

bore no fat. The stomachs contained small, black insects. Several rectrices of one were in sheaths. On December 30, 1961, King again observed three on Nam-san in the same type of vegetation although at an elevation approximately 200 feet lower. Further, frequent visits to the area during the rest of the winter and the ensuing spring failed to find the species. However, on October 28, 1962, King again observed three on Nam-san and collected two. These weighed 19 and 19.5 grams, respectively. One bore a slight amount of fat. The stomach of one contained small berries; the stomach of the other, small seeds. The sex of one was not determined; the other was a female with inactive gonads. As on December 9, 1961, their loud "chatter" betrayed their presence. The unsexed specimen is in the collection of Keisuke Kobayashi of Kobe, Japan.

Although Austin (1948:238) quotes Kuroda (1918:533) as calling the Japanese Wagtail (*Motacilla grandis*) "one of the rarest birds in Korea" and lists only three known specimens, the senior author has encountered it upon five different occasions during his residence in the country, and he has collected a total of four specimens, one each from the provinces of Chungchong Namdo, Kyongsang Namdo, Kyongsang Pukto, and Kyonggi-do. All were observed and/or taken in the months of February, March and October. In addition, King observed it five different times in Kyonggi-do in the period from December 17, 1961, through February 22, 1962, and collected a total of five specimens. Thus, it appears that the species occurs much more frequently in Korea as a winter visitor and transient than originally supposed.

Although records of the senior author, maintained during the past ten years, indicate that the Gray Wagtail (*Motacilla cinerea*) occurs regularly throughout South Korea from the latter part of March through early November and, according to Austin (Bull. Mus. Comp. Zool., 109, 1953:568) winters throughout Japan, south of Hokkaido, apparently, it has not been recorded previously in Korea during the winter. In the period from December 13, 1961, through January 17, 1962, King observed a total of six along the edge of a small, rocky stream on the lower, southern slopes of Nam-san near Seoul, at an elevation of approximately 600 feet. Two were observed on the last day of the period mentioned; all others observed were single, solitary individuals. A total of four was collected. One was a female. The sex of the others was not determined. All appeared to be of the race *robusta*. The stomachs of all contained small, black insects.

Gratitude is expressed to the staff of the Museum of Vertebrate Zoology for assistance in the identification of specimens taken. Appreciation, also, is expressed for the specimen of the Bittern donated by Anthony A. Greco and for a single specimen of the Long-billed Plover donated by Frank Kuhlman. All specimens were prepared by the senior author and unless otherwise noted are deposited in the Museum of Vertebrate Zoology.—CHESTER M. FENNEL and BEN F. KING, *Seoul, Korea, July 29, 1962.*

**Status of the Roadrunner in Missouri.**—Until recently the presence of the Roadrunner (*Geococcyx californianus*) had not been demonstrated as far east as Missouri. However, on July 16, 1962, the author collected an adult male near the town of Mano in Barry County which lies in the southwestern part of the state. This validates a number of previous sightings of the Roadrunner (table 1) by amateur ornithologists and other interested persons dating from 1956 when the bird was first seen in Missouri.

The Roadrunner ranges widely over much of the arid Southwest of North America, usually being associated with chaparral, and it is frequently termed the "chaparral cock." It is somewhat surprising therefore to discover that this bird has recently extended its range into a large area of southwestern Missouri which is not generally considered to be an arid area. That this is an actual range extension is substantiated by the observation that farmers and other natives of the region report seeing such a bird only in recent years.

The specimen of the Roadrunner collected by the author was taken in a remote area characterized by a "cedar glade" type of vegetation. As far as can be determined, all sightings summarized in table 1 were made in or near cedar glade areas. This habitat is not typical of most of Missouri and is characterized by a shallow soil and a rocky terrain strewn with boulders. Red juniper (*Juniperus virginiana*), woody shrubs, and tall grass prairie plants are the dominant forms of vegetation (Kucera, Ecology, 38, 1957:285-291). A plotting of Roadrunner sightings in Missouri as in figure 1 reveals that it has been reported only from the glade region of the state. This habitat is more arid than the exten-

TABLE 1

CHRONOLOGICAL SUMMARY OF REPORTS OF THE ROADRUNNER IN MISSOURI

Source	Date	County	Location
L. N. Brown, <i>The Bluebird</i> , 23:7	June 19, 1956	Taney	North of Branson
E. Comfort, <i>The Bluebird</i> , 24:2	(Fall?), 1956	Taney	Near Forsyth
K. Fraser, <i>Aud. Field Notes</i> , 12:416	(?), 1958	Stone	Near Crane
J. V. Frye (personal comm.)	July, 1958	Barry	Southwest of Eagle Rock
D. Henning (personal comm.)	August, 1958	Stone	Northwest of Lampe
M. L. Lee (personal comm.)	June 1, 1960	McDonald	East of Mountain
H. Kissel (personal comm.)	(?), 1961	Taney	Near Cedar Creek
F. E. McCaslin (personal comm.)	April, 1962	Taney	Southeast of Hollister
S. Miller (personal comm.)	April, 1962	Taney	West of Hollister
L. O. Williamson (personal comm.)	July 14, 1962	Barry	Near Shell Knob
L. N. Brown (unpublished)	July 16, 1962	Barry	North of Mano
L. Meadows (personal comm.)	July 25, 1962	Barry	Near Mineral Springs

sive oak-hickory climax forest covering most of the Ozark Mountains. The dolomite ledges and boulders characteristic of the glades are very rich in arthropod and reptilian species which can serve as a food source for the Roadrunner.

As early as 1956 the Roadrunner was recorded in northeastern Oklahoma at Bartlesville which is about 90 miles west of the nearest Missouri sighting (Baumgartner, *Aud. Field Notes*, 10:393). James (personal communication) reports that it is numerous (and has been for several years) in the region of Fayetteville and Rogers, Arkansas, which is only 15 to 20 miles from where it has been recorded in Missouri. Large areas of western Arkansas and eastern Oklahoma resemble southwestern Missouri in possessing "gladey" regions. It seems probable that the Roadrunner has been able to extend its range eastward to Missouri in recent times due to the presence of a suitable arid habitat, that is, the cedar glades. The phenomenon triggering the expansion of the bird's range into previously unoccupied territory remains unexplained, but a long-term climatic change (warming trend) or recent droughts could be involved.

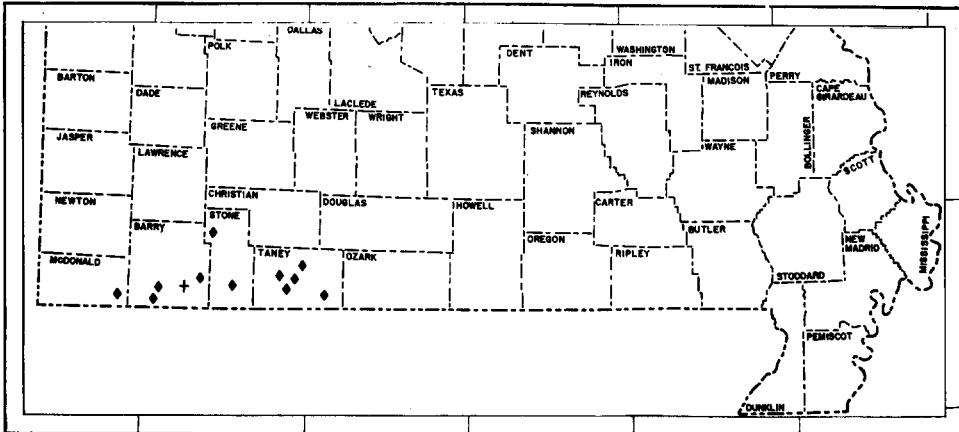


Fig. 1. Distribution of Roadrunner sightings (diamonds) and one collected specimen (cross) in Missouri.

Histological examination of the testes of the specimen collected established it as an adult since sperm are present in the seminiferous tubules. The bird was noted to be rather heavily parasitized by several hundred nymphal lone-star ticks (*Amblyomma americana*; identified by C. W. Wingo). Food analysis of the gizzard contents revealed a five-line skink, numerous grasshoppers, an annual cicada, June beetle, wolf spider, grass, and other unidentified arthropods.—LARRY N. BROWN, *Department of Zoology, University of Missouri, Columbia, Missouri, August 15, 1962.*