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On the Status of *Buteo nitidus* in New Mexico.—For many years southwestern New Mexico has been included in the range of the Gray Hawk, the substantiating specimen evidence consisting of two sets of eggs collected by Frank Stephens at or near Fort Bayard, Grant County, in 1876. Study of the sole remaining egg and of notes relating to the others suggested strongly to Hubbard (1974a) that they were laid by Cooper's Hawks (*Accipiter cooperii*). The same author (1974b) subsequently wrote that the eggs "were found to be those of Cooper's Hawk," terming the Gray Hawk's status in New Mexico hypothetical. His arguments were based on the eggs' pigmentation and size, date of collection, habitat, and the lack of other verified records.

Prior to 1974 at least two sight records of adult-plumaged Gray Hawks were made in southwestern New Mexico by individuals familiar with the species: 10 April 1961, at San Simon Cienega, Hidalgo County, by Bruce G. Elliott MS, and 16 May 1973, ca. 29 km southeast of Fort Bayard in the Mimbres River Valley by myself. Other sightings have been made along the Gila River, the most recent being that of an adult reported near Redrock, Grant County, 23 August 1973, by T. S. Bickle and W. Childs (1973). Hubbard (1974a) questioned Levon Lee's report (*in Ligon* 1961: 70) of an adult and young *Buteo nitidus* near Cliff, a few kilometers upstream from Redrock and near Mangas Creek. But although Lee was understandably puzzled by the fledged immature hawk he first encountered, he readily recognized the adult, which he saw "quite clearly" during the half-hour he devoted to the birds. Mr. Lee, a careful observer, would not likely have confused an adult Gray Hawk with *Buteogallus anthracinus*, a possibility suggested by Hubbard. Donald Bowman, who has had field experience with *B. nitidus* in Arizona, informed me (*in litt.*) that he "occasionally" saw adults of the species along the Gila near Riverside and Cliff during the 1960's. Of the summering raptors with which he was concerned—*Buteogallus*, *Buteo albonotatus*, and *B. nitidus*—Bowman considered the latter to be "the rarest." He did not record dates of his observations, but he saw Gray Hawks during two or three different years.

A single fresh flank feather from an adult Gray Hawk Allan Zimmerman and I found near Mangas Springs, Grant County, on 13 October 1974, provides meager but tangible evidence of the species' occurrence in the state (Fig. 1). This feather (preserved at Western New Mexico University) was entangled in the hooked spines of a cocklebur fruit beneath large willows and broad-leaved cottonwoods along Mangas Creek, 24 km northwest of Silver City (36 km from Fort Bayard). It is

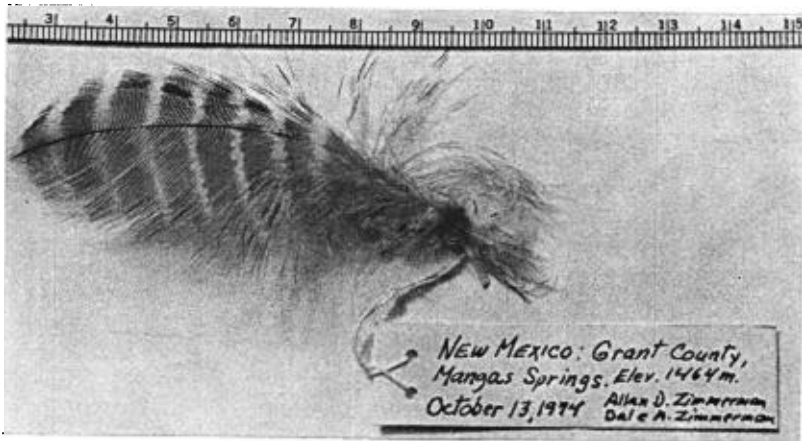


Fig. 1. Fresh flank feather of adult Gray Hawk (see text).

essentially indistinguishable from those of two adult *B. nitidus* skins in the collection of the University of Arizona with which Stephen M. Russell and I compared it.

On 2 May 1975, I discovered a pair of Gray Hawks along the Mimbres River 2 km from the site of my observation in 1973. There on 8 May, Marian Zimmerman and I photographed one highly vocal individual (Fig. 2) that behaved as if on territory, though we found no nest. We heard but did not see a second bird. A month later Allan Zimmerman recorded one there, and Richard Glinski (pers. comm.) found it still "calling defensively" on 6 August.

Concerning the old record from Fort Bayard, we need not necessarily accept the premise that Frank Stephens erred in identifying the eggs he collected there. He was comparatively inexperienced of southwestern birds in 1876, having been in New Mexico for only a year, but he undoubtedly had known *Accipiter cooperii* for a long time. Furthermore he worked in southeastern Arizona in 1880-81 and again in 1884 (Stephens 1918: 165-166), and during those years he came to know *Buteo nitidus* well (Bendire 1892). That species almost surely was in the immediate vicinity of Fort Bayard for Stephens to have identified two separate clutches as he did. In 1876 he would have known too little of Gray Hawks' eggs to have so named them on the basis of oological characters alone, and his notes indicate that he saw a female fly from one nest. Had he later considered his identification to be uncertain or in error, he had ample opportunity to correct it after he acquired his considerable experience with the species. He published some 50 items between 1884 and 1929, and he was a very conscientious individual (Huey 1938).

Eggs of Gray and Cooper's hawks are similar, but the slight mensural differences (even in the more significant breadth measurement, not in length where there is overlap) do not certainly establish that the Fort Bayard eggs were those of the *Accipiter*. According to Hubbard they were "0.9 to 1.4 mm narrower than the narrowest egg of Arizona *B. nitidus*" based on data from 25 eggs of the latter. Preston (1968) stresses that egg measurements should be of unbiased samples, citing Preston and Preston (1953) who showed that as "parentage has a significant effect on egg size, a valid sample, if it is to represent a species, should have equal numbers of eggs from each parent." Also "what is important is not the number of



Fig. 2. Gray Hawk in flight, Mimbras River, New Mexico (see text).

eggs measured, but the number of clutches or sets." Gray Hawks generally lay two or three eggs per clutch. Granting different parentage for each set available, a dozen individual birds at most are represented in the Arizona sample with which Hubbard compared the products of two New Mexican hawks. Egg size in at least some species further varies with age of the parent (Preston 1958), and there is possible variation in egg dimensions within a given population from year to year (Preston 1968). Gray Hawks' eggs also "vary considerably in shape" (Bendire *ibid.*) The faint spotting is not definitive as Hubbard himself explains (citing Lloyd Kiff on the frequency of spotted eggs in Sonoran Gray Hawks).

The 23 April date of Stephens' collections is early. Still, as Bendire wrote, the Gray Hawk arrives "in the vicinity of its breeding grounds early in March and in late seasons. . . the beginning of April." This would seem to have allowed ample time for nidification to have been under way at Fort Bayard by late April in an "early" year. Perhaps the most suggestive point supporting Hubbard's argument, yet one not stressed by him, is the bark lining in one of the nests at Fort Bayard. This is characteristic of Cooper's Hawk but apparently not of Arizona Gray Hawks' nests (R. Glinski, pers. comm.).

Hubbard questions the occurrence of *Buteo nitidus* at Fort Bayard "in a life zone the species does not occupy in Arizona," but Glinski (*in litt.*) found the species "not restricted to Lower Sonoran habitat" in that state, noting that it nests in "very

unexpected areas." He showed me an occupied nest in the oak zone (though in a cottonwood tree) in Santa Cruz County. The literature suggests former occurrences of the bird at high elevations in Arizona. In an earlier paper (Zimmerman 1965) I mentioned Visher's (1910) report of breeding Gray Hawks "at 6000 feet in the oak zone in Pima County." Otho Poling is stated by Bendire (1892) to have shot a Gray Hawk at "about 7000 feet" presumably in the Huachuca Mountains. Bendire cited Poling's prolonged observation of Gray Hawks nesting in a sycamore tree in the Huachucas. The female of that pair later was shot and presented to Poling who continued watching the male at the nest until its young fledged, but Hubbard (1972, 1974a) believed Poling's records, and those of Eugene Law from the Chiricahua Mountains, to have been based on Goshawks (*Accipiter gentilis*).

These early reports from upland localities are unsubstantiated but not extremely surprising; *Buteo nitidus* occurs still higher on occasion. Friedmann, Griscom and Moore (1950: 57) record one collected at 7500 feet (2250 m) in Durango. Elevation is important only as it influences such requirements as habitat and food supply, and this species is quite catholic in its choice of the former. Gray Hawks are not restricted to the cottonwood and willow associations they so frequently inhabit. Bent (1937: 264), like Stephens before him, found them common near Tucson in the 1920's, locating nests in mesquite and hackberry trees. In Tamaulipas, Sonora, and Sinaloa they occur in lowland thorn forest as well as in foothill riparian habitats. I have seen birds during spring and summer in moist oak woods above 1600 m elevation in northern San Luis Potosí. Davis and Johnson (1947) found a nest in oak-sweet gum forest at ca. 1035 m elevation in the same state. In Oaxaca, Rowley (1966) recorded the species nesting in pines. Although Gray Hawk behavior in Mexico may not always reflect that of the species in the American Southwest, nests in oaks, as Stephens reported from Fort Bayard, should not be wholly unexpected. At that locality, where Lower and Upper Sonoran elements merge, arborescent species of oak and scattered cottonwoods occupy riparian sites. Moreover creeks now largely dry near Fort Bayard once were at least semipermanent, and many more large trees graced their banks when Stephens collected there a century ago. The Mimbres River, along which Gray Hawks recently occurred, flows within 15 km of Fort Bayard; the Gila Valley is but 35 km to the west. Occurrences of *Buteo nitidus* anywhere in this region should have been no less likely before 1900 when comparatively large numbers of them existed in Arizona and northern Mexico.

Peripheral populations may fluctuate greatly through time. Possibly Gray Hawks occur in New Mexico only after highly successful nesting seasons elsewhere, or in years of exceptionally high populations of favored prey species. Amadon and Phillips (1939) supported E. C. Jacot's view that the range of *B. nitidus* may be governed by the availability of lizards. They suggested the distribution and migration of this bird may be "determined by the range (in abundance) and cycle of activities of one or two important food species such as *Sceloporus*," a lizard genus well represented in southwestern New Mexico. Small birds, upon which Gray Hawks also prey extensively, are particularly abundant in this region's river valleys, where population densities appear to vary from year to year.

The demise of Arizona's Gray Hawks is evident from the account by Brandt (1951), yet Phillips et al. (1964) noted the species' reappearance (in 1958, 1959, and 1963) at formerly abandoned and in new, unexpected places. Glinski's recent field work suggests this trend may be continuing (or resuming) in Arizona. In western Texas, Mollhagen (1971) found a dead Gray Hawk in the Davis Mountains of Jeff Davis County on 27 August 1969. Roland Wauer (Oberholser 1974; pers. comm.) saw adults in Big Bend National Park on 14 April 1967 and 3 April 1970,

and reported another sighting in Brewster County during late March of the latter year. Thus Gray Hawks continue to occur at unusual localities across the Southwest, albeit rarely.

In summary, there is little reason to reject reports because they fail to conform to the species' "normal" habitat and elevation pattern. Probably some of our northern birds always have occupied areas deemed more or less atypical today. This, together with Stephens' reputation for reliability, the limited oological data, and the Gray Hawk's documented present-day occurrence close by, all caution against full acceptance of Hubbard's conclusions regarding the much-discussed Fort Bayard eggs. As but one of the latter remains, their true identity may never be proved. Perhaps Stephens secured sets of both species there. In any event, the Gray Hawk now occurs and probably nests rarely in southwestern New Mexico.

Donald Bowman, Bruce Elliott, and Roland Wauer kindly supplied details of their Gray Hawk sight records. Dean Amadon, Richard Glinski, Gale Monson, Ralph Raitt, and Walter Spofford critically read the manuscript. Each made several important and much appreciated suggestions. Glinski provided much information on the species in Arizona.

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Western Flycatcher in Oklahoma.—On 6 September 1974 I collected an immature female Western Flycatcher (*Empidonax difficilis*) 10 km east of Kenton, Cimarron County, Oklahoma. The bird was perched alone in a willow alongside the stream bed in the bottom of a small canyon. The specimen was prepared as a study skin and deposited in the National Museum of Natural History (USNM 567683).

This record is the first of a Western Flycatcher in Oklahoma. Sutton (1974: 26) gave hypothetical status to the species on the basis of two specimens taken in extreme southwestern Kansas on 3 and 5 September 1952 (Graber 1954). Krehbiel (1961) considered the species an occasional transient visitor in New Mexico's Union County, which adjoins Cimarron County, Oklahoma. According to Hubbard (1970: 53), however, no specimen records exist from Union or the other eastern tier counties of New Mexico. The species seems not to have been reported from the eastern plains of Colorado (Bailey and Niedrach 1965: 531) nor from the Texas Panhandle (Oberholser 1974: 559-560).

The Oklahoma specimen is notable because, as J. P. Hubbard (pers. comm.) pointed out, *E. difficilis* seems to be extremely rare east of the Rockies, compared especially to Dusky (*E. oberholseri*) and Hammond's (*E. hammondi*) Flycatchers, even though the species breeds in the Black Hills. During 8 days (6-13 September) of field work in the Kenton area, I encountered about 20 other *Empidonax* flycatchers, including Dusky, Hammond's, Least (*E. minimus*), and Willow (*E. traillii*), but none was seen that looked yellowish enough to be another Western Flycatcher.

Two races of the polytypic species *E. difficilis* might be expected in Oklahoma, the nominate form of the Pacific Coast and *E. d. hellmayri* of the Rocky Mountains. One of the Kansas specimens mentioned above was identified as *hellmayri* and the other as intermediate between nominate *difficilis* and *hellmayri* (Graber 1954). As immature Western Flycatchers in early autumn are in juvenal plumage, I compared eight *E. d. hellmayri* juvenals, of both sexes, with a long series of nominate *difficilis*. No consistent differences were apparent in ventral coloration, which is highly variable. Foxing affects the color of the upper parts, but when skins of the same approximate age are compared, *hellmayri* averages more greenish, more grayish, and darker on the dorsum than *difficilis*. The Oklahoma specimen was compared with the most recent material available (1948 to 1962). It is perceptibly greener in dorsal color than any of the reference skins, whether *hellmayri* or *difficilis*, but it is closer to the *hellmayri* series than to the latter.

In evaluating measurements, I have been hampered by a scarcity of juvenal material of the larger race, *hellmayri*, and by the probable missexing of birds in my reference series of juvenal *difficilis*. The measurements (in mm) of the Oklahoma specimen are: wing chord 63.7, tail 54.8, bill length (nostril to tip) 7.8, bill width