patterns not known to exist in any other member of the assemblage, including *Tersina* and vireos; (2) atypical eggs for a wood warbler; (3) an exceptional nest, in construction like those of kinglets (*Regulus*); and (4) an assortment of minor anatomical distinctions. Thus was the aberrance of one bird exposed as a result of a hint provided by its basihyale.

To determine more fully the occurrence of the cylindrical basihyale within the assemblage, and hoping thereby to detect a possible near ally of *Peucedramus*, I have examined the following additional forms, listed here for the most part in the order of Meyer de Schauensee (The Species of Birds of South America with Their Distribution, Philadelphia Academy of Sciences, 1966). A largely successful attempt has been made to include particularly the monotypical and endemic, aberrant, and little-known neotropical honeycreepers, tanagers, and sparrows. Among such birds it seemed to me a *Peucedramus*-like form might be found if one existed in the assemblage. However, in all such forms examined, as in the typical ones, the basihyale is laterally compressed. The problem of classifying *Peucedramus* thus not only remains as before, but deepens; and I am happy to see that Webster (Wilson Bull. 74: 417–425, 1962) has withdrawn his suggestion that this genus be combined with *Dendroica*.

Icteridae. *Molothrus bonariensis, Cacicus holosericeus, Quiscalus quiscula, Agelaius thilius, Icterus mesomelas, Leistes militaris, Pezities militaris.*

Parulidae. *Geothlypis aequinoctialis, Myioborus melanocephalus, Basileuterus chrysogaster, B. tristiatus, B. fraseri.*

Coerebidae. *Conirostrum cinereum, Oreomanes fraseri, Diglossa caerulescens, Iridophanes pulcherrima, Dacnis lineata, Xenodacnis parina, Euneornis campestris.*

Thraupidae. *Pyrrhuphonia jamaica, Tanagra chlorotica, T. lanirostris, Tangara velia, T. chilensis, T. punctata, T. xanthogastra, T. cyanicollis, T. gyrola, Iridosornis analis, I. reinhardti, Stephanophorus diadematus, Anisognathus igniventris, A. lacrymosus, Buthraupis montana, Wetmorethraupis sterrhopteron, Dubusia castaneoventris, D. taeniata, Thraupis cyanocephala, T. bonariensis, Thlypopsis ornata, T. ruficeps, Chlorospingus parvirostris, Hemispingus atropileus, Conothraupis speculigera, Chlorornis reifferii, Cissopis leveriana, Schistoclamys melanopis.*

Fringillidae. *Saltator aurantiirostris, S. albicollis, Piezorhina cinerea, Sporophila luctuosa, S. nigricollis, S. obscura, S. peruviana, S. simplex, S. castaneiventris, S. telasco, Loxigilla sp., Catamenia analis, C. inornata, C. homochroa, Gnathospiza taczanowskii, Sicalis lutea, S. uropygialis, S. olivascens, S. flaveola, S. luteola, Diuca speculifera, Phrygilus gayi, P. fruticeti, P. plebius, P. alaudinus, Coryphospingus pileatus, Atlapetes rufinucha, A. schistaceus, A. albiceps, Myospiza aurifrons, Rhynchospiza stolzmanni, Incaspiza pulchra, I. watkinsi, Emberizoides herbicola, Xenospingus concolor, Poospiza hispaniolensis, Poospizopsis caesar, Fringilla coelebs, F. montifringilla, Emberiza elegans, E. citrinella.*

An extralimital form, *Nesospiza acunnae*, of Nightingale Island, Tristan de Cunha, also was examined.

The American "nine-primaried" songbird genera which have yet to be examined in this continuing study include 14 Icteridae, 3 Drepaniidae, 1 Parulidae, 1 Coerebidae, 18 Thraupidae and 25 Fringillidae. These will be compared when and if suitable specimens become available.

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RAPTORS AND OTHER NORTH AMERICAN MIGRANTS IN MÉXICO

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The communication by Bussjaeger *et al.* (Condor 69:425–426, 1967) on the Turkey Vulture migration near Tecolutla, Veracruz, focuses attention on a facet of migration in México and Central America that occasionally has been mentioned in the literature but about which few details have usually been given. Spring and autumn raptor migrations in these low-latitude areas are often a conspicuous event, and it seems appropriate to supply more data on them, as has recently been done for similar flights near the Great Lakes in the United States.

In the mid-afternoon of 7 March 1960 between Matamoros and San Fernando, Tamaulipas, México, on highway 101, we observed an estimated 800 Turkey Vultures, *Cathartes aura*, passing toward the northwest in a generally linear alignment composed of long lines of birds extending for several kilometers. Most of the vultures were pursuing a fairly direct course without spiraling at an altitude between about 200 and 300 meters above ground. At this time the sky was partly cloudy with scattered cumulus, and the vultures were assisted by a southeast wind about 25 kph. No other species of raptors were noted with them. Preceding this flight, from 3–6 March, weather maps show that a fairly strong high-pressure cell moved southeast into southeastern United States behind a cold front which penetrated across the Gulf of México as far as southern Veracruz. Northeastern México at this time was receiving fresh north and then northeasterly winds. On 7 March we noted early in the day that the wind in extreme northeastern Tamaulipas was still light northerly, but it is apparent from the maps that the anticyclone was weakening and lower pressure becoming established over central México, with Tamaulipas on the warmer side of a stationary front situated approximately across the international border. The resultant wind shift to southeast and warming trend that day apparently

provided suitable conditions for this vulture migration in the coastal plain.

In the Sierra de Tuxtla near the Gulf coast in southern Veracruz some spring hawk flights in March and April 1960 consisted of birds moving northwest over the northwest-southeast aligned ridge of hills (maximum elevation 700 m a.s.l.) on the north side of the Lake Catemaco basin (Andrle, Condor 68:178–179, 1966). Hawks would occasionally pass over farther toward the south, particularly when the wind was northerly and dense clouds covered the ridge. Most of these flights, however, occurred between northers when barometric pressure was low over the mainland, temperatures fairly high, and the wind from a southerly quarter about 15–40 kph.

In April it seemed that hawks migrated over the Sierra with less regard for wind direction and velocity favorable to their progression. On 3 April 1960, for example, about 550 Broad-winged Hawks, *Buteo platypterus*, and 57 Swainson's Hawks, *Buteo swainsoni*, passed over the ridge toward the northwest between 09:00 and 11:35 through the low clouds and chaotic sky of a norther with the wind from the north and northwest at 60–80 kph. The following day, with the norther past its peak and cloud cover higher, we recorded 153 and 30 individuals, respectively, of the two species between 09:00 and 13:00, the wind still being from the north at 25–55 kph. Haugh and Cade (Wilson Bull. 78:106, 1966) also witnessed similar movements against the wind on the south shore of Lake Ontario, and they remark on the inclination of Broad-winged Hawks to migrate in spring during winds from a northerly direction. Their comment that an explanation for this can be found in a strong migration urge of this species seems logical, since Broad-winged Hawks migrate a longer distance than most other hawk species and have a more limited amount of time in which to carry out the nesting cycle.

Days on which there were hawk movements in the Sierra varied from clear to overcast with lack of wind or prolonged rain seeming to be the main factors associated with their cessation. The majority of hawks in these spring flights passed between 09:00 and 13:30, one exception being on 17 March 1960 when 55 Swainson's Hawks appeared over the ridge shortly after 07:00 on a fair, clear day and light southerly wind.

The day preceding the largest flight, 1 April 1960, was fair, clear, and warm with a slightly falling barometer and strong south to southwest winds 25–65 kph. On this day between 12:30 and 13:15 we recorded 319 Broad-winged Hawks moving rapidly northwest fairly high over the Catemaco basin ridge. They soared very little and kept mostly in a fast glide. On 2 April, a fair, clear, and even warmer day (30°C in shade at 11:30) than the previous, a low-pressure system was located over much of México and the Gulf, and winds in the Tuxtla area were diminished somewhat to 15–30 kph south-southeast. Between 11:55 and 13:00 hours we observed an estimated 5100 Broad-winged Hawks pass over the ridge. Many formed huge "kettles" high over several points on the ridge, and from these would then glide off in a west-northwest or northwest direction. They were accompanied by about 50 Swainson's Hawks and several Sharp-shinned Hawks, *Accipiter striatus*; from one to six of the latter species were observed on most flight days. This ridge of hills frequently served as a barrier for updrafts from the prevailing wind, the rising air at times possibly reinforced by the influence of local insolation and temperature differential between the land and Gulf waters. Actually, the whole linear conformation of the Sierra forms an orographic barrier to winds from the Gulf as well as inland (Andrle, Wilson Bull. 79:164, 1967) and therefore appears to be especially suitable for raptor migration.

The migration of about 400 Broad-winged Hawks that took place over the ridge between 12:45 and 13:00 on 15 March 1960 did not equal in proportion the rather spectacular passage of birds on 2 April, but it occurred during similar meteorological conditions—high temperature, low barometric pressure, and a norther arriving in the area a day or so later. It is of interest to note Stevenson's comment (Wilson Bull. 69:55, 58, 1957), in his paper on the relative magnitude of the trans-Gulf and circum-Gulf spring migrations, that it seems probable most Broad-winged Hawks cross from Yucatán to the Texas coast and then turn northward and northeastward. At that time he had few reports on which to judge. It would seem to me, in view of the known reluctance of most hawk species, including the Broad-winged, to fly across large expanses of water, and the definite spring movement of this species northwestward over the Sierra de Tuxtla, far to the west of Yucatán, that at least a large proportion of their migration may be circum-Gulf. Other migrant birds of prey observed over the Sierra either singly or in very small numbers with these spring flights are Cooper's Hawk, *Accipiter cooperii*; Marsh Hawk, *Circus cyaneus*; Osprey, *Pandion haliaetus*; Peregrine Falcon, *Falco peregrinus*; Pigeon Hawk, *Falco columbarius*; and Sparrow Hawk, *Falco sparverius*. The apparent absence of migrating Turkey Vultures over the Sierra in both spring and fall seems to indicate that they use essentially lowland routes.

From 1 to 4 October 1962 a high-pressure cell preceded by a cold front moved southeastward into southern México from west-central United States. This frontal system, in conjunction with the influence of a severe tropical cyclone off the west coast of México, produced widespread and occasionally heavy precipitation in Veracruz. As weakening and progression of these two systems took place from about 5–8 October, a gradual clearing and warming trend set in over the land south of the Sierra de Tuxtla. Both 7 and 8 October were what I came to term "conflict days" in the Sierra. Orographic effects were pronounced, and heavy cumulus clouds accompanied by precipitation formed against the Gulf side of this coastal range on a fresh northeast wind; yet south of the range it was partly clear and the wind was southerly.

On 7 October about 09:30, with generally cloudy skies and the wind fresh from the south, I observed 30 Broad-winged Hawks flying low southeastward over the foothills on the southern slopes of the Sierra. About one hour later, when the south wind had increased slightly to 15–40 kph and skies were clearer, I noted two dark phase Short-tailed Hawks, *Buteo brachyurus*, soaring toward the southeast about 100 m above highway 180 near Corral Nuevo south of the Sierra. I did not see any other hawk movement that day. The next day, 8 October, was mostly clear south of the Sierra with scattered cumulus and cirrus clouds and the wind diminished in velocity to 8–15 kph from the southeast. At about 10:00 25 Broad-winged Hawks passed southeast near Corral Nuevo. At 10:40 the main raptor flight commenced, moving southeast into the wind over highway 180 about 5 km southeast of Juan Díaz Covar-

rubias. Most of the birds were flying at elevations between about 150 and 300 m above ground, but others were at higher altitudes. They passed in long, irregular lines and occasionally soared or formed ragged "kettles." By 11:00 only a few stragglers were visible. During this period of about 20 minutes, at least 3600 raptors had gone by, the total being composed of approximately 800 Turkey Vultures, 300 Broad-winged Hawks, and 2500 Swainson's Hawks. From one to possibly three Short-tailed Hawks, two Marsh Hawks, one Osprey, several Sparrow Hawks, and a number of unidentified hawks accompanied this movement.

The Swainson's Hawks streamed over at the lowest altitude in an irregular band about 100–200 m wide; the Turkey Vultures and Broad-winged Hawks spread out at higher levels on a front about a kilometer wide. Although there was some intermingling of the three most numerous species in this flight, the majority of the birds stayed in fairly homogeneous species groups. The comparatively low altitude at which most of them were flying was likely a result of the head wind. Many of the Swainson's Hawks were in adult or subadult plumage, and there was a sprinkling of dark individuals, probably many of these being immatures.

Possibly most of the raptors in this migration moved southward from the United States on the favorable northerly winds during the first few days in October following the above-mentioned cold front. During the three or four days preceding their passage through southern Veracruz on 8 October, however, low pressure, partly cloudy skies, and generally moderate south or southeast winds prevailed over northern and central México. Thus the birds' progress southward into México perhaps was slowed somewhat by head winds, and they also may have been delayed for a short time by scattered areas of rainfall to the northwest in Veracruz. Although fall hawk flights in northeastern United States have been recorded during southerly winds (Broun, Atlantic Naturalist 6:105–112, 1951; Mueller and Berger, Wilson Bull. 73:184, 1961), especially at Hawk Mountain in Pennsylvania, movements under such conditions apparently do not usually involve high numbers or concentrations of birds. The magnitude and concentration of this Veracruz migration against the wind may not be an unusual occurrence in México and Central America in fall, considering the nature of certain meteorological factors in low latitudes. The pronounced continental constriction in this part of México and the comparative narrowness of the lowlands in the area may also be influencing factors. In view of present knowledge concerning raptor migrations in such regions, I think that more observations and analyses of these movements would be of value.

The following additional sight observations of migrants in Veracruz I believe are of significance. They deal with several species for which there are apparently few published reports for the state. Loetscher (Auk 72:14–54, 1955), Coffey (Auk 77: 288–297, 1960), Dickerman and Warner (Wilson Bull. 73:336–340, 1961), or Andrle (Condor 68: 177–184, 1966) have published previous records for them.

Falco peregrinus. Peregrine Falcon. We saw one over the marshes at Lerdo de Tejada northwest of the Sierra de Tuxtla on 3 May 1952 and another in the same locality on 10 February 1962.

Gallinula chloropus. Common Gallinule. On 19 May 1951 there was one bird at a marshy pond on the south side of highway 180 a short distance southeast of Alvarado, and five were at the same place on 13 March 1960.

Erolia fuscicollis. White-rumped Sandpiper. Four birds were closely observed on the Gulf shore near Alvarado on 19 May 1951.

Micropalama himantopus. Stilt Sandpiper. On 19 May 1951 an individual was at the pond southeast of Alvarado, and two were also seen there on 3 May 1952.

Steganopus tricolor. Wilson's Phalarope. Two were observed at the above-mentioned pond southeast of Alvarado on 3 May 1952.

Larus philadelphia. Bonaparte's Gull. One was observed as it flew close to the ferry at Alvarado on 6 November 1962. It was in immature plumage.

Gelochelidon nilotica. Gull-billed Tern. A group of eight on 13 March 1960 and another of 15 on 1 March 1962 were flying over the waterway through the marsh at Lerdo de Tejada.

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ORNITHOLOGICAL NOTES FROM ZACATECAS, MÉXICO

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The west-central Mexican state of Zacatecas is relatively unexplored ornithologically. References to my own earlier work there are given in Webster (1958, 1959). On more recent trips, I spent 1–3 August and 1–2 September 1959; 10–16 August 1961; 2 January–12 February 1964; and 13 June–24 July 1964, in the state, visiting all of the major sections and habitats, and reporting only some winter and breeding-season censuses (Webster 1964 and 1964a). On various trips my companions were Raymond Bandar, Bill S. Brinkley, Gwilym S. Jones, and Jackson R. Webster. Financial assistance was received from the National Science Foundation in 1959, from the Hanover College Faculty Research Fund in 1961, and from the Frank M. Chapman Fund in 1964. The Dirección General de Forestal y Caza of México courteously granted permits for each of my trips. The following list includes only those forms for which my findings represent new information. An asterisk (*) indicates that a specimen of the species has not previously been reported from Zacatecas. All specimens are in the California Academy of Sciences collection unless otherwise noted.

**Charadrius alexandrinus nivosus.* Snowy Plover. Three were seen and an adult female collected 3 August 1959. This was on the sandy shore of a shallow lake 5 miles east of Noria de Angeles, in southeastern Zacatecas; the country around was cactus-acacia grassland.