

during early or adolescent stages of growth. Marine gulls, scavengers, beach-combers and surface feeders, are particularly dependent on weather conditions, especially wind, in their food gathering. During stormy weather surface life descends to greater depths and heavy surf beaten shores do not make good gleaning grounds. Gulls often show great concentrations and high excitement over surface water disturbances such as tide rips and heavy surf, yet it is doubtful if effort under such circumstances is always as profitable as over quieter waters.

If during a critical period of growth of nestlings an insufficiency of food prevails, the chicks may well receive a check to development for which no subsequent abundance will compensate. This seems true of live-stock and there is no reason to suppose that it would not be true of gulls. Nesting seasons are often unpropitious. Successions of bad weather lasting several days may follow one another and spells of a week or more of wind and storm are not unusual at such seasons. These occurrences must often cover most of the nest life of gull chicks, involve their most critical growing period just as they are ripening off into maturity, and produce a number of undersized adults.

Such under-development might not be equally marked in all of a numerous brood. Parent birds do not usually apportion food to their neediest offspring. They usually either dump it down for the young to fight over or else give it to the most vigorously insistent. In either case, in times of food shortage, the strongest and most aggressive are likely to get more than their fair share and the weaker ones less or even nothing. The general rule of the nest is that the strongest gets all it wants while the others snatch what they can. If anything remains after the strongest is satisfied the next strongest gets its innings and so on down the line. If there is not enough to go around the weakest goes without. Thus progressively the strong become stronger and the weak weaker; the former tend toward complete prosperity, the latter toward extinction. The final result, probably, is to raise to maturity birds that have been stopped in various stages of development and, though perfectly vigorous through subsequent ample nourishment, showing considerable range in size as between birds of the same brood.

However repugnant this system may be to our sensibilities, it is good practical natural selection, producing the largest number of strong offspring possible relative to the food supply, instead of none at all, or instead of a larger number of weaklings. —P. A. TAVERNER, *National Museum of Canada, Ottawa, January 10, 1935.*

**Efficiency of Nesting of the Tree Swallow.**—At my home near Fortine, Montana, bird houses which I have erected are occupied yearly by from eight to sixteen pairs of nesting Tree Swallows (*Iridoprocne bicolor*). For eight seasons I have kept more or less complete records of their nesting activities. In the case of sixty nests a full record has been obtained of the percentage of hatch and survival of the nestlings. The efficiency of propagation shown by the Tree Swallows in these representative nestings is shown below.

	First brood nests	Second brood nests
Nests with eggs.....	52	8
Eggs laid.....	324	39
Eggs hatched.....	319	39
Eggs failed to hatch.....	4	0
Eggs disappeared.....	1	0
Nestlings died.....	0	6
Nestlings taken by a Sparrow Hawk.....	12	0
Nestlings successfully raised.....	307	33
Nests that were 100 percent successful.....	44	6
Percentage of complete survival.....	94.7	84.6

Death of the six nestlings of two second broods was evidently caused by parasites. Hot weather does not seem to affect the nestlings adversely. Though raised in exposed wooden houses, the other six late broods of young survived temperatures as high as 97° in the shade.

Every year at least one pair of Eastern Sparrow Hawks (*Falco sparverius sparverius*) nests within a few hundred yards of our farmstead where the Tree Swallow houses are located. As a rule the hawks do not molest the swallows; but in 1931 the male bird of a pair of Sparrow Hawks that nested near-by acquired the habit of taking nestling Tree Swallows from the houses by reaching through the

small entrance holes. Twelve swallows were taken before I ended the hawk's depre-dations with a rifle. The female hawk successfully raised her brood of young without making any attempt to duplicate her mate's individual hunting habits.—WINTON WIEYDEMEYER, *Fortune, Montana, January 24, 1935.*

**Further Comments on the Cowbirds of the San Francisco Bay Region.**—The increase of cowbirds (*Molothrus ater*) in the San Francisco Bay region during the last ten years has been widely noted by local observers. Efforts to secure adult specimens were unproductive until the belated acquisition last year of a breeding pair (Grinnell, *Condor*, 36, 1934, pp. 218-219). Southwestern Alameda County seems to be the present center of abundance of the birds, as also the region of earliest record. Recently I obtained eight specimens near Irvington in this part of the County, through the courtesy of Mr. Nion Tucker and the assistance of Mr. Duke Trempe. These newly acquired specimens provide a more adequate basis for determination of race than has been had previously, and, because taken in early March, they point to per-manent residence of the population.

On February 3, 1935, cowbirds were congregated at the locality mentioned, on the Bay shore, where grain had been put out for the ducks. Mr. James Moffitt and I saw several groups of ten or more and believe there were over fifty in the vicinity. On March 8, when several specimens were taken, one flock of at least thirty birds was seen. Since cowbirds are not known north of the Bay region, except in the interior, it seems unlikely that this group could represent a population breeding any-where except locally. The flocks seemed to me quite comparable to the winter aggre-gations of resident birds in southern California, which disperse in the spring and summer. I doubt that the appearance of cowbirds in the spring in places about the Bay where they are absent in winter should be taken as evidence of migration. More probably these appearances are normal seasonal dispersals that lead to establishment of territories in which egg-laying will take place.

The skins of six males and four females now at hand have been measured. My method of measurement has been made to conform to that used by Dickey and van Rossem (*Condor*, 24, 1922, pp. 206-210), by checking results on specimens measured and reported upon by them. Average and extreme values for the group are: Males, wing, 104.8 (101.8-108.7); tail, 72.5 (70.6-74.6); culmen, 15.7 (14.8-16.6); bill depth at base, 10.2 (9.6-11.0); tarsus, 23.7 (22.0-24.7). Females, wing, 92.5 (9.09-94.4); tail, 62.0 (60.8-63.5); culmen, 13.9 (13.5-14.3); bill depth at base, 9.5 (9.1-10.2); tarsus, 22.4 (22.1-23.1).

Comparing these with Dickey and van Rossem's tables in their description of the race *californicus*, the males are found to equal or to slightly exceed *californicus* in wing length, tail length and bill depth. In length of culmen and tarsus they are as small or smaller than *obscurus* of the Colorado River. The females are in all measurements close to *obscurus*, except for bill depth which is intermediate. The females are colored like *californicus*, even more so than the original female com-mented upon by Grinnell. There is still, however, the element of doubt regarding the state of wear and fade of the *obscurus* series from the Colorado River, which may not be inherently less slaty than *californicus*.

Grinnell (*op. cit.*, p. 219) has referred to the *californicus* race of the San Joaquin Valley as a mosaic of intergrades. To me there appears to be no more heterogeneity in the San Joaquin group than in the Bay region group or than in Los Angeles County birds. All of our populations of the Pacific slope of California show a large, but not exceptional, degree of individual variation. Certainly the Bay group is not properly situated for geographic intergradation between *obscurus* of southern Cali-fornia and *artemisiae* of Nevada. Each of these populations of cowbirds in Cali-fornia has average size values which, if reliable, indicate slight inherent differences. If we are to follow Friedmann (*Wilson Bull.*, 46, 1934, p. 28), Willett (*Pac. Coast Avif.* No. 21, 1933, p. 156) and Grinnell (*loc. cit.*), and conclude that a central California race is not "usefully recognizable" and conceive of a more inclusive, locally variable, *obscurus*, we should not allow this to obscure certain important facts first brought to light by the describers of *californicus*. These, as I interpret them, are that cowbirds increase in average size, perhaps somewhat unevenly, from the Colorado River Valley north through the San Diegan district to the San Joaquin