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THE WHITE-TAILED KITE

WITH SEVEN ILLUSTRATIONS

By GAYLE PICKWELL

Introduction. As short a time as four years ago "White-tailed Kite" was merely the name of a rare North American bird which the writer, at that time, did not anticipate ever seeing in life. However, by one of those turns of destiny which abruptly change the course of events for many of us, I crossed the width of the continent to enter upon a position in San Jose, California. Within a month I had seen White-tailed Kites in the field and from that moment they have become, to me, objects of increasingly great interest and information.

The ornithological literature containing references to the White-tailed Kite (*Elanus leucurus majusculus*) refers most frequently to Santa Clara Valley, California, as the place of the observations. Thus of eighteen references before me which have specific localities given, ten (Evans, 1887; Taylor, 1887, 1889, 1894; Bendire, 1892; Barlow, 1893, 1895, 1897; Wright, 1913; Grinnell, 1914) report some or all of their observations as pertaining to the Santa Clara Valley. Four of these refer specifically to San Jose (Bendire, 1892; Taylor, 1887, 1889, 1894). These last are of especial interest because of the opportunity thus given the writer to compare accounts of more than forty years ago with the situation as he finds it today. In spite of the fact that Taylor, in 1889, wrote of the Kite, "I venture to assert that there are not more than four pairs this year breeding within a radius of seven miles of that city [San Jose]," today, forty-one years later, there are still that many or more.

So it is with pleasure that I listen frequently to excited accounts from friends or students who tell of white birds with black wing patches that hover like Sparrow Hawks and dangle their legs. For thus information is brought, inadvertently, that our Kites, of this location or that in Santa Clara Valley, are still a-wing. In some such manner the knowledge was secured of the breeding birds the accounts of which shall form the major portion of this article. To me, through a student relative (Mr. Elton Bowman) of the ranchers concerned, an account was given of birds "like sea gulls and with heads like owls" that were nesting in "mush" and live oaks on J. A. Slatore's ranch some two or three miles south of Evergreen. Through Mr. Earland Whaley, a son-in-law of Mr. J. A. Slatore, and through Mr. Slatore himself, the nest sites about to be described were pointed out June 3, 1928. To the above gentlemen the writer is greatly indebted for their courtesies and the most gratifying interest they showed throughout the study.

To Mr. Lester Hannibal, of San Jose, California, the writer is indebted for much assistance in tree-climbing, in photography and for records secured on days when the writer could not go into the field.

The nesting territory. A spur of the Mount Hamilton Range, the Silver Creek Hills, extends into the Santa Clara Valley about seven miles to the south and east of San Jose. On the tip of this spur is the little village of Evergreen and south from Evergreen some three miles is the ranch above mentioned.

To one acquainted with the foothills of the inner coast range of California but little need be said of their topography and flora. In their wider valleys intermittent streams are lined with willows and sycamores, with scattered coast live oaks (*Quercus agrifolia*) and orchards of valley oak (*Quercus lobata*) on the rolling lands of either side. The narrower cañons and wetter stream beds have California



Fig. 76. THE HOME OF THE WHITE-TAILED KITE IN THE SILVER CREEK HILLS, SANTA CLARA COUNTY, CALIFORNIA. NEST NO. 2 WAS IN THE VALLEY OAK OF THE FOREGROUND.

laurel (*Umbellularia californica*), occasional alder, cottonwoods, and maple (*Acer macrophyllum*). The slopes here have buckeye (*Aesculus californica*) and undergrowth of poison oak (*Rhus diversiloba*). (See fig. 76.)

The Slatore ranch lies in the foothills whose summits are grass-covered with wild oats and bromes, with scattered valley oaks and live oaks, and here and there a cluster of California coffee berry (*Rhamnus californica*) and gnarled *Sambucus*. Rocky outcrops, where more moisture may be trapped, have curious copses of scrubby growths of toyon, holly-leaved cherry, sages and sage brush; and the gullies lined with buckeye, California laurel, and poison oak run down to Silver Creek where the laurel and willows predominate. But the hills are mostly smooth as velvet, golden velvet most of the year, and green oaks are scattered over the velvet, like buttons on a buxom vest. In three buttons on this velvet vest were occupied nests of the White-tailed Kite.

That such a habitat is not an unusual Kite home is shown by the fact that all the Kites of Santa Clara Valley today are, excepting one or two pairs, restricted to the lower foothills of the Mount Hamilton Range and Santa Cruz Mountains, on either side of the north end of the Valley. The exception is of not more than two pairs that occur to the north of San Jose between that city and the Alviso salt marshes. These frequent the cottonwoods and eucalyptus trees of the Coyote Creek and, not infrequently, are seen hunting over the treeless marshes at the foot of the Bay in common with Marsh Hawks, native there, and Turkey Vultures and Red-tailed Hawks from the hills.

To some writers the White-tailed Kite is a bird only of the marshes, with their broad stream beds lined with willows and cottonwoods, to others they are of the hills. Cooper (1870) assigned them, in winter (nests and eggs from California were unknown to him), to the tule marshes of the Sacramento and other valleys, though they had been seen as far north as Bolinas Bay and near Monterey. Evans (1887) found a number of nests along the Russian River, all near a body of water. Bendire (1892), quoting B. W. Evermann, writes of solitary individuals over the San Buenaventura marshes toward Saticoy. Again Bendire, quoting A. L. Parkhurst, describes their habitats as on banks of streams or fresh water marshes if live oaks or willow groves are near by. And lastly he, quoting L. Belding, writes that, in the vicinity of Stockton, they are rarely away from the tule marshes. Barlow (1897), who over a period of three years took nine sets of eggs of the White-tailed Kite in Santa Clara County, writes that, with few exceptions, they were nesting in level or slightly rolling country where live oaks were in abundance. Ray (1904) found nests in the foothills south of Novato, Marin County. Wright (1913) saw them in the vicinity of Ravenswood, Santa Clara County (lowland country northwest of Palo Alto). Grinnell (1914) records two Kites over a meadow near a line of willows bordering the Russian River near Forestville, Sonoma County, and again over the Suisun marshes near Cygnus, Solano County. Peyton (1915) found Kites in a willow swamp near Sespe, Ventura County, and they nested in oaks and a sycamore there (he does not say in the swamp). Van Rossem (1923) noted one flying up and down the Mohave River, where cottonwoods and willows lined the stream, below Victorville, San Bernardino County. Of these, only Evans, Bendire (A. L. Parkhurst), Barlow, Ray and Peyton describe breeding sites, and though there are other nesting references before me they do not give the general conditions. Of the above five references two describe foothills (with oaks), two stream banks (or marshes with live oaks and willow groves near by), and one a willow swamp.

Nest spacing. Two of the trees on the Slatore ranch were valley oaks (*Quercus lobata*), and the third a coast live oak (*Quercus agrifolia*). The three formed an oblique or scalene triangle on the rolling hills with the longest side 320 yards and the others 200 and 175 yards respectively. To anyone conversant with the wide spacing of most raptorial birds this juxtaposition of the Kite nest territories seems unusual—indeed, so much in contrast with their near-relatives, semi-communal. Subsequent activities of the Kites (their concentration on each other's territory, for instance) indicated that this method of nesting was not unusual and, perhaps, judging from the fact that more birds were frequently seen than nests accounted for, one or two other pairs may have been in the vicinity.

Remarks of other observers pro and con this remarkable nesting habit are of considerable interest. Thus Evans (1887), in describing conditions on the Russian River, says, "I saw several pairs, each pair separated from the other by several

miles." On the other hand, Peyton (1915) describes a situation at Sespe, Ventura County, wherein two Kites had nests within 200 yards of each other. So far as can be learned these are the only writers who make any reference to nest spacing. What the significance of close nesting may be, whether of ancestral habit developed through an exigency of another day or practiced today through some benefit of aggregation, is, after all, conjecture. Certainly it cannot be explained, as are so many nesting associations, through want of proper nest sites.

The nesting tree. The heights of two of the nests were estimated to be from twenty-five to thirty feet above the base of the tree. These were in valley oaks. The height of the third, in a coast live oak, was carefully measured. It was unusually high, for the result showed it to be exactly 59 feet. In this case the oak was on a steep slope so that by walking a few hundred feet up hill one was soon on the level of the nest.

The following table has been compiled from the literature regarding the nesting trees of various White-tailed Kites. Most of the figures are probably estimates since no evidence is given to the contrary.

WHITE-TAILED KITE NESTING TREES

Authority	Tree species	Height
Evans (1887)	maple	not given
do.	oak or sycamore	40 feet (av. of 8)
Taylor (1889)	live oak	"topmost branches"
do.	live oak	35 feet
Bendire (1892)		
(B. W. Evermann)	cottonwood	"topmost limbs"
do.	live oak	45 or 50 feet
do.	live oak	40 or 50 feet
(A. L. Parkhurst)	live oak	30 feet
Barlow (1897)	live oak	25 feet
do.	live oak	not given
do.	live oak	20 feet
do.	live oak	20 feet
do.	live oak	35 feet
do.	"slender oak"	35 feet
do.	live oak	50 feet
Peyton (1915)	"small oak"	18 feet
do.	"oak"	20 feet
do.	"big sycamore"	"top"

The nests of the Kite are not placed in firm crotches as are those of most tree-nesting hawks but, instead, among the slender branches of the extreme top of the tree. So placed, they are often well concealed from below but from above fully exposed. This fact has been noted by most writers. From the standpoint of the Kite it may be very unfortunate, for the nest contents are in full view of other hawks against which these birds constantly contend. It may be that such nest-placement is one detrimental factor in the Kite's struggle for existence.

The nest. The nest of the Kite has been described over and over again, almost as frequently as the eggs, in the ornithological literature. Such being the case, but few words will be given here and these supplemented by a table constructed from the descriptions of others. A rather loose pile of dry sticks is gathered into the upper branches where the nest is to be located and a slight lining of straw, grasses or rootlets put into the shallow cavity within. (See fig. 77.) Nest number 2 consisted, in its outer structure, of twigs and dead branches of the valley oak. Its lining was of brome grasses, wild oats and barley stems.



Fig. 77. EGGS IN NEST NO. 2 OF THE WHITE-TAILED KITE, PHOTOGRAPHED *in situ*.

NESTS OF THE WHITE-TAILED KITE					
Authority	Date	Condition	Body	Materials	Lining
Evans (1887)	May 22, 1886	.....	dry sticks		grass
Taylor (1887)	early May, 1887	old nest	sticks		new feathers
Taylor (1889)	Feb. 18, 1889	new nest	oak sticks		stubble
Taylor (1889)	March 9, 1889	same nest as of May, 1887	.....		.....
Bendire (1892) (B. W. Evermann)	.....	flat structure	sticks		straw (barley?)
(A. L. Parkhurst)	.....	.....	dead twigs		dry stubble
Barlow (1897)	April 19, 1894	(nest collected)	small oak sticks		dry stubble and Spanish moss
Barlow (1897)	March 17, 1895	new nest (location as of April 19, 1894)	.....		.....
Barlow (1897)	April 9, 1895	same nest as above	.....		.....
Barlow (1897)	March 24, 1895	unusually large, old?	.....		long dry grasses
Barlow (1897)	April 13, 1895	.....	.....		dry stubble, Spanish moss
Barlow (1897)	March 14, 1896	15 in. in diam., 6 in. thick	.....		.....
Ray (1904)	March 31, 1902	8 in. over-all, cavity 6½ in. in diam.	twigs		grass
Ray (1904)	April 20, 1902	as of March 31, 1902	.....		.....
Peyton (1915)	April 22, 1914	"substantial"	oak twigs		weed stems
Peyton (1915)	May 23, 1914	"flimsy"	willow twigs		rootlets

Nesting dates. Since nearly all dates in the literature are given by egg-collectors who took the eggs the dates they give are, at best, merely indicators of the initiation of nesting activity. However, there is a remark or two about activities prior to nesting as well as about some of the nest-building activities. A. L. Parkhurst (Bendire, 1892) states that the Kites can be found at the nest-site in January. Taylor (1889) saw a Kite carry a stick into a live oak and discovered a Kite nest, without eggs but with a new lining, on February 19, 1889. Of these remarks, that of Parkhurst probably loses its significance since Kites may be found near

their breeding site at all times of the year. Taylor's (1889) record of a full set of eggs on March 9 is the earliest. Many other sets have been taken in March, several in April (mostly known second sets), and a known second set in June. Below is given a table of collectors' dates as far as ascertained.

COLLECTORS' WHITE-TAILED KITE EGG-TAKING DATES

Authority	Date	No. of eggs	Condition of eggs	Place
Evans (1887)	May 22, 1886	5	fresh	Russian River
Taylor (1887)	early May, 1887	4	slightly incubated	San Jose
Taylor (1889)	March 9, 1889	4	not given	San Jose
Bendire (1892)				
(B. W. Evermann)	May 4, 1880	3	nearly ready to hatch	Santa Paula
(B. W. Evermann)	April 12, 1881	5	fresh	Santa Paula
(B. W. Evermann)	April 12, 1881	4	fresh	Santa Paula
(B. W. Evermann)	early June, 1881	not given	second set	Santa Paula
(A. L. Parkhurst)	March 15 to April 10	(3 sets)	not stated	San Jose
Barlow (1897)	April 19, 1894	3	not given	Santa Clara Co.
Barlow (1897)	March 17, 1895	4	slightly incubated	Santa Clara Co.
Barlow (1897)	April 9, 1895	5	fresh (2nd set)	Santa Clara Co.
Barlow (1897)	March 24, 1895	5	incubation adv.	Santa Clara Co.
Barlow (1897)	April 15, 1895	4	fresh (2nd set)	Santa Clara Co.
Barlow (1897)	March 10, 1896	4	incubation one-third advanced	Santa Clara Co.
Barlow (1897)	March 29, 1896	4	not collected (2nd set)	Santa Clara Co.
Barlow (1897)	April 13, 1895	4	incubation one-half advanced	Santa Clara Co.
Barlow (1897)	April 13, 1895	4	incubation one-half advanced	Santa Clara Co.
Barlow (1897)	March 29, 1896	4	not stated, adults as of April 13, 1895	Santa Clara Co.
Barlow (1897)	March 14, 1896	4	fresh	Santa Clara Co.
Ray (1904)	March 31, 1902	3	almost fresh	Novato, Marin Co.
Ray (1904)	April 20, 1902	5	incubation begun (2nd set?)	Novato, Marin Co.
Peyton (1915)	May 23, 1914	4	fresh (2nd set, probably not collected)	Sespe, Ventura Co.

Peyton found two nests with young (April 22 and April 25, 1914). Of these the second lost its young. One young left the first nest on May 16, 1914 (last visit); others were almost ready to do so. In a letter to the writer, Mr. Laidlaw Williams tells of a nest with young, discovered on May 26, 1928, in the Carmel Valley. These young had gone from the nest, but they were in the vicinity, May 29.

The number of sets of eggs Kites will lay, if first ones are destroyed, is certainly two, probably three. How many broods of young they will raise is another thing. Evidence, as given below, indicates that the incubation period is not less than thirty days. Young are in the nest about thirty days. If Kites, on the average, begin incubation on March 15, then the resultant young will leave toward the middle of May (Peyton and Williams, above). A second set would carry the birds to August 1.

The date of the discovery of the nests on the Slatore ranch was June 3. Two of these hatched their young during the first week of July; the successful young left at the end of July and during early August. These could have been second broods. The fact that three birds were incubating simultaneously indicates strongly that such was true. If they were not second broods, what prior ordeals these birds must have suffered from the inception of their nesting efforts in March!

A strange observation in this connection was made on August 3, 1928. While I was doing some work along Coyote Creek three or four miles north of San Jose a Kite with a stick in its talons was seen to fly into a tall eucalyptus.

Chronology of nestings. At the time of the first visit to the Slatore ranch, Kites were sitting on the three nests. One nest examined had four eggs; the con-

tents of the others were not ascertained at this time. During our visit Kites hovered and sailed near. Since some were in the air in all cases when the nests were occupied it is presumed that these birds were the males, though no certain method was developed whereby sex could be determined in the field except that a slight discrepancy in size was often apparent when two or more Kites were close together. Other writers ascribe nest-building (Bendire, 1892) and incubation (Barlow, 1897) to the females and certain reactions of nest solicitude (Barlow, 1897) to the males, without making clear how they determined the sex. In any case, the birds in the air maintained a constant production of various notes (to be described later) and frequently uttered also at each other in aerial attack.

The visit above described was made on June 3, 1928, and visits were made thereafter at varying intervals until the last nest was empty. This occurred on August 10, 1928, and observations were made on a total of fifteen days during this period. The dates of visits were as follows: June 3, 21, 28, 30, July 1, 4, 10, 23, 25, 27, August 5, 10, and 15.

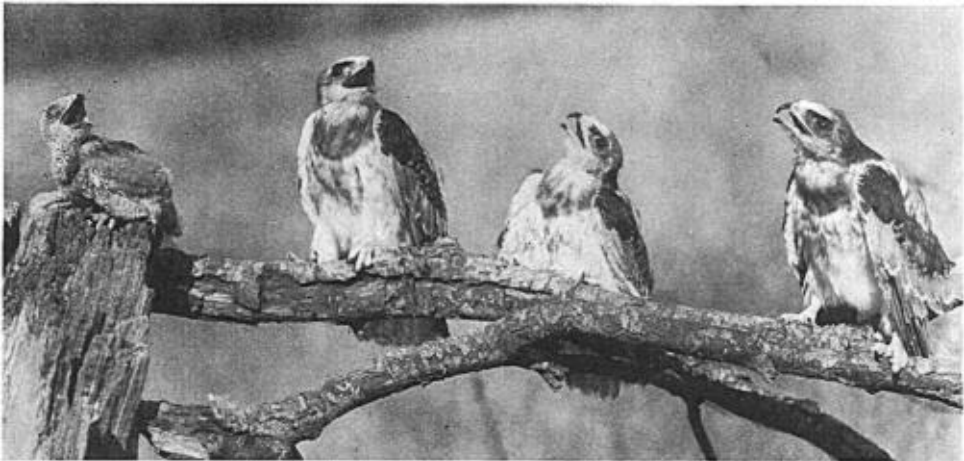


Fig. 78. NESTLING KITES REMOVED FROM NEST AND POSED FOR PHOTOGRAPH. THE CAMERA CAUGHT THE NICTITATING MEMBRANE CLOSED IN THE RETARDED LEFT-HAND NESTLING.

The three nests may be designated 1, 2, and 3. Numbers 1 and 2 were in valley oaks, number 3 in a live oak. A Kite had been seen on number 1 on June 3, but no bird was observed on it subsequently though it was not remarked on every trip. Lester Hannibal climbed to it on July 1 and found it empty and partially destroyed. The incubating bird of nest number 2 was observed on every visit and the nest itself frequently examined. Eggs were still present on July 4 (a total of 31 days of incubation to this date), but on July 10 it was empty except for one or two fragments of shell. Undoubtedly the eggs had hatched between July 4 and July 10 and something had destroyed the young. A discussion of the possible offender will be undertaken later. Nest number 3 was not observed on every visit, but the incubating bird was occasionally seen as she deserted and, because the tree, on a steep slope, allowed one to get above the nest without removing oneself far, she could be observed on the nest if one approached near enough. The incubating bird was seen on this nest on June 3, 30, and July 4; but on July 10 the Kite was not

on the nest but hovering over it in a very solicitous fashion. It is probable that the eggs hatched between July 4 and July 10, as they did for nest number 2. Lester Hannibal climbed to this nest on July 23, to find four young, three considerably larger than the fourth. The largest was approaching a fully fledged condition, the smallest was still in heavy bluish down. He again climbed to the nest on July 25, brought the smallest and the largest to the ground and made measurements and notes before replacing them.

On July 27 the writer, with Lester Hannibal, visited nest number 3. Mr. Hannibal climbed the tree and let the four young Kites down in a sack. On the ground photographs and observations were made. The smallest was still in heavy bluish down and the others, though fully fledged, showed slight gradations as if there might be a difference in their ages as well as between them and the smallest. (See fig. 78.)

On July 31 Mr. Hannibal again climbed to nest number 3, whereupon two of the nestlings flew off. One essayed a 200-yard flight, was captured and measured. The retarded or smallest nestling was losing its down, and feathers were conspicuous.

On August 5, Mr. Hannibal climbed to the nest. The third nestling left, but the smallest was captured and measured. And for the last time, on August 10, the tree was climbed by Mr. Hannibal and measurements were secured of the last nestling, then in the nest ten days after the first had gone.

Though no systematic attempt was made to follow growth of the Kites, the measurements procured by Mr. Hannibal have a few points of interest and are given in the following table. Chiefly to be noted is the retarded development of one of the nestlings, called "smallest".

MEASUREMENTS OF NESTLING KITES OF NEST NO. 3					
	Date	Extent	Length	Tail	Extent of one wing
largest	July 25	68.5 cm.	28 cm.	7.3 cm.	45.2 cm.
smallest	July 25	28 cm.	16.5 cm.	....	12.8 cm.
one at nest— leaving	July 31	75 cm.	.....	....	.....
smallest	Aug. 5	51 cm.	25 cm.	4 cm.	.....
smallest	Aug. 10	64.5 cm.	26.5 cm.	7 cm.	.....

Similarly, his records of coloration of a nestling Kite shortly before nest-leaving merit inclusion: breast, yellow brown; wings beneath, white; wings above, blue gray; crown, mottled brown and white; tail above, light gray; back, yellow-brown; toes and tarsus, yellow; beak and claws, black; eyelids, blue; iris, brown. These notes were made by Mr. Hannibal in the field without recourse to any color standard. For their general accuracy the author can vouch from subsequent handlings of the fully fledged young. It is interesting to note that the iris color was markedly brown, whereas that of the adult is red. However, Allan Brooks' painting of a young Kite in Dawson's "Birds of California" (facing page 1648, Booklovers Edition), though otherwise quite accurate, has the iris red. It would be of some interest to know when the red coloring of the iris is acquired.

General activities of adults. The White-tailed Kite is one of the most beautiful and graceful of all raptorial birds and if it does not have the dash and vim of the falcon, still it compensates with a buoyancy and ease of flight that one would scarcely expect in a bird of its size. Hudson (1920), in his "Birds of La Plata," gives one of the prettiest of all word pictures in his short article on the "White Kite" of Argentina. He writes: "It delights to soar like the Martins, during the high wind, and will spend hours in this sport, rising and falling alternately, and

at times, seeming to abandon itself to the fury of the gales, is blown away like thistle down until, suddenly recovering itself, it shoots back to its original position. Where there are tall lombardy poplar-trees these birds amuse themselves by perching on the topmost slender twigs, balancing themselves with outspread wings, each



Fig. 79. WHITE-TAILED KITE IN "STAND" OVER NEST IN VALLEY OAK.

bird on a separate tree, until the tree-tops are swept by the wind from under them, when they often remain poised almost motionless in the air until the twigs return to their feet."

It was this quiet hover or "standing still" in the air that gave the writer his opportunity for the photographs of the adult above the nest (fig. 79). By using

a view camera with a long bellows, a twenty-inch lens and extremely fast cut-film, the photographs were secured from the ground at a distance of about forty feet from the nest. Here, working from a blind made of valley oak and California coffee-berry limbs, the whole covered by canvas, exposure after exposure was made as the adult now and then made a momentary "stand" above the nest. Not always did she come in thus, but frequently enough to encourage persistence in photography.

As far as one can see the faintest outline of its silhouette a Kite is identifiable. No other bird flies so characteristically with wings, whether in beat or sail, at the peculiar angle that a Kite maintains. This is not a set of wings in a straight line such as a large hawk or gull maintains in sail, but that with wings slightly raised and down-curving at the tips. No other hawk flies like this, indeed no other California bird.

The Kites have a quirk of temperament that sends them persistently at other large birds. Thus Ray (1904) speaks of their "tireless energy driving away California Crows" from their nest sites. But Peyton (1915) intimates that the Kites he observed were subject to "persecution by the Crows". However, the large soaring hawks are the chief objects against which they constantly contend. De Fremery (1929) describes the attack of a Red-bellied Hawk by a Kite near Olema, Marin County, and the writer has seen them frequently dashing upon Marsh, Red-tailed and Swainson hawks. In fact many of our records of Kites have come about because our attention has been drawn first to a large harried Buteo in the distance and glasses showed there not only Buteo but Kites above swooping down, one, then the other (Kites are nearly always in pairs), in huge parabolas reaching a hundred feet or more above the harried giant. Down one comes with a rush and swings up again. Immediately after, the other one drops, then up, and so around and around they alternate until the distance and blue swallows up Buteo and tormentors. This game is played the year around, in the breeding season and out. Perhaps, as with the excitement that small birds display over the discovery of an owl, there may be a meaning in the Kites' pugnacity. It may well be that the contents of the Kite nest, in the very top of its oak, concealed from below but completely exposed from above, are a temptation to these big hawks the Kites so persistently annoy. If so, then there is something of significance in the fact that Turkey Vultures, though they have always been, in the Kite territory, more numerous than all other large birds, are never molested.

The leg-dangling habit of the Kites is one of their most conspicuous oddities. On the nesting territory the protesting birds flew here and there nearly constantly, uttering their cries, beating the air slowly with short strokes, the wings held up at a sharp angle above the back, the legs dangling from a point about the center of the body. If the incubating bird is the female, then these leg-dangling birds are the males. (See fig. 80.)

On the Slatore ranch there were more Kites than nests accounted for. Students of mine, scouting the territory thoroughly, found two or three empty Kite nests. Whether these were nests formerly occupied or were "dummy" or cock nests is open to question. In any case most of the supernumerary birds were males, judging from their actions. They spent a great deal of their time in flying at each other in unsanguinary play, perhaps in territory protection, or in flying here and there with calls and leg-dangling protest while a human intruder was near.

The Kite hunts, not by soaring and searching from a lofty position as do Buteos, nor by the low harrier method of the Marsh Hawk, but by a rather erratic scouting from a position intermediate between these two. When prey is seen the bird

"stands" with wings quiet if the air is moving sufficiently to permit it to "kite", as its name would intimate its habit to be, or beats the wings slowly from an angle well above the back. During such a stand it drops its legs. If it stoops it makes no falcon drop of lightning speed with wings drawn in to a thin wedge along the sides of the body, but keeps them up in a V angle above and slips down with legs hanging and at a speed one would never guess was more than fast enough to catch a snail. But that they do catch prey, some of it very agile, there is no doubt. And that this method is used to catch it there is no doubt either, for they have been observed to do so.

On January 26, 1929, at the Los Altos Country Club, a Kite was seen to drop in the manner above described and fetch an object (perhaps a field mouse) from the



Fig. 80. WHITE-TAILED KITE ABOUT TO ALIGHT ON NEST.

grass. Williams (1929) describes such a habit on the part of the Kite and calls it a "little courtship act". It is possible that the leg dangling and stoop may, on occasion, be used in some such sense.

Reactions of adults and young to an intruder. Raptorial birds make a sorry matter of nest protection where humans are concerned. Such large and otherwise self-sufficient birds have never been forced by necessity to develop those striking methods of protection as the "abandonment-concealment" or "distress-simulation" that are such amazing features of most ground-nesting birds. Their solicitude does not even go to the extent of noisy distraction display that birds, otherwise deficient in nest-protective instincts, nearly always employ. Kites left their nests without protest or at best flew back and forth with mild cries of distress. Mr. Hannibal describes one instance wherein an adult bird swung near him as he approached nest and young. Only rarely did they come near.

Various egg-collectors have the following remarks to make of incubating Kites: Birds sometimes fly quickly away, again will hover over nest and utter sharp piercing

cries from time to time (Evans, 1887); Kite arose from nest but returned, sat on an oak and plumed feathers with apparent indifference while the eggs were secured (Taylor, 1887). Bird left nest when I was at quite a distance, quietly flying off to a nearby tree. When I had nearly reached the nest it would fly toward me and, when about 20 or 30 feet above me and nest, would balance itself in air as Sparrow Hawks and Bluebirds often do and with legs hanging down would utter its distress note a few times and then fly away probably not to return again but simply to watch me from some tree top several rods away (Bendire, 1892). Barlow (1897) describes an exceptionally aggressive pair wherein the male swooped down at him in a "furious manner", occasionally reënforced by the female. Others merely flew about uneasily, uttering their "plaintive whistle". Ray (1904) apparently mistook the peculiar leg-hanging as an evidence of distress simulation in nest protection for he writes, "as I ascended the tree the Kites began flying in an injured manner to draw me away". This is, undoubtedly, a misinterpretation. The remainder of his description of adult reactions is similar to the others here quoted except that he describes a case, as does Barlow (above), wherein the birds swooped at him as he climbed a tree that did not contain a nest but, as he ascended the tree that did, the Kites retired to a dead tree. Peyton (1914) writes that the adults deserted the nest when he approached within 50 to 60 yards.

The most precise statement one can make of the solicitude display of these mild birds is that it is variable but unimpressive. For instance, though the incubating bird of nest no. 2 allowed us, on the first two visits, to walk beneath the nesting tree before the bird deserted, on subsequent visits she deserted when I was at least 100 yards away. Indeed she had gone often before I was in a position to observe the nest. That she had been there recently was proved by the warmth of the eggs. Also during my attempt at photography the bird came into the nest with greater reluctance each day though the blind was made more and more effective. Experience with many incubating birds would lead me to have expected the reverse of this. The incubating bird of nest no. 3 frequently allowed approach close enough for her to be observed clearly upon the nest (the steep hill allowed one to get above the nest while yet within a hundred yards of it), but usually then deserted when the intruder was 75 to 100 yards away, leaving without a protest. As previously stated, a complaining Kite, or Kites, was usually to be seen beating slowly here and there over the nesting territory while an intruder was in evidence, and it is probable that these were males.

Peyton (1914) and Williams (letter) are the only references I have that mention nestling Kites. Peyton noted nestlings of two nests and makes the one remark concerning their reactions that they "manifested some uneasiness if we came very close." Unfortunately, at the first visit to the young in nest no. 3, they had advanced to a stage wherein they expressed distinct fear with the attendant defense-reaction. Thus no observations of the acquisition and evolution of these instincts can be given. However, a description should be of some interest.

If the adult Kites (and many raptorial birds) are deficient in nest-protective instincts it does not follow that the young are deficient in self-protective instincts. If they do not have that remarkable crouch-concealment or "freeze" of the young of ground-nesting birds, still they have more effective protection than the aimless flutterings of many young passerines. As might be presumed this consists of a highly developed "intimidation display". At first approach the young Kite spreads wide the wings and backs off with mouth agape (fig. 81), emitting a rasping note. If the tormentor persists, the bird thrusts its feet forward with a resultant dropping back

upon the tail. The third and last stage is to drop completely on the back and to present the most impressive weapons a Kite has, the talons (fig. 82). That this is purely an instinctive response to fear is proved by the fact that the nestlings would execute this maneuver when they had not yet learned to bite a finger thrust into their wide gape and clutched but weakly with their claws when an object was put into their grasp. Just prior to nest leaving they learned to use their beaks, and



Fig. 81. THE FIRST STAGE IN SELF DEFENSE WAS TO OPEN THE MOUTH ENORMOUSLY AND TO SCREAM.

their claws had, by that time, become very effective. However, never did they develop the venomous claw thrust the young of the Barn Owl are capable of at the climax of their similar reaction.

Calls and notes. Taylor (1889), Barlow (1897), and Peyton (1914) call the notes of the Kite a "whistle", "plaintive whistle", or "low, plaintive, musical whistle". Taylor adds, "like a Western Meadowlark". Evermann (Bendire, 1892) describes the note as a broken cry or scream. And Dawson (1923) writes that

the note is miscalled a "whistle" and he transcribes it as "*clewk, clewk*". Hudson (1920) calls the notes "long, distressful cries."

The notes are several in number and no one word or term describes them all. The most frequently uttered is a spasmodic short whistle: *kēēp, kēēp, kēēp*. At a distance it sounds like *chīp, chīp, chīp*, or *kīp, kīp, kīp, kīp*, or even more chicken-like, *chēēp, chēēp, chēēp*. This is the note that is given as the birds beat slowly here and there with legs dangling, and it expresses the mildest solicitude. Undoubtedly Dawson (1923) means this note with his "*clewk*". The next is more highly pitched and longer, a "plaintive whistle" in truth. It may be transcribed as *krēēk* or *krēē-ēēk*. It may be as repeatedly and rapidly uttered as the former and expresses greater solicitude. The last and most solicitous, uttered usually only when an intruder is climbing the tree to a nest, is a prolonged *kēē-rāk* or *kēē-rēk*. This note comes at the end of a series of *kēēp* notes. Its terminus is lower and almost guttural, reminding me much of the whang of a focal-plane shutter. The notes of the young

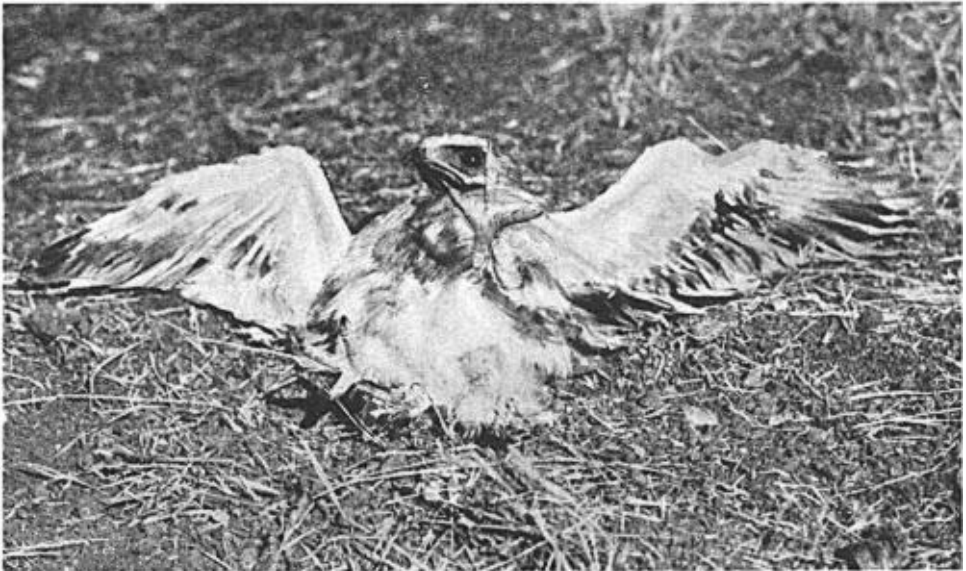


Fig. 82. THE CLOSE OF THE INTIMIDATION DISPLAY CAME WITH THE NESTLING KITE ON ITS BACK AND THE TALONS DISPLAYED.

are two. They have a mild, high-pitched *krēē-ēēk* like the adults, and when at the height of their intimidation display they have a harsh scream uttered with the mouth enormously agape. This reminds one much of the rasping scream of the Barn Owl.

Food. Compared with the extensive data of foods that may be uncovered for most hawks, those for the Kite are meager indeed. Cooper (1870) states that the Kites' food consists "entirely of mice, gophers, small birds, snakes, etc.," but does not state his evidence. Similarly Barlow (1897) mentions gophers, field mice, wood rats, and lizards, but does not inform us how he secured his information. Fisher (1893) quotes Audubon as recording remains of birds in two stomachs and adds such general remarks as "small snakes, lizards, frogs and beetles." The only concrete evidence he records is that of a field mouse from a single stomach. Dawson (1923), without stating his authority, lists rats, snakes, gophers, mice, a few frogs, crickets and grasshoppers. Miller (1926) made a careful examination of a

Kite stomach and found there an exceptional volume of about 130 cubic centimeters of food consisting of the remains, in large part, of four meadow mice and an entire shrew (*Sorex ornatus*). Peyton (1914) reports that H. W. Carriger found a freshly killed ground squirrel in a tree beneath a nest. The writer found a ground squirrel (*Citellus beecheyi*) under similar circumstances. In addition eight pellets, removed from the nest with young, had remains of five skulls of the meadow mouse (*Microtus*).

Records of the Kite in the Santa Clara Valley from 1925 to 1930. In addition to the observations of nesting birds above recorded I have at hand the following additional dates and places: November 19, 1925, Los Buellis Hills (east from Milpitas), one bird; January 9, 1927, Loyola Corners (San Antonio Township), three birds; March 20, 1927, Arroyo Calero (approaching Llagas Valley), one bird; April 9, 1927, Agnew, two birds; April 13, 1927, Loyola Corners (San Antonio Township), one bird; February 26, 1928, Coyote Hills (east end of Dumbarton Bridge), one bird; March 17, 1928, Loyola Corners, three birds; April 18, 1928, Silver Creek Hills (near Evergreen), one bird; June 30, 1928, Coyote Creek (about four miles north of San Jose), three birds; July 28, 1928, divide between Arroyo Calero and Llagas Valley, two birds; July 29, 1928, Alviso marshes, two birds; August 12, 1928, Menlo Park (San Mateo County), two birds; November 3, 1929, Loyola Corners, three birds; December 22, 1928, Coyote Creek (near Milpitas), two birds; January 26, 1929, Los Altos country club (San Antonio Township), two birds; January 26, 1929, Los Altos hills (two or three miles south of Los Altos), three birds; August 19, 1929, over Stanford Stadium, one bird; October 26, 1929, Trimble Road and North First Street, San Jose, one bird; January 25, 1930, Arroyo Calero, one bird.

Paucity of records for the spring and summer of 1929 is accountable for, in part, by the absence of the writer from the state from mid-June until September and also because some Kite-favored territory was not visited. On the other hand, absence of Kite records in the region between San Jose and the Bay is unaccountable, for many trips were made into this region. Mr. J. A. Slatore informs the writer that Kites were present on his ranch during the summer of 1929 and probably nested there.

With two or three exceptions the above records have not been previously published and their inclusion here presents two points of interest: first, the regions of the Valley that the Kites frequent and, secondly, an opportunity for an estimate of the total number of birds now in the Valley.

To one acquainted with Santa Clara Valley the rather numerous records above (with one or two exceptions) quickly become associated with four regions, each distinctly separated from the other. These are: 1, Los Altos and Palo Alto in the northwest corner; 2, San Jose and Alviso in the north central; 3, Evergreen and Silver Creek Hills in the center; and 4, the upper regions of Arroyo Calero and Llagas Valley (Las Uvas Township) toward the southwest corner. Excepting only region number 2, these are all areas of rolling hills with sparse coverings of scattered trees. Region number 2 is lower valley of diversified farming with many orchards, two creek beds with their typical borders of box-elders, cottonwoods, willows and occasional eucalyptus, all terminating in the salicornia marshes of San Francisco Bay. Kites hunt over hill and surrounding valley fringe and, in region number 2, over orchard, meadow, creek and marsh.

Field work from the State College at San Jose, covering practically the entire Valley at frequent intervals, has disclosed no other areas than these listed above.

¹ For records prior to April 18, 1928, the writer is indebted to Miss Emily Smith.

Let us estimate that an average of four pairs of Kites (too high an estimate for some, too low, perhaps, for others) frequents each. We have then sixteen pairs of Kites in this entire valley. Twenty pairs, forty birds, would, I feel convinced, account for every Kite from Gilroy to the Bay and from Mount Hamilton to the summit of the Santa Cruz Mountains.

The records have one other point of minor interest. The birds have been recorded from the same region during all seasons of the year, thus showing their resident nature. Indeed, it is apparent that they probably do not venture over territory more than a few miles in diameter in an entire lifetime. In the light of this knowledge the naïve nature of the remark by Taylor (1889) that on February 19, 1889, he took a walk into the country near San Jose to see if the White-tailed Kite "had yet arrived from the south" becomes at once apparent.

The future of the White-tailed Kite. An account of a beautiful, impressive and characterful bird would not be complete did it not pause, in the last paragraphs, to consider for a moment the future of that bird. Whether the Kite has been, is now, or soon will be on the verge of extermination is a question of intense interest to every lover of birds. To one who has watched them by the hour, has, in fact, lived with them, their future is more than a matter of interest—it is a matter of intense emotion.

And yet one cannot predict the future except upon the evidence and statistics of the past. With the Kite, as with all birds, these records of the past are, at best, vague and questionable. Was the Kite ever numerous? If so, when? If the Kite has been seriously reduced in numbers within recent years, how? If the Kite is recovering at present, where is it staging such recovery and why?

I have just two records that indicate that the Kite may once have been numerous in California. Cooper (1870) records it as "abundant" in the middle districts of California, remaining in large numbers during winter in the extensive tule marshes of the Sacramento and other valleys. The second record of numbers is that of L. Belding (Bendire, 1892) who considered it a constant and common resident near Stockton, California, he having seen as many as twenty at the same moment. Nevertheless, B. W. Evermann is quoted in the same account (Bendire, 1892) as considering it "not at all common" and he was including Santa Paula, the San Buenaventura marshes, and Santa Clara Valley. Taylor (1889), as previously noted, considered the Kite, even at that date, rare and becoming rarer about San Jose. Was the Kite common from Stockton to Sacramento and nowhere else? If these accounts are reliable and the paucity of recent records from that region any evidence, then the Kites were certainly more numerous then than now.

That the Kite has been reduced seriously is intimated by Grinnell (1914) and by Dawson (1923). Perhaps they based their statements upon the conditions in the lower San Joaquin Valley. The case for Santa Clara Valley is not so clear. Excepting the remark of Taylor (above cited) no other writer bothers with an estimate of relative numbers.

Taylor (1889) attributes destruction of the Kite to the fact that its "conspicuous and pleasing plumage with its singular trust in the kindness of man, makes it the easy prey of every careless farmer and designing pot hunter". I should, for Taylor's day, substitute the word "egg-collector" for "pot hunter". Taylor himself took two sets the while he lamented the Kite's scarcity. Parkhurst (Bendire, 1892) took three sets from the region of San Jose, and Barlow (1897) took no less than nine sets from Santa Clara County, three of which were "second" sets, most destructive of all egg-collectors' loot! Grinnell (1914) is convinced that the

"present rarity" of the Kite is due to its associational preference for marshes where it is an easy target for the thoughtless gunner. The present condition in the San Joaquin-Sacramento marshes no doubt proves it. A thoughtless gunner took one of the Kites from the Slatore ranch the fall of 1928 and presented it to Mr. Slatore with a request to be told what the "funny bird" was. Mr. Slatore's answer, to one who had shot a friend of his, is unprintable. This bird was not over a marsh but in the hills.

Where the Kite is increasing in numbers is a bit difficult to say. To mention a place is to presume it was once more numerous there and evidence for that is usually merely an impression. In Santa Clara Valley as a whole I can find no evidence of change in Kite numbers. I have, however, a clear-cut record for another place. Laidlaw Williams (1929, and in a letter to the writer) records the Kite's return to the Carmel Valley where it nested in 1928, having been extirpated from the region some years before.

What the situation is in Sonoma County, for instance, where Evans (1887) found his many nests on the Russian River, the writer cannot say, nor are records sufficient to make a statement for Marin or Solano counties. Mrs. Marjorie Howell wrote me on May 4, 1929, that Kites were nest building about mid-April that year three miles east of Santa Rosa in Rincon Valley, Sonoma County. It is to be hoped that here the Kites end each year with at least the number they started with.

Our questions, then, are but partially answered. The Kite was certainly more numerous in San Joaquin and Sacramento counties forty to sixty years ago than it is now. In other regions where it was present, especially in marsh districts, undoubtedly it has been seriously reduced in numbers. The condition in hill sections inhabited by it can be but guessed at. Here it probably has suffered least. Gunners can be held chiefly accountable wherever it can be proved to have been reduced recently. Man is responsible to a less degree through change of breeding territory. The Kite, if it is recovering, is doing so because of greater protection from shooting. Where it is recovering (or at least where it is now in greatest numbers) seems to be in those hill regions where its ancient strongholds were and the Santa Clara Valley is perhaps the chief among them. Evans (1887) believed (though he did his chief collecting in Sonoma County) there were "as many in Santa Clara County as anywhere else".

What the future of the Kite will be no less than an oracle can tell. I asked Mr. W. H. Hannibal, an early settler in the region north of San Jose, a region where Kites still persist, how numerous Kites were there fifty years ago. He replied "never more than one to two pairs". Yet several Kites might nest in close proximity. Hudson (1920), though stating that the White Kites were present throughout the Argentine Republic, adds, "nowhere numerous". The problem is perhaps that of a dying species. Not man alone but Nature in general, to which the Kite has never adjusted itself for success in numbers, has marked this bird for early extinction. If we could explain what forced the Kites to nest into July, what destroyed two or three nests on the Slatore ranch (can other hawks be the fault?), what destroyed the nests Peyton (1914) and others tell of, then perhaps we could tell how Nature is working to this end.

SUMMARY

White-tailed Kites were found breeding, in the summer of 1928, in the Silver Creek foothills of the Mount Hamilton Range, Santa Clara County, California.

The three nesting trees observed formed a scalene triangle 320 by 200 by 175 yards, thus placing the nests, for raptorial birds, unusually near one another.

The nesting trees were valley oaks (*Quercus lobata*) and a coast live oak (*Quercus agrifolia*). The heights of two nests were estimated to be about thirty feet, the third, measured, was fifty-nine feet above the ground.

The nests were loose piles of dead sticks in the uppermost branches. Linings were chiefly of straw.

The nests were first observed on June 3, 1928. A resume of the literature, giving nesting dates, indicates that these were probably second broods, certainly second or third sets.

Nest number 1 was destroyed by unknown agencies. The eggs of nest number 2 were incubated for a known period of thirty-one days, but the young were destroyed shortly after hatching. Nest number 3 was vacated by its nestlings between July 31 and August 10. The young of this nest presented a great discrepancy in development, whether from differences in age or differences in amount of feeding is not known.

Adult Kites have unique habits of hovering, leg-dangling and wing posture in flight.

Adult Kites persistently fight large hawks. It is suggested that these hawks may, because the nest of the Kite is exposed above, be responsible in part for destruction of nestling Kites.

The Kite procures prey by erratic harrier methods at a height intermediate between those customary for Marsh Hawk and Buteos. The prey is secured by stooping with legs dangling and wings lifted over the back.

Adult Kites have no elaborate means of nest protection. The incubating bird usually abandons the nest when a human intruder is from seventy-five to one hundred yards distant. Males and females (?) then fly about with legs dangling and with mild distress notes.

The calls and notes of the Kite are three in number, expressing various degrees of solicitude: *chīp*, *chīp*, or *kēēp*, *kēēp*, *krēē-ēēk*, and *kēē-rāk*.

The nestlings have the usual self-protective reactions of raptorial birds. This is an "intimidation display" consisting of three stages: 1, spreading wings and opening mouth; 2, thrusting forward of the claws and dropping upon the tail; 3, dropping over on the back and presenting the talons.

One note of the nestling is a *krēē-ēēk*, like that of the adults, and the intimidation display is accompanied by a Barn Owl-like scream.

With one or two exceptions, references in the literature are, with respect to the food of the Kite, unconvincing. The writer found a squirrel (*Citellus beecheyi*) beneath the nest and *Microtus* skulls in the pellets.

In Santa Clara Valley there are four known stations frequented by White-tailed Kites. Three of these are in the foothills and one in the lower valley not far from the Bay.

It is estimated that between sixteen and twenty birds constitute the entire population of Kites in the Santa Clara Valley. There is evidence, from the literature, that the Santa Clara Valley has as many or more than any other equivalent region in California. Counties immediately north of San Francisco Bay are the next most abundantly inhabited, it appears.

The literature indicates that the Kite was once more numerous than now in the San Joaquin and Sacramento valleys. The situation for other regions is not clear.

Gunners, more than alteration of breeding territories by man, are believed to have caused reduction of Kites where such can be shown to have occurred.

This Kite is probably a dying species, never within historical times having predominated as such raptorial birds as the Desert Sparrow Hawk or Red-tailed Hawk for instance.

The causes for lack of the species' success are: 1, lack of proper protective responses; 2, probably the exposed nest; 3, possibly also poorly developed food-getting habits; 4, other causes not now understood. It has a range of nesting habitats sufficiently versatile to eliminate this as an important factor in its biological economy.

The White-tailed Kite may persist for a long period, even increase slightly, under proper protection.

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