



Figure 1. Incredible swarm of Broad-winged Hawks overhead at Ancon Hill, Balboa, Canal Zone, 9:30 a.m. October 11, 1972.

## Spectacular Buteo Migration over Panama Canal Zone, October, 1972 *photographed by Neal Smith*

*The photographs on this and the adjoining pages were submitted by Neal Smith, Director of the Smithsonian Tropical Research Institute, Canal Zone. Dr. Smith's accompanying letter, in part, describing the remarkable flight of Broad-winged, Swainson's Hawks and other hawks over Ancon Hill, Canal Zone, follows:*

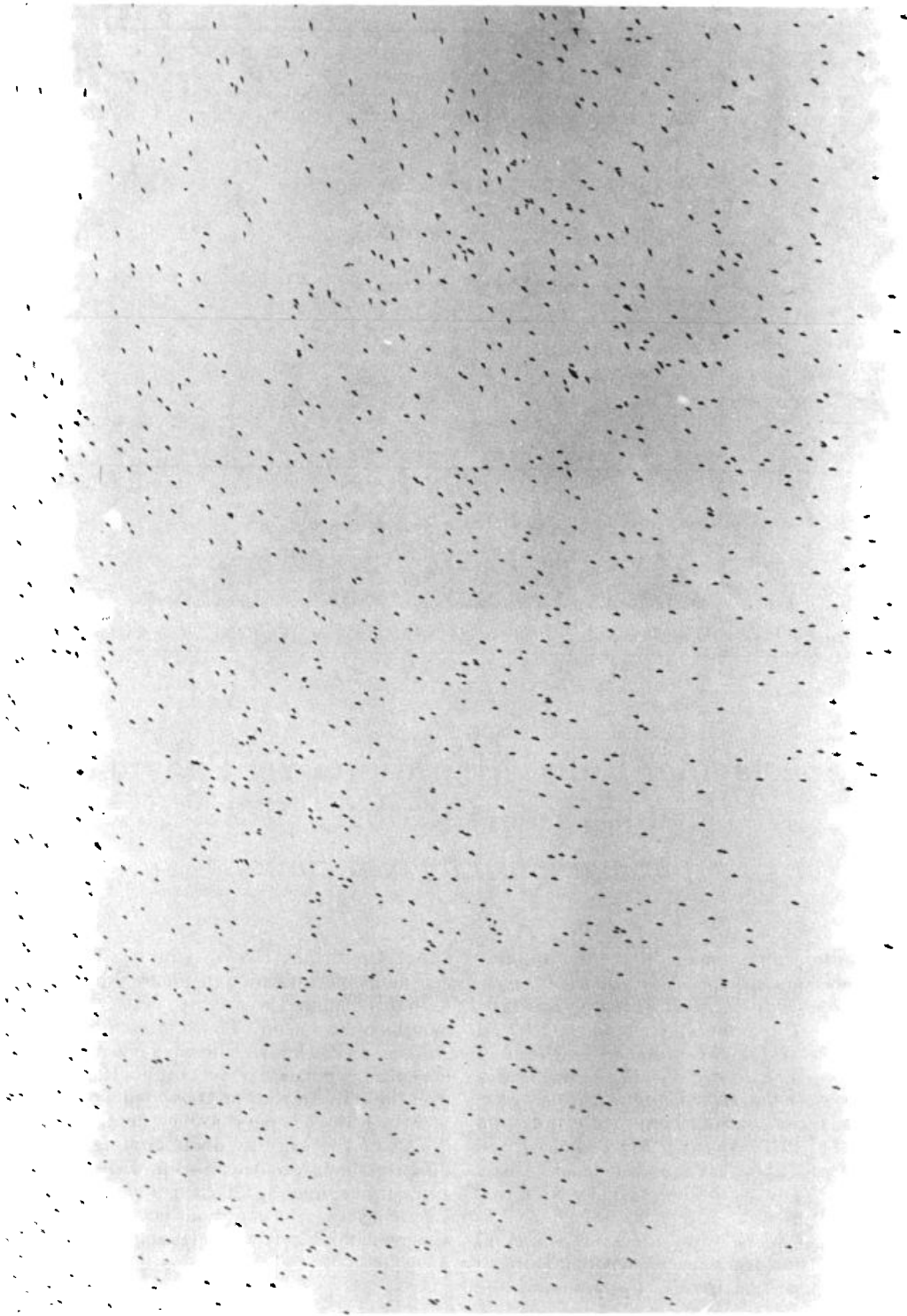
"All of these [photographs] were taken on October 11, 1972, when 29,753 Broad-winged Hawks slept within two square miles of Ancon Hill, Canal Zone. A total of 41,333 passed that day.

The hawks were counted using a special scanner of 35 mm negatives taken with motorized Nikons with 85 mm lenses. The film was the

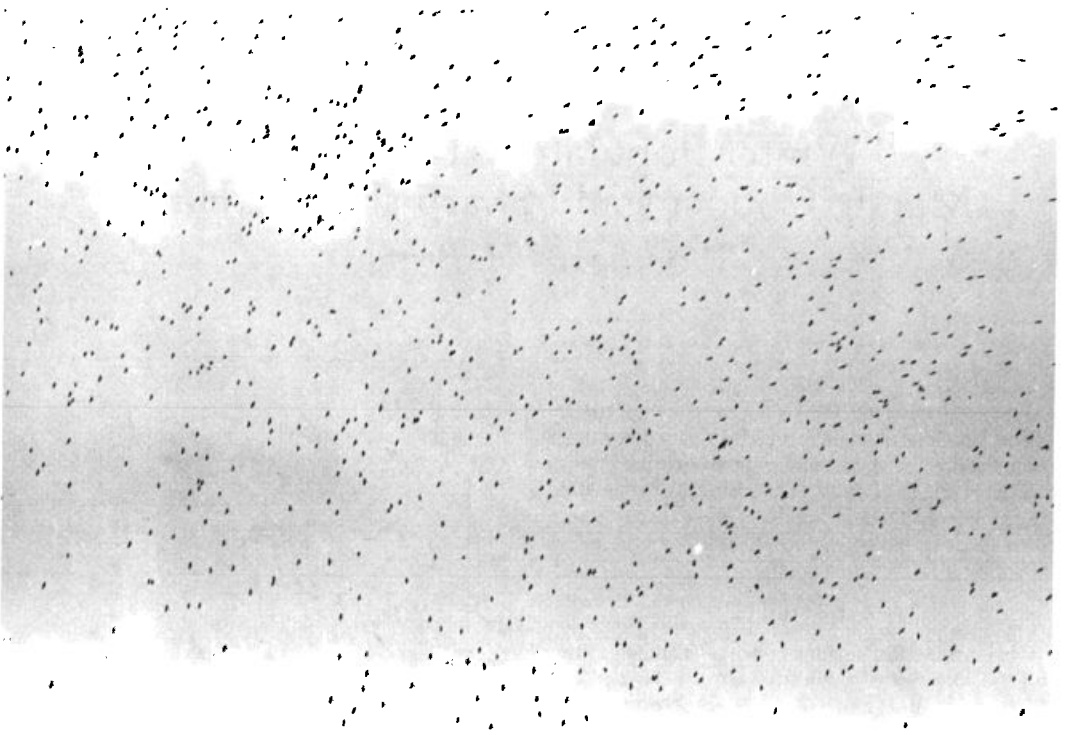
super fine-grain H&W, which allowed the enormous magnification of Figure 3 into Figure 4. In this manner I was able to count the various morphs of Swainson's Hawk throughout the migration. As you know, with but a few exceptions, the entire population of Swainson's Hawk passes over this hill. And no one knows what percentage of Broad-wingeds pass through here.

Figure 1 is of individuals coming over our office building on Ancon Hill. Figure 2 is an entire frame showing 1206 Broad-winged Hawks. Figure 4 shows the enormous magnification possible with this film; it is a small segment of Figure 3."

—P.O. Box 2072, Balboa, CZ



*Figure 2. A full frame showing 1206 Broad-winged Hawks overhead. Photos/Neal Smith*



*Fig. 3. A small part of the great flight of Swainson's and other hawks, from one 35 mm negative.*



*Figure 4. Greatly enlarged section of Figure 3, revealing color phases of the Swainson's Hawks.*