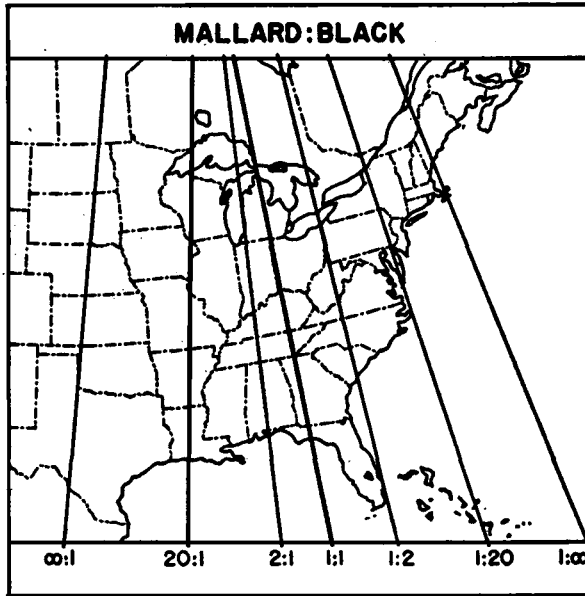


The ratios have been mapped and lines drawn to indicate the areas of relative change (Text-figure 1). The two species are about equally abundant along a line reaching from Michigan to Florida. (Although lines are used for illustrative purposes, it must be remembered that these lines actually indicate zones of change.) East of this line, the Mallard declines rapidly in relative abundance and reaches a ratio of one Mallard to two Black Ducks, then one Mallard to twenty Black



TEXT-FIGURE 1.—The ratio lines indicate zones of change in the relative abundance of Mallard and Black ducks; they are not fixed boundaries of change. The ratio varies from an “infinite number” of Mallards to one Black Duck, to one Mallard to an “infinite number” of Blacks.

Ducks, and finally one Mallard to an “infinite” number of Black Ducks. The reverse of this is true to the west of the even-distribution line, but the Blacks drop out more rapidly than the Mallards did to the east as evidenced by the closer approach of the lines of 2 : 1 and 20 : 1, respectively. The distance between the 20 : 1 and *infinity* : 1 lines is accounted for by the greater opportunity for Black stragglers in the interior than for Mallard stragglers in the Far East.—LEONARD WING, *The State College of Washington, Pullman, Washington*.

Is the Starling population decreasing in northeastern United States?—For about 15 years the Starling has been the most abundant bird in northeastern United States. Accurate counts of such an abundant, gregarious, and active species are almost impossible. Because of their filthy roosting and flocking habits, these exotics have become most obnoxious, especially in the District of Columbia, where the birds have wintered in staggering numbers. Although no exact figures can be given, it seems evident that peak numbers were reached six or eight years ago, a small but noticeable decline taking place each succeeding year.

Better evidence of this decline is found in the agricultural districts of extreme western New York, where serious depredations upon cherry orchards have been experienced. From June 20 to July 3, 1932, the writer studied bird-depredation problems in Chautauqua County, near Lake Erie, in western New York. At this time most of the young birds had been produced and flocks were just forming, but even this early in the summer a number of flocks were seen in the cherry orchards, where damage to the ripened fruit ranged anywhere from practically 0 to 100 per cent of loss upon individual trees. In the course of approximately thirty minutes one morning, a flock of almost a thousand birds descended upon one tree and completely stripped it of marketable fruit. The writer estimated that there were between 15,000 and 30,000 birds roosting on an isolated two and one-half acre site that obviously accommodated a large percentage of the birds in this section of the county. The nesting season was just drawing to a close, so that recruits were joining this flock daily. Needless to say, serious loss in the cherry crop resulted that year.

A similar study was begun in the same area on June 22, 1942, by Mr. Ford Wilke of the Fish and Wildlife Service Research Division, but the investigation was terminated on June 29 because of a relatively small population of birds and consequently small damage to cherries or other crops. The large concentrations of former years were not seen, and the flocks feeding in the orchards were small, numbering from four or five to fifty birds. According to Mr. Wilke and the County Agricultural Extension Agent (who had assisted with both investigations), the large flocks of earlier years were no longer forming and the cherry growers had experienced only minor depredations during the past two years. It was doubtful whether, in the summer of 1942, the area contained 25 per cent of the concentration found there in 1932.

A similar but less noticeable reduction of the enormous wintering flocks is believed to have occurred in the District of Columbia region, although the birds are still overabundant and constitute an annoyance of major proportions in the Capital City. No careful study of populations has been made, but a number of competent ornithologists who have been connected with the Starling problem for many years have repeatedly expressed their belief that there has been an encouraging reduction in the size and number of these flocks. The writer is of the opinion that there has been a reduction of 15 to 25 per cent in the population wintering in this section during the past eight years.

The evidence indicates, also, that there has been a general reduction in their numbers throughout much of the northeastern part of this country, especially in the section east of the Alleghenies and north of central Virginia. There can be little doubt, however, that there has been a progressive increase in their numbers and an extension of their range in the South and Far West.

A study of Starling populations throughout the country at this time would seem most desirable. Is the species declining in population? If so, what factors are responsible? What are the results of this shift or reduction in population? Are competitive species increasing? How does the shift in population compare with that of the introduced House Sparrow? Comments from other bird students are solicited.—CLARENCE COTTAM, *Fish and Wildlife Service, Chicago, Illinois.*

The occurrence of feather impressions in the Miocene deposits of Maryland.—On April 20, 1941, Roland W. Brown and William E. Salter of the U. S. Geological Survey while examining the cliffs along the western shore of Chesapeake