crown, besides being more rufescent than in the females, is darker, and the bill is longer and more slender, but these may be individual variations. The male measures: wing (chord), 91.3 millimeters; tail, 88; bill from nostril, 12.8. The females (ARP nos. 2558 and 2561) measure, respectively: wing, 86.0, 85.5; tail, 80.7, 84.6; bill from nostril, 12.5, 11.8. Unfortunately it was impossible to find the gonads of the Arizona specimen, RWD no. 468, which seems to be a male, however, measuring: wing 88.5; tail, 86.5; bill from nostril, 12.2 mm. In color it resembles the Sonoran male, but is a little duller and grayer, and it is decidedly paler on the crown. The bill is wide as in the females.

The characters of these four *nuttingi,* as compared with adequate material of *cinerascens* taken recently in Arizona in fall, winter, and spring, appear to be: (1) Size smaller in all respects; tarsus more slender; bill shorter and (usually) relatively broader; extreme length of females in flesh 202 and 205 millimeters (as against 212 to 215). (2) Wing more rounded; the outer (tenth) primary is about equal to the second (male) or even shorter (female); the ninth is decidedly shorter than the sixth, seventh, and eighth, being nearly or quite as short as the fifth. (3) Paler coloration above, and more yellowish, especially in the female; this is most noticeable on the crown; the upper tail coverts and edgings of the rectrices are more yellowish, less deep reddish. (4) A narrow line of dusky next to the shaft on the inner webs of the rectrices, and no tendency for any dusky terminal area to extend forward along the inner edge. (5) Brighter yellow below; gray of throat and chest very slightly darker. (6) Rufous edgings of the primaries narrower, paler, and duller; anterior wing-bar a trifle duller, more yellowish, and less extensive.

It seems probable that re-examination of existing series of *Myiarchus,* bearing in mind the probability of erroneous determination of sex by some collectors, and the age and seasonal variations, may considerably reduce the number of supposed "intermediates." In this connection it is important to consider the geographic variation within *Myiarchus cinerascens* as pointed out by van Rossem (*loc. cit.,* 1945), and its migratory behavior.—ROBERT W. DICKERMAN, *Arizona Cooperative Wildlife Research Unit, Tucson, Arizona,* and ALLAN R. PHILLIPS, *Museum of Northern Arizona, Flagstaff, Arizona, May 31, 1952.*

Observations on Molting of the American Coot.—As a part of a general study of the American Coot (*Fulica americana*), several individuals were held captive for the greater part of a year on the Berkeley campus of the University of California. In this time several observations were made on the molting of this species that seem worth recording.

The American Coot has one complete body molt a year, this being the postnuptial molt that occurs in late summer. Two birds (♂ T87, ♀ T00) entered their molt period about seven to eight weeks after tapering off from breeding activity, that is, during the last week of July and early August. The table presents the data obtained from them and shows the sequence of events and rates of replacement in the wing. Generally, the loss of flight feathers occurs almost simultaneously on both wings. The greater and primary coverts are likewise all dropped at one time, a day or two after the loss of the remiges. Molt of the middle coverts was less regular and the replacement was slower. The lesser coverts began molting about ten days after the flight feathers were dropped. The old feathers of both the middle and lesser coverts were pushed out on the tips of the newly developing feathers, remaining attached until the new feather sheathes were two to five millimeters long.

Rate of Wing Feather Growth (in Millimeters)

Date	Primaries	Secondaries	Length of New Feathers: Greater[1]	Coverts: Middle	Lesser
Bird ♂ T87					
July 29	5 to 9	B[2]	N	N	N
August 2	13	13	11	N	N
August 9	24+24[3]	"about same as primaries"		N	P
August 17	"primaries, secondaries, greater . . . coverts . . . nearly fully replaced."			B	C
August 28	"sheathed at base"	C	C	P	....

Bird ♀ T00					
July 29	18	18	14	2	N
August 2	23+13	....	....	....	B
August 9	26+26	24+40	18+33	12+10	....
August 17	P	C	C	P	C
August 28	C	C	C	P	C

[1] Includes primary coverts.
[2] Symbols are: B—replacement begun; C—replacement completed; N—not yet molting; P—replacement progressing.
[3] 24+24, indicates a sheath length of 24 millimeters and a free feather plume of 24 millimeters.

While it took a little over a month for complete replacement of the primaries, the secondaries were replaced in about four weeks. Greater and primary coverts were replaced in about three weeks and lesser coverts in about two weeks. The middle coverts tended to lag considerably, with the new feathers still growing after all of the other feathers were completely replaced.

Throughout the time of wing molt rectrices were being dropped and replaced one or two at a time.

On several captive coots it was noted that the normally ivory-colored bill took on a decidedly grayish coloration either during the molt period or in late summer prior to the commencement of molting. By September 10 five of the seven captive coots had developed decidedly grayish bills, and this same grayish bill character has been observed on birds in the field. This coloration often makes it difficult to distinguish between adults and early season birds-of-the-year during the fall season.

During late May and early June the leg scutes (particularly on the tarsus) of the majority of the captive coots were found to be scaling off. In every instance this revealed a deeper yellow coloration than previously apparent. In several cases this molting occurred on birds prematurely receding from breeding behavior, but in others this molt had no relation to breeding activity, but either accompanied decreasing frontal shield size or occurred on coots whose shields had remained at a low level of activity (Gullion, Wilson Bull., 63, 1951:160). Leg molting was not encountered among coots whose shields and breeding activity were developing during these months. Termination of the study prevented following these latter birds through the decreasing stage of the shield cycle. The leg molt on birds ♂ T87 and ♀ T00 preceded the wing molt by about 45 days.

The fact that feathers on the American Coot's wings are shed nearly simultaneously seems to be in agreement with the general pattern among Rallidae (Bent, Bull. U. S. Nat. Mus., 135, 1926, and Witherby, *et al.*, The Handbook of British Birds, vol. 5, 1947). During the period of wing molt coots become extremely shy, scuttling to cover at the least disturbance and seldom feed far from dense cover when undisturbed. They are disinclined to fly for a period of about four weeks and are probably incapable of flight for most of this time.

Molting of the leg scutes of birds seems to be seldom recorded in the literature, nor have any references to the seasonal graying of the American Coot's bill been seen by the author.

I wish to thank Dr. Robert W. Storer for calling my attention to the scarcity of published information concerning the molting of leg scutes by birds.—Gordon W. Gullion, *Nevada Fish and Game Commission, Boulder City, Nevada, July 4, 1952.*