968 and 15 percent below the 10 year mean. Regression analyses of the call count data for 1959-69 indicate a statistically significant downward trend in the dove breeding populations in all management units. Mean rates of decline were . . . 3 percent a year for the U.S. dove population as a whole."

(16) Clark, Eldon R. Woodcock status report, 1969. (U.S. Bureau of Sport Fisheries and Wildlife. Special Scientific Report—Wildlife No. 133) Washington, D.C.: Govt. Print. Office, June 1970. 35 p. (I 49.15/3:133).

"This report reviews background material not previously assembled in one report, summarized results of the 1969 singing-ground survey and the 1968-69 wing collection survey, and discusses survey procedures and data analysis."

The 1969 singing-ground survey indicated that the woodcock was increasing throughout its range. Hunters are harvesting the birds at an increasing rate.

"The 1968-69 harvest in the United States approximated 1 million birds."

(17) Banks, Richard C. Birds imported into the United States in 1968. (U.S. Bureau of Sport Fisheries and Wildlife. Special Scientific Report—Wildlife No. 136) Washington, D.C.: Govt. Print. Office, Sept. 1970. 64 p. (I49.15/3:136).

"Foreign wildlife imported into the United States must be reported on standard B.S.F.W. Form 3-177, filed with U.S. Customs. In 1968, more than 10,000 forms were filed reporting more than 490,000 individual birds. This list gives the number of each species of bird that was imported in that year, as tallied from the declarations."

Of these 490,000, 5,500 were game birds, 7,800 were other wild birds and 479,000 were Cage birds.

(18) U.S. Fish and Wildlife Service. Foreign Game Leaflets, No. 1—Washington, D.C.: Govt. Print. Office, June 1970—(149.74: Nos.).

This title is a series of leaflets giving brief description, identification, habitat, climate, food, behavior and general habits, abundance, interbreeding and competition, relation to agriculture, sporting characteristics, introductions and propagation, and a list of references. The following is a listing of birds covered to date: Black Francolins (No. 1), Gray Francolins (No. 2), Redwing Francolins (No. 3), South African Graywing Francolins (No. 4), Black Grouse (No. 5), Red Junglefowls (No. 6), Bearded Partridges (No. 7), Eastern Gray Partridges (No. 8), Manchurian Ring-Necked Pheasant (No. 9), Coturnix or Old World Quails (No. 10), Yellow-Necked Spurfowl (No. 11), Copper Pheasants (No. 12), Green Pheasants (No. 13), Reeves Pheasant (No. 14), South Korean Ring-Necked Pheasant (No. 15).—**Rapid City**

Summer Bird Notes: Cedar Pass, Badlands National Monument

Gerald Tangren

IN THE Cedar Pass area of the Badlands National Monument, bisected by U.S. 16A, visitor orientation facilities contribute to the unusual sandstone formations or badlands and the lower grassland below the badland wall in attracting a wider variety of birds than might be suspected. An excellent description of the region, particularly the badland formations, is contained in the South Dakota chapter of **A Guide to Bird Finding—West of the Mississippi** by Olin S. Pettingill. There will be no attempt here to duplicate his description.

Coming over the Badland wall near the top of the hill overlooking the Cedar Pass area is the Cliff Shelf Nature Trail. This paved trail runs around a a small pond (dry in late summer) and through a juniper woodland and rose and chokecherry thickets. Among the commonly seen birds here are Brown Thrashers, Yellow-breasted Chats, and Rufous-sided Towhees.

Located at Cedar Pass are the National Park Service's visitor's center, a campground, and Cedar Pass Lodge. Cedar Pass Lodge consists of the main building and some cabins behind it. Around the cabins Western Kingbirds nest in Chinese Elms (the kingbirds apparently replaced the Says Phoebe which nested under the cabin eaves when Pettingill described the area) as well as Common Grackles and Orchard Orioles. Mountain Bluebirds still nest under the eaves as do House Sparrows.

Small sewage ponds are located one-quarter mile from the cabins at the end of a road which extends from the back of the cabin area. At one end of the ponds are cottonwoods and cattails. All of the waterbirds and shorebirds as well as a majority of the migrants were found around the ponds.

The following list of 65 birds were seen by me in the Cedar Pass area and were observed between June 17 and Sept. 3, 1970. It should probably be added that locals said that this was a very dry summer.

Abbreviations used in this list are: T—transient, some further comment is made after each transient species on dates and numbers; C—common, seen almost every day; U—uncommon, seen occasionally; R—rare, seen only once or twice, for some birds the use of transient or rare was almost arbitrary.

Eared Grebe. **Podiceps caspicus.** T; 1—Sept. 2.

Mallard. **Anas platyrhynchos.** T; 1 male—June 24.

Blue-winged Teal. **Anas discors.** T; 1 male—June 24. Up to 13 between Aug. 21-30.

Turkey Vulture. **Cathartes aura.** C; There is a large roost in the area.

Red-tailed Hawk. **Buteo jamaicensis.** status uncertain; 1—June 18, 22, and 29 and July 1.

Marsh Hawk. **Circus cyaneus.** U.

Prairie Falcon. **Falco mexicanus.** R; 1—July 15 and 1—Aug. 6.

Sparrow Hawk. **Falco sparverius.** U.

Killdeer. **Charadrius vociferus.** C.

Spotted Sandpiper. **Actitis macularia.** T; 1 to 5 between July 27 and Aug. 30.

Solitary Sandpiper. **Tringa solitaria.** T; 2—Aug. 17-21.

Willet. **Catoptrophorus semipalmatus.** T; 1—Aug. 21.

Greater Yellowlegs. **Totanus melano-**

leucus. T; 1 to 5 between July 30 and Aug. 30.

Lesser Yellowlegs. **Totanus flavipes.** T; several—Aug. 21-30.

Bairds Sandpiper. **Erolia bairdii.** T; common, 6-15 between July 27 and Aug. 30.

Least Sandpiper. **Erolia minutilla.** T; 2—Aug. 18-20 and 3—Sept. 2.

Stilt Sandpiper. **Micropalama himantopus.** T; up to 12—Aug. 21-30.

American Avocet. **Recurvirostra americana.** T; up to 8—Aug. 5-30.

Wilsons Phalarope. **Steganopus tricolor.** T; 1-25 between July 27 and Aug. 30.

Rock Dove. **Columba livia.** C; large flock resident in area.

Mourning Dove. **Zenaidura macroura.** C.

Great Horned Owl. **Bubo virginianus.** R; one heard July 6.

Common Nighthawk. **Chordeiles minor.** C.

White-throated Swift. **Aeronautes saxatalis.** C.

Ruby-throated Hummingbird. **Archilochus colubris.** T; 1 female Aug. 30.

Flicker. **Colaptes** sp. U; No pure individuals seen for certain. Some hybrids were seen.

Eastern Kingbird. **Tyrannus tyrannus.** C.

Western Kingbird. **Tyrannus verticalis.** C; gone from area by the end of July.

Says Phoebe. **Sayornis saya.** U; scarce until late August when small flocks were seen.

Western Wood Pewee. **Contopus cordidulus.** R; 1—June 22 and 1—July 29.

Violet-green Swallow. **Tachycineta thalassina.** 1—Aug. 28.

Rough-winged Swallow. **Stelgidopteryx ruficollis.** T; 25—Aug. 2-13.

Barn Swallow. **Hirundo rustica.** C.

Cliff Swallow. **Petrochelidon pyrrhonota.** C; only a few individuals stayed into August.

Black-billed Magpie. **Pica pica.** U.

Black-capped Chickadee. **Parus atricapillus.** U.

Rock Wren. **Salpinctes obsoletus.** C.

Brown Thrasher. **Toxostoma rufum.** U.

Robin. **Turdus migratorius.** U; not seen after July 15.

Mountain Bluebird. **Sialia currucoides.** C.

Cedar Waxwing. **Bombycilla cedrorum.** R; 2—June 30.

Loggerhead Shrike. **Lanius ludovicianus.** U.

Starling. **Sturnus vulgaris.** R; 1—June 18.

Yellow Warbler. **Dendroica petechia.** T; several the last week of August.

Yellowthroat. **Geothlypis trichas.** T; 1—Aug. 25.

Yellow-breasted Chat. **Icteria virens.** U.

Wilsons Warbler. **Wilsonia pusilla.** T; 1—July 28 and Aug. 22. Probably more common.

American Redstart. **Setophaga ruticilla.** T; 1—Aug. 23.

House Sparrow. **Passer domesticus.** C.

Western Meadowlark. **Sturnella neglecta.** C.

Red-winged Blackbird. **Agelaius phoeniceus.** C.

Orchard Oriole. **Icterus spurius.** C; last July 28.

Baltimore Oriole. **Icterus galbula.** T; 1 female Aug. 27.

Bullocks Oriole. **Icterus bullockii.** T; 1—June 18 and 2—Aug. 28.

Common Grackle. **Quiscalus quiscalus.** C; uncommon after mid-July.

Black-headed Grosbeak. **Pheucticus melanocephalus.** R; 1 male June 22 and 25.

Blue Grosbeak. **Guiraca caerulea.** U.

Lazuli Bunting. **Passerina amoena.** T; 2—Aug. 12 and then 1 to Aug. 30.

American Goldfinch. **Spinus tristis.** T; 1—Aug. 24-30.

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Specific Information Much Needed By Check-List Committee . . . Intensive Field Studies in Local Areas Can Fill Many Gaps

Bruce Harris

THE 1971 breeding season may be the last we will have to fill the many gaps still remaining in the distribution and occurrence of nesting species in South Dakota. Editing of the species accounts will soon begin, and we hope to have the manuscript ready for the printers sometime in 1972. We are convinced that much valuable information can be accumulated during the coming season if intensive field work is conducted in those areas where specific breeding data are missing. All that is needed is for SDOU members to channel their activities towards species and localities that need the most attention. Adequate information is available in the literature (especially in the Bent Life Histories) regarding the habitat frequented by the various species during the breeding season; getting to the **proper habitat** at the right time of day and the right time of year is the key to good field work. Knowing the bird by sight and sound is equally important, of course. A number of significant records are turned up by accident or coincidence, but many, many more result from careful preparation on the part of the observer, always having in mind the possibilities that might exist in a given habitat niche being investigated.

The species listed below are those that will demand special attention and field work. Some are considered rare in South Dakota, but all are known to occur during the breeding season, and there is good reason to believe that they nest in the state.

Horned grebe—Possibly nests in Roberts, Day or Marshall counties.

Least Tern, Common Tern and **Piping Plover**—Occurrence on the Missouri River above Big Bend Dam should be investigated; very likely occurs all the way north to the North Dakota line.

Hooded merganser—We have breeding season records for Day (two years), Sanborn, Brookings, Brown and Marshall counties. Very likely nests; keep in mind that this species (and the Common merganser) do not always nest in tree cavities. An old stump or cavity under a bank are sometimes used for nest sites.

Cinnamon teal—Regularly reported at some west-river locality, especially at LaCreek Refuge, but no nest has been found.

Least Bittern—Quite a few breeding season observations on record, but very few specific nest records.

Common Egret—Known to nest within 35 miles of Big Stone City in Minnesota, and within 75 miles of Sioux City. Look for it in colonies of Great Blue or Black-crowned Night Herons.

Green Heron—Very few nesting records for a species that is rather common.

Woodcock—Probably occurs regularly in Union County, but may also be present at Newton Hills, Hartford Beach and Sieche Hollow. Located just across the line in North Dakota during 1969 breeding season.

Common Snipe—Recent occurrence in Jerauld, Sanborn (mating flight observed), Miner and Marshall counties gives

good reason to believe it nests in the state. Also located just across the North Dakota line from Marshall County. May very well occur far south in such places as LaCreek and Lake Andes. Look for it around sedge bogs.

Cooper's Hawk—Probably regular in Roberts County; reported nesting in Lincoln County in 1968, and very likely occurs along western river drainages where heavy woodland occurs, such as the White, Cheyenne and Bad Rivers, Black Hills and the Northwest Pine Buttes.

Broad-winged Hawk—Probably regular only in Roberts County.

Short-eared Owl—Very few breeding season dates for a bird that is probably widely scattered during the nesting season.

Whip-Poor-Will—Probably regular in Union County; possibly regular north to Newton Hills.

Red-bellied Woodpecker—Only two nestings reported for a bird that is quite common from Brookings and Huron south.

Ruby-throated Hummingbird—Probably regular in Roberts County, but also very likely along the Missouri River and many scattered places where adequate food and habitat is provided, as at Newton Hills, Oakwood Lakes, Hartford Beach, etc. Usually nests along watercourses or lakes.

Brewer's Blackbird—Probably regular in Roberts County, but very likely also in Day, Marshall and Deuel counties.

McCowan's Longspur—Very likely nests in Harding County during good years.

Black-and-White Warbler—Known to occur (probably regular) along the Missouri River at Farm Island and Greenwood. Also found at Sieche Hollow in 1970 and in Sanborn County in 1969. To be found in large trees such as American elm and cottonwood. Call much like Redstart.

Ovenbird—Probably regular along the Missouri River, at least at Farm Island. Also found at Sieche Hollow in 1970, but not common. We have no east-river nesting records.

Sprague's Pipit—May very well nest south and east of Harding County, where only one nest has been discovered; probably fairly common in Harding County.—**Altamont**

Notes from Sparks' Mini-Ranch

FIFTY-THREE years is a long time to be associated with one business, but Herman Chilson, president of the South Dakota Ornithologists Union 1965-1967 and now director and librarian, responsible for mailing out the **South Dakota Bird Notes**, has that distinction.

The Aberdeen News of Feb. 11, 1971 has given Mr. Chilson a four column picture and a three column story, reprinted from the **Reporter and Farmer**, whose publishers in Webster so efficiently print the **Bird Notes.**

The business is the Elevator Store of Webster, started in 1890. C. H. Chilson, father of Herman Chilson, was the first manager and Charles Chilson, son of Herman, is the new manager.

Herman was first associated with the Elevator Store when a boy of 11 or 12 and the article tells of his candling eggs from 7 a.m. to 11 p.m. on Saturdays. I had a few months of egg candling and grading years ago when I worked in a grocery store in Minnesota and I can well sympathize with the 11-year-old boy who spent his Saturdays cooped up in a 5x10 candling room.

Mr. Chilson's name as librarian first appeared in the June 1961 issue of BIRD NOTES, and he has handled distribution and mailing of the magazine since that time, no small job.

He is the author of a number of books and is in demand as a public speaker. I first met him when he was guest speaker at the joint convention of the North and South Dakota library associations in Bismarck, N. Dak. He is a historian of note and we are most fortunate to have him on the SDOU staff.

In an interview with Roger Tory Peterson in the **National Wildlife** of Dec.-Jan. 1970, Mr. Peterson discussed the need of proper legislation to preserve our wildlife and described the ideal legislature as, quote, "a lawyer with a degree in biology, legislation is so important." A difficult man to find, but at least the country is aware of the need of legislation and steps are being taken.

Life for Jan. 22, 1971 has an article by Don Moser entitled, "A Lament for Some Companions of My Youth." The birds he is lamenting are the ibis and the falcon. He states that there is not a single nest site of the peregrine falcon left east of the Mississippi River.

Industry receives a large share of the blame for the reduction of wildlife sanctuaries but the **Ford Times** of December, 1970, in an article entitled, "Florida's Different Wildlife Refuge," by Mike Smith, highlights the Turkey Point Wildlife Sanctuary, 25 miles south of Miami, where a nuclear electric power plant and a wildlife sanctuary share the same area to the benefit of both. The plant, a 1500 acre public recreation area and sanctuary and zoo were dedicated Oct. 27, 1966 and the birds and wildlife accept the power plant as a part of their natural habitat.

When Mr. Allen Morgan, executive vice president of the Massachusetts Audubon Society was interviewed by the **Christian Science Monitor** last December he had much to say about the part the Audubon Society had played in bringing the problems of ecology to the attention of the public. He discussed the importance of birds as being the, quote, "most sensitive and immediate indicators of the general environment. The cliche of the canary in the submarine or in the mine comes out of that. But we were always involved in trying to aid the balance of things. It's

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General Notes of Special Interest

NORTH AMERICAN NEST-RECORD CARD PROGRAM—We are pleased to report at this time that for the next few years, the North American Nest-record Card Program has sufficient funds to carry on its work. In addition to the generous support of Mrs. Bradley Fisk, we have received a three-year grant from the National Science Foundation. This will enable us to continue the transferring of all our nesting data onto IBM cards, and to supply several researchers with data for specific breeding biology. Last fall the Fisk Room was completed and we are now using this new facility which contains five file cabinets containing some 90,000 nest-record cards, and a large wall map showing the location of the Regional Centers.

At this time we would like to urge you—Regional Centers as well as individuals—to return to us any completed nest-record cards that have not been sent to the Laboratory of Ornithology.

We want to express our appreciation to all of you who have cooperated in the Program. Without your help, we could not continue this important research.—**Laboratory of Ornithology, Cornell University**

EDITOR'S NOTE—A Regional Center has been established at Rapid City by the Black Hills Audubon Society. Anyone interested in obtaining nesting records can write to Esther Serr, 615-8th, Rapid City, S. Dak. 57701.

* * * *

BIRD BATHING AT LOW TEMPERATURES—At one time Mr. Johnson suggested sending in questions about birds for a "question and answer" column. Would the following question qualify as one suitable for the purpose?

How can birds survive bathing when the thermometer registers temperatures around zero degrees or below?

The most extreme example that I have noted occurred Jan. 6. The thermometer registered 10 degrees below zero. A starling was in the water pan taking an elaborate splashing bath.

The starlings bathe frequently, and the house sparrows do it occasionally. Our pet magpie is the only other bird, besides the two mentioned, that I have observed bathing when the temperatures are so low—**June Harter, Highmore**

* * * *

LONG-EARED OWL SIGHTED NESTING NEAR BROOKINGS—On April 29, 1970, a Long-eared Owl was sighted on a nest near Brookings. The nest was located in a shelterbelt at the South Dakota State University Cooperative Wildlife Research Unit, one mile north of the city.

Mr. Howard Cady, a graduate student in horticulture, first noticed the bird while measuring trees in the shelterbelt. He contacted me for identification of the owl, and on the following day a fellow graduate student, Dennis Unkenholz, and I photographed the owl and the nestlings. Four nestlings were observed at this time, but a later follow-up was prevented by the female's defense of the nest.—**Douglas C. Harr, Graduate Teaching Assistant, Department of Wildlife and Fisheries Sciences, South Dakota State University**

PINE GROSBEAK AT HIGHMORE—On Nov. 18, 1969, Mr. F. C. Cline saw a bird standing on an icy street in Highmore. It was still there a short time later and he thought it might be injured. He stopped his car, opened the door, picked up the bird and took it to Mrs. Frank Hawkins. I went in to see it after she called to tell me about the bird. Neither of us had ever before seen a bird like it, but we were certain, because of its beak, that it belonged to the grosbeak family. With the aid of "Birds of North America" we decided that it was a female pine grosbeak. The black beak was typical grosbeak size and shape. The bird was the size of a robin and mostly gray in color. It had a muted, golden colored head, golden rump patch, and two white wing bars. Later, when I had the bird at my home, I took four slide pictures of it. The grosbeak's lack of fear was particularly noticeable. There wasn't any struggle when I picked it up and placed it on a towel rack to take its picture. The bird did not appear to be injured so I turned it loose outdoors in the afternoon. I saw it later that day but never saw it again.

Mrs. Hawkins told me that Mrs. Albert Kaye had seen some unusual birds a few days previously. When I asked Mrs. Kaye for information she said there were six of the birds and they were about the size of robins. She described the coloring as gray, except for gold on their heads and white on their wings. They were at a water pan in the yard and viewed from the house without the aid of binoculars.—**June Harter**

* * * *

UNUSUAL BIRD VISITATIONS THIS WINTER—Bird watchers in Spearfish are all observing differences in bird visitations and habits this winter of 1970-71.

Instead of the flocks of juncos which usually visit our feeders, they come in small groups of only seven or eight, or perhaps 10. These groups are composed mostly of the Oregon and the slate-colored juncoes. As soon as mild weather arrives, the juncoes are no longer seen until there is another cold snap or heavy snow cover.

Many watchers say they have seen very few chickadees, but my neighbors, Mr. and Mrs. A. J. Menard have several pairs of chickadees which have been coming to their porch for sunflower seeds several times a day. They believe that among them is the pair which stayed throughout the summer of 1970, and which seemed to be nesting in a heavy spruce thicket in the neighborhood.

That same spruce thicket is shelter for a flock of robins (one observer counted 20 at one time) which may be the same flock which has been seen in other parts of town as well.

It is not uncommon to see an occasional robin or two during the winter here, but this flock is seen every day.

I believe the fact that the past summer was a year for unusually large amounts of fruit has something to do with this. The robins started eating the fruit of the hackberry trees in the lawn of my neighbors as it ripened, and never found reason to stop! These berries always seem to be much relished by the robins, and since there still seems to be an ample supply, we see them often. They also frequent the apple trees in other parts of town, but so far have ignored the berries of the mountain ash which usually are stripped in the fall before the migration. It has been delightful to hear their cheery spring song occasionally on a mild, sunny morning.

We have had visitations of a pair of red-shafted flickers, and downy and hairy woodpeckers, but not in as large numbers as usual. The flocks of pinon jays, cedar waxwings, and evening grosbeaks have been seen once or twice in our neighborhood, but we miss their

usual busy cheerfulness on the winter scene.

A Townsend solitaire has been reported in the north part of town, but we haven't seen one here this winter.

The bluejays are the only common birds which seem as usual, and we do appreciate their bright colors and voices.—**Mrs. Russell E. James, Spearfish**

* * * *

YELLOW-BELLIED SAPSUCKER AGAIN NESTING AT HARTFORD BEACH STATE PARK—During July of 1969, I found an active nest of Yellow-bellied Sapsuckers at Hartford Beach, Big Stone Lake, Roberts County (SDBN's V 23: 68). On June 20, 1970 Paul Springer and I were investigating this nest area and observed a Sapsucker, commenting that it would be especially interesting if the birds were found regularly in this habitat on the Dakota prairies. Returning to the location on July 1, 1970, I easily located a pair of birds with a nest about 13 feet above the ground, in an ash tree not over 50 yards from the site of the 1969 nest, which was also in ash. But unlike the 1969 nest, this one was right over a well-traveled nature trail where it must have had considerable exposure to visitors using the park. As described in the literature, the adult birds were not especially shy about the nest, although the female did not feed the young while under observation for a 20-minute period. But the male made two trips to feed the young while I watched, getting food from a live Basswood tree in the vicinity. He did quite a bit of "mewing" while moving about, apparently not very disturbed by my presence. Both adults came to the nest tree after I moved back about 75 yards.

—Bruce Harris, Altamont

Sparks' Mini-Ranch

(Continued from Page 21)

comforting that people have caught up."

He also suggests that pollution should be priced according to the cost of repairing the damage it causes and that from now on there should be no options for mistakes, that bfore an industry is allowed to start operating its effect on its environment should be known.

Snow and more snow in the high country. It comes down gently, day after day, occasionally settling on a sunny day but always maintaining its knee high drifts. Of some comfort is the quote, "If winter comes can spring be far behind?"

That's "30" for now.

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Summer Birds - Cedar Pass

(Continued from Page 18)

Rufous-sided Towhee. **Pipilo erythrophthalmus.** C.

Lark Bunting. **Calamospiza melanocorys.** R; 1—June 24 and 2 Aug. 12.

Savannah Sparrow. **Passerculus sandwichensis.** T; 1 or 2 off and on Aug. 11-30.

Lark Sparrow. **Chondestes grammacus.** C.

Chipping Sparrow. **Spizella passerina.** T; 3—Aug. 18.

Clay-colored Sparrow. **Spizella pallida.** T; 2—Aug. 25. NOTE: Five **Spizella** sparrows Aug. 18 with other unidentified **Spizella** seen off and on to Aug. 30 with perhaps a Field Sparrow (**Spizella pusilla**) on Aug. 18.

Song Sparrow. **Melospiza melodia.** T; 2—Aug. 21 and 1 to Aug. 30.—**Davis, California**

Book Review

J. W. Johnson

AN Eagle in the Sky by Frances Hamerstrom, illustrated by Deann De La Ronde. Iowa State University Press, Ames, Ia. 1970. 6¼x9¼ in., xxii + 144 pages. Illustrated with photographs and drawings. $4.95.

"Some individuals have an emotion far stronger than affection for an eagle. This type of relationship permeates one's being; one's life is colored by the eagle . . . ", says the author and proceeds to show you how it is in this jewel of a book.

Frances Hamerstrom is a wildlife biologist with the Wisconsin Department of Natural Resources and her special interest will be no mystery to anyone reading her story here. She makes us more than ever unwilling to accept the preposterous situation in which it is legal to shoot or poison eagles—but not to keep them alive.

The first part of the book is concerned with Mrs. Hamerstrom's adventure, learning, and failures in trying to induce golden eagles to breed in captivity. It must be nearly a first for her when her female golden eagle, Chrys (Greek for Gold) allowed Frances to help her build a nest. Admittedly both were beginners. And Frances was not too smart about learning. But Chrys was patient—up to a point—and eventually this slow learner began to catch on. Even got to be a good hand around a nest. Perhaps too good to be replaced by the tiercel she tried to get Chrys to accept as a mate. Chrys not only would have nothing to do with him but watched for a chance to take him apart.

Mrs. Hamerstrom's further adventures in learning artificial insemination of eagles is also exciting as described in her straightforward and simple language. No less so is the story of their long waiting periods, while Chrys and Frances—the last with the aid of a small incubator—take turns incubating the eggs. One regrets their tragic lack of success, hopes that now enough has been learned for better results next time.

The last part of the book is an account of another young golden eagle, Nancy, their learning to hunt together as good companions. Until Nancy became an adult, able to make her own way in the wild—and had to be released to satisfy the law. Then came the search for an area as safe as could be found for an eagle, a much too trusting one, to be released, and their final good-by in a mountain valley of Wyoming.

And then the wonder. about how soon the poison and/or guns will find her there.

* * * *

Food Preferences of Feeder Birds

New Hampshire Audubon News, January 1971

Species	Feeding Place	Staple Food	Other Food
Sparrows: fox, song, tree, white-throated; junco; bob-white; mourning dove; pheasant; towhee	on or close to the ground	millet, cracked corn, small seed	chick feed
goldfinch, redpoll, pine siskin	most anywhere, on or off ground	thistle (niger)	some also eat millet and hemp
purple finch, evening grosbeak	platform or hanging tray, 4 ft. or more above ground	sunflower seed	purple finch also eats thistle
chickadee, nuthatches: white-breasted, red-breasted; tufted titmouse	strong preference for raised and hanging-stick feeders	sunflower seed and suet	peanut hearts and butter, hemp, doughnuts
woodpeckers: downy, hairy	hanging stick and suet cage	suet	peanut hearts and butter
cardinal	ground	sunflower seed	peanut hearts
Carolina wren	preferably above the ground	suet, peanut butter	chopped apples and bananas
catbird	above the ground	raisins	may eat peanut butter or even doughnuts
mockingbird	preferably above the ground	suet, raisins	chopped apples and bananas, nutmeats, doughnuts
oriole	above the ground	sugar or honey-water in red containers chopped fruit	peanut butter, suet
rose-breasted grosbeak	above the ground	sunflower seed	
blue jay	anywhere	everything except suet	
cowbirds	on the ground	small seed	
red-winged blackbirds	on or above the ground	small seed	
starlings	anywhere	everything except sunflower seed	
house sparrows	anywhere	everything except suet	
pigeons	on the ground	small seed	

Book Review

J. W. Johnson

ORNITHOLOGY in Laboratory and Field, Fourth Edition. By Olin Sewall Pettingill, Jr. Burgess Publishing Company, Minneapolis, 1970. 7½ x 10 in., xvii + 524 pp. Coated paper, strongly bound in dark blue cloth. Well illustrated with drawings by Walter J. Breckenridge, who also did the cover design. Numerous maps and plates often adapted from various sources. all meticulously acknowledged. A frontispiece in color by Rudolf Freund, courtesy of Carnegie Museum, depicts the Archaeopteryx in action. $11.95.

A reasonably adequate review of this work would be a formidable undertaking for one far better prepared than I. But it has been the standard companion of students of ornithology to the university level, in its various editions, since 1939. Such history removes most of the concern for judging it. The present edition follows much the same general scheme as the second (1946) which I have before me for comparison.

The new work has been elaborated and expanded in accordance with the information explosion that had, in Pettingill's words left even the third edition of 1956 "so far behind the times . . . I was frankly embarrassed to have my classes use it."

But the increase in information has also made necessary the author's "arbitrary selection of those important aspects of ornithology that can be studied during a semester course or summer session of the academic year. There is much more subject matter than can be studied in any one course; the instructor must make his own selection of topics."

However, as pointed out in the Preface, "extensive material for informational reading (has been added) possibly enough to supplant the need for an additional textbook."

The subject matter is divided into 20 sections with only moderate changes from earlier editions but is given in much more detail. All but the last, Ancestry, Evolution, and Decrease of Birds, include suggestions for study. Suitable tabular forms for recording data collected are shown as required. Extensive lists of references end each section.

A few section headings are: Birds and Ornithology: an Introduction; Topography; Feathers and Feather Tracts; Anatomy and Physiology; Systemics; Laboratory Identification; Distribution; Field identification; Behavior; Migration; Territory; Song; Young and their Development; Longevity, Numbers, and Populations.

Nine appendices give: Ornithological Methods, Preparation of a Paper, Bibliographies Pertaining to Ornithology and Bibliographies Pertaining to Life History Studies, Regional Works, General information and Recreational Reading, Ornithological Journals, Clutch Sizes, Incubation Periods, and Age at Fledging, and a Review of Ectoparasites of Birds.

An index makes the material of the book quickly available.

In addition to its assured value as a study manual in formal study, I see this book also as a welcome and convenient general reference on the subject and a sound aid in individual study, where serious blanks in information are an ever present hazard.—**Huron**

Spring Meeting at Aberdeen

NORTHERN STATE COLLEGE

May 21, 22 and 23, 1971

FRIDAY, MAY 21

7:00-9:30 p.m.—Registration and social time, library lobby

SATURDAY, MAY 22

All-day field trips on your own in Brown County—along the James River and the Sand Lake Wildlife Refuge
8:00-10:00 a.m.—Late registration, library lobby
6:00 p.m.—Banquet - $2.50 per person, at the Rushmore Room, Student Union
8:00 p.m.—Program at Student Union Ballroom

SUNDAY, MAY 23

Morning Field Trips
12:00 Noon—Lunch. Check-List Call-off. Hit the trail for home

—ACCOMMODATIONS—

East on Sixth Avenue:

Holiday Inn	$12.00-$17.00
Pheasant Motel	$7.00-$12.00
River View Motel	$8.00-$14.00
Avalon Motel	$7.00-$15.00

West on Sixth Avenue:

Lighting Motel	$7.00-$16.00
Breeze-Inn Motel	$10.00-$18.00
Sundown Motel	$10.00-$14.00

—CAMPING—

Limited camping facilities at Sand Lake Wildlife Refuge