

**Large Swainson's Hawk Flight in South Texas.**—On October 6, 1953, I observed a large flight of hawks ten miles west of San Antonio, Texas. The flight came in the wake of a cold front, a norther, that had passed the night before. This norther had moved slowly south through the western half of Texas and seemed related to the hawk movement in San Antonio and other localities. As large hawk flights are seldom seen in central and south Texas in the fall, I made notes throughout the day as to size and shape of the flight, and then obtained data from other observers throughout Texas.

In San Antonio, on October 6, the weather was clear, following the rain that occurred as the cold front passed. The wind was from the north 15 to 30 miles per hour, diminishing during the day. The flight began at 8 A.M. with a few Swainson's Hawks (*Buteo swainsoni*) drifting down from the north. The southeastern part of the Edward's Plateau hill country is twenty miles to the north. By 9 A.M. the Swainson's Hawks were passing both as spiralling flocks and as many individual birds sailing directly south, the latter at the rate of 150 per minute. The number represents birds seen crossing Route 90, an east-to-west highway. For this counting, I did not use field glasses so the distance under observation ranges up to one-fourth mile to the west. Counts were made in eight two-minute periods, each period separated by three minutes. The birds per minute were computed from the counts (Figure 1).

From 8:45 to 9:45 A.M., big spiralling flocks of Swainson's were passing; these were counted separately from the single birds. The flocks ranged from 50 to 150 birds each, averaging 75. Four to six flocks passed per five-minute interval. Earlier, 8:00 to 8:45 A.M. smaller flocks were seen, averaging about 50 birds and occurring at an average of five per ten minutes. From 9:45 to 10:45, the flocks decreased in size to about 60 birds and from five to one flock per five minutes. After 10:45 A.M. only scattered flocks were seen so they were counted as individual birds.

The hawk species identified in flight included over 99 per cent Swainson's. This is similar to Allan D. Cruickshank's observations (Auk, 54: 385, 1937) of a large Swainson's Hawk flight October 2, 1936, in Hutchinson, Kansas. In the Texas flight a few of the Swainson's were in some form of melanistic plumage. The one per cent which was not Swainson's Hawks represented the following species listed in order of abundance: Red-tailed (*Buteo jamaicensis*) Sparrow, (*Falco sparverius*), Cooper's (*Accipiter cooperii*), Marsh (*Circus cyaneus*), Harlan's (*Buteo harlani*), and Sharp-shinned (*Accipiter striatus*). There were no Broad-winged Hawks (*Buteo platypterus*) although I had seen Broad-winged flights on the coast within a few weeks. Several observers determined all species with the aid of field glasses.

The shape of the flight was different from that in most descriptions. As in Cruickshank's flight, the birds moved directly south across gently rolling country and at an angle to the river valleys, the rivers of the area flowing to the southeast. But the flight had definite boundaries giving the effect of a channel of birds. The eastern boundary, from which I observed, was clearly defined; to the west were the counts reported, to the east scarcely one bird passed per five minutes. The vertical dimension of this channel was also of interest. The birds were found in a lower layer, from 50 to 500 feet above the ground and in a second layer at about 900 to 1500 feet above the ground. The width of the channel was measured along Route 90 on several occasions, once at 9 A.M. and several times toward the end of the flight, and found to be 4 miles wide plus or minus 0.1 mile. The western boundary was as sharply defined as the eastern, but the density appeared to diminish slightly toward the west.

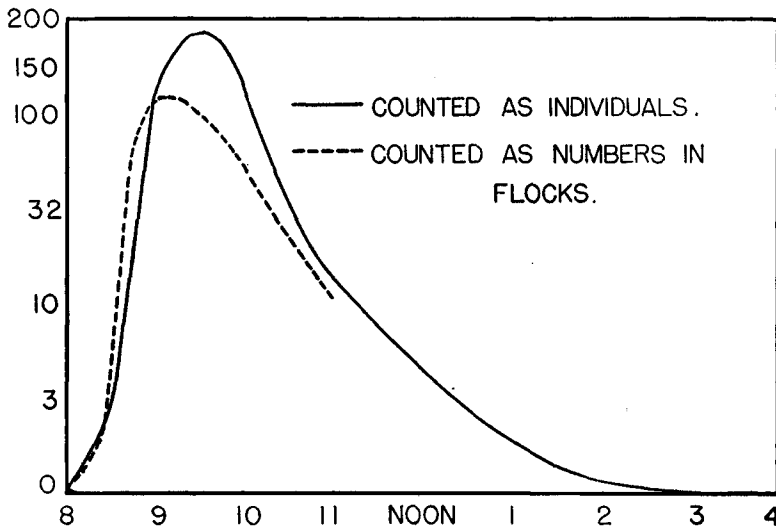


FIGURE 1. The number of hawks per minute seen crossing a quarter-mile section of Route 90 near San Antonio, Texas, October 6, 1953.

The count of individual birds added to those in flocks totals over 25,000 crossing the one-quarter-mile line under observation. This might indicate a total flight of several hundred thousand. One other flight of such size was reported by Griscom (Bull. Amer. Mus. Nat. Hist., 64: 155, 1932) where he says that most pass through Guatemala "in a few enormous flocks, which take hours to pass a given point." He mentions hearing of one flock "consisting of hundreds of thousands of birds" on October 25, 1925.

Reports from other observers indicated a general movement of hawks preceding the flight under discussion. About two weeks before the October 6 flight there was a large migration of Broad-winged Hawks in east and coastal Texas, reported by F. G. Watson and Luther C. Goldman, and several small flights of Swainson's from areas north of the Edward's Plateau. Around October 1, the Panhandle area reported small numbers of Swainson's, and Col. Wolfe and others reported big flights of several hundred Swainson's from the south east edges of the Edward's Plateau. Mrs. Jack Hagar at Rockport, Texas, 150 miles southeast of San Antonio, had large numbers of Swainson's from October 1 through October 7. These birds approached from a little east of north and left to the southwest. This might be considered an eastern part of the October 6 flight. On October 6, Mr. C. T. Gill reported 2000 Swainson's from Del Rio, a town 200 miles west of San Antonio. Possibly this was a western part of the flight.

It appears that the fall migration of Swainson's Hawks was moving south through central Texas around the first of October. A cold wave passed through on October 5. The following day, the birds, numbering possibly in the several hundreds of thousands, seemed to have assembled and passed south in a four-mile-wide channel. Two other parts of this migration are indicated by a flight of smaller size to the west and another flight east along the coast.—ROBERT P. FOX, 311 Beale Street, Wollaston 70, Massachusetts.