Nice. A fuller account of this nest, on which observations are continuing, will be published elsewhere in due course.—J. M. WINTERBOTTOM, *P.O. Box 1616, Cape Town, South Africa, November 30, 1954.*

An extension of the breeding range of the Killdeer in Florida.— Sprunt (1954. "Florida Bird Life.") reported the southernmost breeding station of the Killdeer (*Charadrius vociferus*) as being at Fort Myers, on the west coast of Florida.

On June 3, 1954, a Killdeer was collected by the author three miles northwest of Corkscrew, Collier County, Florida. Upon examination, this bird proved to be an adult female. The dilated condition of the cloaca and genital tract indicated recent egg laying. This specimen, now in the collection of the Florida State Museum, represents the southernmost breeding record of the Killdeer in Florida.

Since Howell (1932. "Florida Bird Life.") reported the southernmost breeding record of the Killdeer in Florida at Lake Istokpoga, both Stevenson (1939. *Wilson Bull.*, 51:85) and Sprunt (1949. *Auk*, 66:202) have extended its known range. The present specimen, taken some 60 miles south of Lake Istokpoga, is a third extension to the range of the Killdeer in recent years. These records suggest that this bird has not been merely overlooked in this region but that the species actually is increasing its breeding range to the southward. This view is substantiated by the fact that I have observed an increase in the number of breeding killdeers in the Fort Myers area in recent years. The current logging and cutting back of the Big Cypress Swamp may also open up new potential breeding sites for the Killdeer and permit further range extension southward.—FRED D. BARTLESON, JR., *Department of Biology, University of Florida, Gainesville, Florida, December 23, 1954.*

Notes on the myology of the Great Curassow.— Through the kindness of Drs. Leonard W. Wing and Josselyn Van Tyne, I was permitted some time ago to dissect a fresh specimen of the Great Curassow (*Crax rubra*). This bird, from San Luis Potosi, Mexico, was raised as a pet by Dr. Wing from June, 1951, until it died in late September, 1953. Since little is known about the internal anatomy of the Cracidae, and apparently nothing about *Crax rubra*, the following notes seem worthy of record.

Mm. tensores patagii longus et brevis are poorly developed, consisting of a single sheet-like belly with an over-all length of 85 mm. The insertion of the tendon of M. tensor patagii brevis is simple, attaching primarily to the surface of *M. extensor metacarpi radialis*, but it also fuses with the antibrachial fascia.

M. supracoracoideus is composed of two distinct and completely separate bellies and tendons of insertion. The more superficial belly is typical in origin and in the course of its tendon dorsolaterad through the triosseal canal. The tendon inserts on the humerus *15 mm. distal to* the junction of the humeral head and the deltoid crest. The deeper belly arises exclusively from the coracoclavicular membrane. Its tendon also passes through the triosseal canal to insert primarily at the base of the deltoid crest and its junction with the humeral head, but a smaller tendon inserts between this tendon and the tendon of the more superficial belly. Gadow and Selenka (1891. "Vögel." Bronn's Klassen und Ord. des Thier-Reichs, p. 248) say that M. supracoracoideus is bipartite in the "Rasores" and in *Tinamus* and that the tendons of both parts remain separated, but they say nothing about the insertion.

M. entepicondylo-ulnaris (="the gallinaceous muscle") is a triangular-shaped muscle, arising tendinous from the humerus in common with Mm. flexor digitorum sublimus and

pronator longus. It inserts by fleshy fibers on the proximal end of the ulna, posterior to the insertion of M. brachialis and anterior to the aponeurotic sheet which, in this species, forms most of M. flexor digitorum sublimus.

M. subcoracoideus arises by two heads. The larger head arises from the sternocoracoidal process of the coracoid and from the coracoclavicular membrane. A much smaller head arises from the medial surface of the acromion process of the scapula.

M. deltoideus major is poorly developed. It arises by a single head from the lateral surface of the scapula. There seems to be no os humeroscapulare.

M. pronator longus is actually a little shorter than *M. pronator brevis* (belly-length, 85 mm.), so that these two muscles extend about the same distance distad on the radius.

M. flexor digitorum sublimus has a typical origin from the humerus, but proximally the belly is rudimentary. From the origin, a flat, aponeurotic sheet extends the entire length of the ulna, attaches to the fascia surrounding the bases of the secondaries, and, distally, narrows to a tendon which inserts on the ulnare. On the ventral edge of this aponeurosis, a fusiform fleshy belly (45 mm. long) arises distally. Its tendon inserts on the base of the proximal phalanx of digit II.

M. extensor metacarpi radialis has a typical origin and belly, but distally its tendon fuses with the tendon of *M. extensor pollicis longus* (a well-developed muscle whose belly is 105 mm. long). The two tendons insert together.

M. abductor pollicis arises both by a strong tendon and by fleshy fibers from the tendon of *M. extensor metacarpi radialis* and also arises by a separate fleshy head from the distal surface of the extensor process of the carpometacarpus. The latter head inserts by fleshy fibers on nearly the entire length of the pollex. The more proximal head inserts through a tendinous sheet of fascia on the distal quarter of the pollex.

The following wing muscles are absent: Flexor metacarpi brevis, Flexor pollicis, Abductor indicis brevis, Proscapulohumeralis brevis.

The muscle formula of the thigh is ABCDXYAmV. As might be expected, many of the tendons are calcified.

M. piriformis pars caudofemoralis is very poorly developed. It consists of a spindle-shaped strap of muscle (belly about 90 mm. long, but only 7 mm. at maximum width), which arises and inserts by thin tendons. It arises from the dense fascia covering the depressor muscles of the tail; there seems to be no attachment to the pygostyle.

M. piriformis pars iliofemoralis is also poorly developed as compared to other birds I have dissected. It is a thin sheet of muscle arising from the ventral surface of the projecting posterior iliac crest. It inserts by fleshy fibers over a distance of 10 mm., beginning 30 mm. inferior to the proximal end of the femur.

M. iliotrochantericus medius is present but is quite small; it inserts distal to the insertion of *M. iliotrochantericus posticus.*

M. gluteus medius et minimus (almost rudimentary) is mostly semitendinous; its insertion is typical.

M. iliotibialis arises from the ilium, anteriorly by an aponeurosis and posteriorly by fleshy fibers. It is aponeurotic in the distal two-thirds of its central portion, as in *Coua caerulea.*

M. iliacus is well-developed. Its origin and insertion are typical.

M. peroneus longus is the most superficial muscle on the anterolateral aspect of the crus. Hence, it covers the bellies of *Mm. tibialis anticus* and *peroneus brevis.*

M. extensor digitorum longus is poorly developed. Its tendon is ossified; it bifurcates a little more than half way down the tarsometatarsus and, near the distal end of that bone, each tendon bifurcates again. The two medial tendons fuse and insert on digit III; one of the lateral tendons inserts on digit II, the other on digit IV.

M. obturator internus is triangular in shape and has a large component which arises from inside the pelvis. I failed to find *M. obturator externus.*—ANDREW J. BERGER, *Department of Anatomy, East Medical Building, Ann Arbor, Michigan, January 7, 1955.*

Notes on the songs of Lark Buntings.—The songs of Lark Buntings (*Calamospiza melanocorys*) are as distinctive as their plumage, although that fact has not been recognized adequately in the literature available to us. Peterson (1941. "A Field Guide to Western Birds") says the song is "sweet and trilling." Pough (1946. "Audubon Bird Guide; Eastern Land Birds.") adds that it is "warbled in a rich musical voice," and Hoffmann (1927. "Birds of the Pacific States.")speaks, correctly, of "sweet notes and trills, often interspersed with harsh notes."

The following observations are based on our tape recordings of two Lark Buntings in 1954, one on June 13, near Hugo, Lincoln County, Colorado, and the other on June 14, near Cimarron, Gray County, Kansas. The birds were conspicuous as they flitted across wheat fields and pastures where neither bushes, trees, nor rocks, and but few weeds, offered any concealment. Luckily for our recording, the buntings sang fully as well from fence posts as when on the wing. The birds usually were seen in loose groups or colonies containing from two to as many as a dozen singing males. The only other birds we saw near these colonies were occasional Horned Larks, Western Meadowlarks, Savannah Sparrows, and Lark Sparrows.

Broadly, the songs of the two Lark Buntings we recorded on tape, and of others heard but not recorded, consisted of the random use of several distinct phrases, with considerable variation in both the musical quality and pitches of the several phrases. A phrase might consist of a trill, or a buzz, or one or two notes repeated three to ten times.

In all, we recorded 16 songs from the Lark Bunting near Hugo, and 10 from the Cimarron bird. The Hugo bird averaged three to four phrases per song, and the Cimarron bird averaged six to seven phrases per song. For both birds we were able to recognize 11 different phrase types or patterns, although the repetitions of a given phrase-type were not always exactly identical.

The 11 phrase-types of these two Lark Buntings may be placed in four groups. Group A contains three types, Cardinal-like and gliding in pitch: (1) a single-note *sweet,* rising rapidly in pitch for about an octave, this note repeated four to eight times; (2) a slurred double-note *cher-wheat,* rising in pitch, usually repeated about three times; and (3) *weeta,* falling in pitch. Group B contains two types, chat-like and unmusical: (4) *chug* repeated three or four times; and (5) *chut,* repeated more rapidly, usually nine or ten times. Group C contains three types, trills or buzzes: (6) a low-pitched *buzz;* (7) a junco-like trill; and (8) a high-pitched, insect-like trill. Group D contains three types: (9) *toot* repeated four to twelve times, quality clear and piping; (10) *churt* less clear and musical than type 9; and (11) *chew,* rather cardinal-like, but not conspicuously gliding in pitch as in Group A.

The use of these song types by the two males is indicated in the following table: