

## DIURNAL BIRDS OF PREY OF BELIZE

by Dora Weyer

### The Accipitridae

Belize is a small country south of the Yucatan Peninsula on the Caribbean Sea. Despite its small size, 285km long and 112km wide (22,963 sq km), Belize encompasses a great variety of habitats: mangrove cays and coastal forests, lowland tropical pine/oak/palm savannas (unique to Belize, Honduras and Nicaragua), extensive inland marsh, swamp and lagoon systems, subtropical pine forests, hardwood forests ranging from subtropical dry to tropical wet, and small areas of elfin forest at the top of the highest peaks of the Maya Mountains. These mountains are built of extremely old granite overlaid with karst limestone. The highest is just under 1220m. Rainfall varies from 1,524mm in the north to over 4,000mm in the south.

Belize is unique because it is the one country in central America that is underpopulated, with only 160,000 people, roughly half of whom are concentrated in eight cities and towns. (El Salvador, with approximately the same area, is struggling under a population of some six million). This means that much of Belize's area is still wilderness, particularly in the Maya Mountains, which are severely eroded.

Belize, therefore, still serves as a reservoir for many of the endangered species of central America – jaguar, ocelot, jaguarundi, margay, Baird's tapir, manatee, great curassow, crested guan, white hawk, tyrant, black-and-white and black hawk-eagles, ocellated turkey, Morelet's crocodile, and, perhaps, the magnificent harpy eagle.

In this article I have attempted to bring up to date the data on Belize's kites, accipiters, buteos and other hawks, its three hawk-eagles and two eagles. The sequence and nomenclature follow the American Ornithologists' Union's 1983 "Checklist of North American Birds, 6th Edition". Several species, Swainson's Hawk (*Accipiter striatus*), Cooper's Hawk (*Accipiter cooperii*), Solitary Eagle (*Harpohaliaetus solitarius*), and Black-and-White Hawk-Eagle (*Spizastur melanoleucus*), are recorded for Belize for the first time. New information on distribution and abundance, and on habits, is also given here.

The **Osprey** (*Pandion haliaetus*) is well-known to our coastal people as the "billy-hawk". The rare *ridgwayi* is resident, breeding on the coastal cays. In fact, Osprey are abundant here, almost every cay with land above high tide has a resident pair. On May 3 and 4, 1971, Dr Eugene Knoder flew Dr Alexander Sprunt IV and myself in a small plane along the coastline of Belize to count nesting egrets, herons, etc. Because of the distance from shore and limitations of time, we did not cover Lighthouse Reef with four permanent cays (one of which, Half Moon Cay, I knew to have supported a pair of Osprey for many years.), Glovers Reef with four permanent cays where I know of three pairs, the Snake Cays, the extensive range of the Sapodilla Cays, the Ranguana Range, the Silk Cays or any of the other distant cays in the south.

Nevertheless, we located thirty-four active Osprey nests, all with eggs or young. The average number was three per nest. Henry Pelzl, who spent the month of June, 1968, studying birds on the cays, estimated 75 to 100 pairs offshore. Again, he could not get to many of the outer cays. It has been reported that the southernmost part of Osprey range here is at Dangriga (formerly named Stann Creek Town), a little more than halfway down the coast. On Mr Knoder's flight we found Osprey nesting out from Punta Gorda, well to the south.

Osprey also nest along some of the rivers inland. Dr Stephen M. Russell, author of *A Distributional Study of the Birds of British Honduras*, the only localized reference, in 1963, suspects that most of the birds seen inland are of the northern race, *carolinensis*, which winters here. For many years I have seen a pair of Osprey nesting by Little Falls on the Belize River, I have received a reliable report of a nest on the Upper Sibun River, and one or two Osprey are seen in all months of the year at Crooked Tree Lagoon. These birds have white breasts and are evidently *ridgwayi*.

The Osprey successfully hatch their eggs. DDT is used mostly for house spraying in the malaria control programme and is not used extensively for agricultural use. Apparently, the amounts washing into the rivers are not sufficient to affect Osprey eggs. Belize boasts seven species of kites, all of them nesting although two are not year-round residents. These seven form a mixed bag, each belongs to a different genus and some, such as the Snail Kite, have unkitelike wing shapes and fly in unkitelike fashion. Snail Kites, for instance, seem to me to fly like big herons. The seven are: Grey-headed Kite (*Leptodon cayanensis*), Hook-billed Kite (*Chondrohierax uncinatus*), American Swallow-tailed Kite (*Elanoides forficatus*), Black-shouldered Kite (*Elanus caeruleus*), Snail Kite (*Rostrhamus sociabilis*), Double-toothed Kite (*Harpagus bidentatus*) and Plumbeous Kite (*Ictinia plumbea*).

The **Grey-headed (or Cayenne) Kite** is large for a kite, with long wings bluntly rounded and a long rounded tail. It is a neotropical species, ranging from SE Mexico to eastern Bolivia, northern Argentina, Paraguay and southern Brazil. It also occurs in Trinidad. It is an uncommon species in Belize, found mostly in gallery forest along creeks and rivers in the lowlands. It is reported to occur as well in savanna elsewhere, but this is not true in Belize, possibly because our lowland savannas are unique, being dominated by pine trees.

The first one I saw, on Black Creek (now included in the newly-established Crooked Tree Wildlife Sanctuary), was the most unusual smooth, quiet grey. The head was soft blue-grey, the eyes, cere and bill exactly the same shade. The back and wings were darker grey, the underparts a whitish grey. Even the legs were blue-grey. Only the tail was blackish, but it had two bands of light grey and a narrow white tip. Later sightings proved that this individual was more uniform in colour than most; most have black eyes, a black bill and most have a blackish or at least very



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dark grey colour above, and some are all-white below. This first bird did not fly, so only later did I learn of this species' striking black wing linings and heavy black and white barred flight feathers below. Immatures come in two colour phases. The one I have seen most commonly has an attractive white head and neck except for a black crown spot, and all-white underparts including the under tail coverts. From below, the wing linings in the immature are white. I have seen the dark phase immature only twice. It looks smaller and vicious, bearing no resemblance to the adult or the light phase immature. The entire head and upper surface is black, the underparts white heavily streaked with black. The cere and facial skin are prominently bright yellow.

This species soars regularly and then the black wing linings are distinctive. I have more usually seen it perched quietly in a tree along one of the many forested creeks. In my experience, it is a quiet bird although I have heard it giving a trogon-like note repeatedly. It eats insects and is particularly fond of wasp larvae. It is also reported to take molluscs, frogs, including tree frogs, and bird eggs. I have not seen a nest, but the presence of immatures and year-round sightings indicate that Grey-headed Kites are breeding residents.

The **Hook-billed Kite** is a neotropical forest species ranging from northern Mexico south to Peru, Bolivia, northern Argentina and Paraguay and to parts of the West Indies. It is rare in Belize. Stephen M. Russell lists five records but it is probable that three of these made within five months of each other in 1957 at the same site are of one bird. In almost twenty years, I can add only two more records. Kathleen Anderson, founder and Director of Manomet Bird Observatory, saw one near the old Columbia Forest Station in 1972 and I saw a normal phase adult male on the Hummingbird Highway in the foothills of the Maya Mountains on December 27, 1983. This bird was attracted as I was searching for a small bird I had seen dart into the undergrowth. The kite came within three metres of me, to a low branch of a Cecropia tree, and leaning over alertly to watch me. This is in a wet area, at least 2,790mm a year, and Columbia Forest is much wetter than that. These are the two areas that I have watched birds most intensively. The NW forests of Belize, where Russell's three records were made, are essentially dry forests with rainfall less than half that on the Hummingbird. It would be interesting, since little is known of this kite, to analyse distribution records in respect to rainfall and forest type.

Hook-bills are fairly small, 380 to 420mm in length. There is considerable colour variation, but always the eye is white or very light yellow, the cere and bare facial skin is conspicuously green except for a small yellow spot just in front of the eye. The feet are orange-yellow. The bill is distinctive, long, slender (in our area; a heavier billed variant is known elsewhere) and deeply curved, much like that of the Snail Kite, *Rostrhamus*. The maxillia is black, but the mandible is dull green. The usual male colour phase is slaty-grey above with grey-barred underparts, the tail

darker with two light grey (whitish below) bars. The usual female has a grey head, a narrow rufous collar around the hindneck. She is brown above and narrowly barred rufous and white below. In the less common black phase adult, both male and female are all black and the tail has only one light bar. The usual colour immature, which I have yet to see, is blackish above, white below, with a white collar around the hindneck and there are three whitish bars on the tail. The black phase immature is brownish black overall, many of the feathers tipped with light rufous.

The food is generally listed as tree and land snails, but there are records of the large aquatic apple snail (*Pomacea* sp.) being taken and Frank B. Smythe records these as being its primary food in Tikal. It is also known to eat frogs, salamanders and insects. Alexander Wetmore describes one as being attracted by his bird "squeaker", and the bird that flew to me on the Hummingbird Highway was definitely attracted by my searching. Raptors attracted by such noises are usually bird-eating species.

I have never seen a nest and the only record I know is Haverschmidt's description of one in Surinam (*Jour. für Ornith.*, 105:1:64-65.).

The **Swallow-tailed Kite** is the most graceful of flying birds in the New World, to my mind even exceeding the Magnificent Frigatebird and the Red-billed Tropicbird in beauty of flight. It ranges farther north than most of our kites, nesting as far north as South Carolina, and is known to have formerly bred over much of the eastern United States. To the south, it reaches northern Argentina. It is common in Belize, arriving from the south from mid-February to early March, nesting here, then moving south again after the young are flying well in late July or early August. Swallow-tails arrive in small flocks with Plumbeous Kites, flying high in the daytime, sometimes circling and feeding as they travel. Twice I have been lucky enough to be on the high open hill at Columbia Forest Station as they came over.

This is not only the most graceful of all raptors, but also the most beautiful. The bird is large for a kite, 500 to 630mm in length. The wings are unusually long and pointed. The tail is long and deeply forked; Dr Amadon says "more so than in any other bird of prey". The head, including the hindneck, and the entire underbody and the wing linings are shining white. The back, wings and tail are black, when close one can see a greenish gloss over the back and shoulders. The bill is very small for the size of the bird and black, as are the eyes. There is no bare facial skin. The feet are small. Swallow-tails soar much of the time and, seen from below, are strikingly marked. Immatures are also unmistakable, but are duller and the feathers of the head, throat and breast have light brown shaft streaks.

They apparently feed only in flight. I have watched them many times circling and diving as they grab a flying insect in one foot or the other, bend the head to bite it and swallow it in flight. They are reported to take bird eggs and young in the nest, but this I have not seen although I once watched Kiskadees drive

away a Swallow-tail. It may have been after their nest which was unusually high and exposed on a pine branch. I have also seen one take a small *Anolis* lizard to its young and I have heard of one taking a small tree snake. But day in and day out it circles and soars high in the sky after flying insects, usually in small groups. Even during nesting season, birds from several nearby nests will hunt together.

In late April, 1969, the ranger at the fire tower at Augustine Mountain Pine Ridge Forestry Station suggested I climb his tower when I asked if he had seen any nests of Swallow-tailed Kites. On reaching the top, he pointed out five active nests. I doubt any one was more than 150m distant from another and they formed a little nesting colony. At other times in the mountain savanna I have seen only a single nest, but in that hilly country covered with dense pine forest I could easily have missed neighbouring nests. Since one usually sees four, five, six or seven hunting together during the breeding season, I wonder if most Swallow-tails do not nest in small colonies like the one I could see from the fire tower. In the following year I again climbed the tower and could find only three nests although I was fairly certain a fourth was behind a small hill. In later years none were visible there.

The nest is relatively small, appearing from below to be 310 to 380mm across. The nests I have seen were all high in pine trees 20m or more above the ground. I have often seen Swallow-tails carry twigs to the nest. The bird will break off a piece of dead twig, if to the wrong size it will discard the twig, but if it is satisfactory, it will carefully balance it in its bill and carry it to the nest. The earliest date I have for this is March 23, 1971. Both parents bring twigs and work them into the nest. Swallow-tails also nest in hardwood forest but I have never been able to locate a nest under these conditions. For several years a small group of adults were seen from the Columbia Forest Station hilltop to spend their time during nesting season around a distant forest-covered hill and I felt certain that a nesting colony was located there.

The closest nest I saw from the fire tower that first time had two dark-blotched white eggs in it. Other times when I have been able to count young in a nest – not easy when they are so high – there have been two. The chicks are a creamy white fuzz.

The call, not as loud as might be expected, is a rapid series of high-pitched “scree-ee”s.

The **Black-shouldered Kite** was only “moderately common” when I arrived in Belize in 1965, two years after Stephen M. Russell’s last field trip in preparation for his checklist. He reported that no-one had found a nest in 1963 but that he suspected breeding. In 1966 and ’67, I found them nesting in both Cayo and Toledo Districts, but most were leaving Belize for the fall and early winter months. For several years after this, I was able to keep a careful check on a pair nesting on a farm near Punta Gorda. In the late summer of 1968 this pair left, returning in late January in 1969. By early February of that year several pairs had returned in Cayo District. That year the Punta Gorda pair remained all fall and

winter for the first time and four stayed all winter at Tennessee Aq Rice Farm. In 1971-72 they stayed again as did another pair on Mussell Creek in Cayo District. By 1973-74 most of these kites were in Belize all year and the population was rapidly increasing. Now Black-shouldered Kites are common to abundant, rivalling Roadside Hawks as the most common raptor in Belize. This same range expansion has occurred throughout suitable areas in central America in recent years.

They are found in the lowland savannas and in pasture areas cleared from hardwood forest. Fearless of humans, they move in as soon as the pasture is large enough to support them and the grass is kept short by livestock. I have not seen them in the open parts of the mountain savannas even though some of this is below 600m altitude. In Panama and south America I have seen them at higher altitudes and in time they may establish themselves in the mountains here.

This is a medium-sized kite, 380 to 405mm in length, a graceful flier and a beautiful species. It is a typical kite, with long pointed wings and a long square-tipped tail. Adults, both male and female, are mostly white below with a clear grey crown, back and upper wings. The shoulder is distinctively black. The eye is orange, set in a black socket; the bill is small and black. From below, the only black is a wrist spot and the primaries which darken towards the tips. The immature is light grey-brown above, and the breast is streaked with brownish.

This species hovers magnificently, the wings held at an angle and the tail spread wide. When it sights prey, it often holds the hover for minutes, then drops straight down, hovers, drops, and hovers again before the final dive. It can also, by changing the angle of the wings, slowly lower itself in a way I have seen no other species do. It spends a lot of time sitting in exposed positions where it can watch the ground, sometimes on a high branch, a dead stub or even a high telephone pole.

I find them all year long in pairs. Usually, if a single bird is seen hunting, another is not far away. Dean Amadon, speaking of this species in California where it is common, states they “roost and to some extent nest socially”. This is not true in Belize. Each pair establishes its own territory and, except when young of the year are with them, keep mostly to themselves. In Africa this species is considered nomadic, again I have seen no evidence of that here. Apparently it is very adaptable, and circumstances, perhaps a steady amount of prey over the year, have caused it to change its habits. A pair work together to protect a nest. I watched an Aplomado Falcon make repeated attempts to grab the young in one nest, and everytime he dived in he was beaten back by the two parents. Both parents would actually hit the falcon head on. After some five or six attempts, the falcon flew away. The main feed is small mice but I have so often watched them grab something from the grass that was too small to be even the smallest of our mice that I am convinced insects make up a large part of the diet.

The nest is built of twigs high in a tree, often in an

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isolated dead tree standing in open pasture. The nest is about the same size as that of the Swallow-tailed Kite. Although this species is listed in California as laying four or five eggs, I have never seen more than two young in a nest and often only one lives to fledging. Perhaps the reason for this difference is the greater abundance of food available to nomadic nesting birds which follow concentrations of prey as and where they occur in the US, instead of holding permanent territories as the birds in Belize do.

The **Snail Kite**, commonly called "Everglade Kite" in Florida and "Whelk Hawk" in Belize, is a large kite found over open fresh-water marshes and rice paddies. It ranges from southern Florida (mostly in the Everglades where only a few remain) south through central and south America to Bolivia and Uruguay, and to Cuba. It is rare in Panama, and in Costa Rica is limited to the Tempisque Basin in the northwestern part of the country. In Belize, with the extensive areas of marshy ponds and lagoons in the lowland savannas, it is an abundant species, and breeds in considerable numbers, especially in Crooked Tree Lagoon (in the new Wildlife Sanctuary) and at Big Falls Rice Ranch.

These are big kites, 400 to 450mm in length, with large broad wings that they beat slowly like a big heron. The male is dull black, the basal half of the tail and the upper and under tail coverts white. The deeply curved, slender bill is a distinctive field mark. The eye, cere, bare facial skin and legs are red in breeding season and pale watermelon colour the rest of the year. Females are blackish brown above, buffy mottled and streaked with darker below, the tail as in the male. The throat, forehead and, in our subspecies, *R.s.major*, a conspicuous superciliary streak are whitish. The immature is similar to the female but lighter above and more streaked below.

These birds feed entirely on the big round *Pomacea* snail. They course slowly, about twenty feet above the water. When one sights a snail near the surface, it swings down and grabs it with one foot, then carries it to a favourite perch to eat it. Sometimes it will perch on a low stump or even on the ground. The kite patiently holds the snail up in front with one foot, watching the snail intently with bent head – in the same posture as Rodin's "The Thinker" – and waits until the snail emerges. Then the bird quickly reaches in with that slender curved bill, and cuts the muscle holding the shell to the body. The snail then slips out easily and is swallowed.

This dependence on one food can be serious. In 1975 we had a longer dry season than usual and ponds and lagoons all over the northern and central parts of Belize dried up. The Snail Kites' favourite lagoon, Crooked Tree, dried up entirely. The lowest part of its dry bottom was covered with dead Snail Kites and Limpkins (another snail-eater). Even now, the Snail Kite population is still low in comparison to its numbers before this drought. The kite was apparently wiped out almost countrywide except at Big Falls Rice Farm where water from the Belize River was pumped through the extensive canal system and over

the rice fields, keeping the snails where the birds could reach them. Here a population of Snail Kites, Limpkins, Grey-necked Weed Rails and Boat-billed Herons as well as the resident egrets and herons survived. The Limpkins and Boatbills have in the last three years returned to normal populations, but Snail Kites and Weed Rails are still far fewer than normal.

A former student of mine, Jack Clinton Eitnair, studying Lesser Yellowhead Vultures at Crooked Tree Lagoon in 1983, when the lagoon again went dry although only briefly, made a fascinating observation. Snail Kites, with their short curved bills, could not reach the snails which had buried into the still-wet mud, but Limpkins, with their long pointed bills, could dig them out. He repeatedly watched Snail Kites grab snails away from Limpkins. He described how one kite landed full-force with both feet out on the back of a Limpkin which had just successfully uncovered a snail, knocked the Limpkin over on its side, and wrenched the snail out of its bill. Jack thought the Limpkin must be dead, but it staggered to its feet, shook itself and walked away. Fortunately rains came shortly and the kites survived.

I have never seen this species soar. When full of snails, these kites tend to gather together in low trees or bushes at the edge of the marsh. Once, a friend and I, before that 1975 drought, counted fifty-two on one small False Logwood tree. They also nest in small groups, ten to twenty nests near each other. The nests are small, 350 to 380mm across, fairly shallow, built of twigs. The colony at Crooked Tree Lagoon nests in and on top of a clump of False Logwood shrubs, no higher than three or four metres above ground. But the nesting colony at Big Falls built their nests twelve to fifteen metres high in an isolated stand of tall dead trees. They average two to three buffy chicks to a nest. These kites call a great deal, particularly in the nest colony. The voice is a low rattling cackle quite unlike most raptors.

The **Double-toothed Kite** is rare in Belize. Stephen Russell collected a specimen of this kite – the first record for the country – in 1963 near Augustine Mt. Pine Ridge. On May 5, 1971, Dr Alexander Sprunt, Dr Eugene Knoder, Mrs Bradley Fisk and I saw one in the same area, in the rain forest at about 420m altitude. It was sitting low in a small tree at the edge of the path, and repeatedly flying out a short distance, just like a flycatcher, to grab one of the big cicadas which were emerging in large numbers. The third record was made by my daughter and me on the Christmas Bird Count, December 26, 1977, in the rain forest along the Hummingbird Highway in the eastern foothills of the same mountains. A few days later, in the same spot, we saw three, two adults and a well-grown immature. Several sightings have been made along this part of the Hummingbird Highway since, notably on the Christmas Bird Count in 1980 when three were seen.

The Double-toothed Kite is another neotropical species, found from southern Mexico to eastern Bolivia and Brazil, and in Trinidad. It is far more common in Panama and Costa Rica than in northern

central America. It is found in or along the edges of rain forest. 290 to 330mm in length, it is, like many forest species, short-winged and in both shape and markings looks much like an accipiter. However, it seems to be a quiet bird, and unaggressive. Adult males are slate grey above, adult females are more brownish. Both are barred below, the ones I have seen are barred grey and white with only a wash of rufous, but others are barred bright rufous. The cere is green and the eye orange to orange-brown. When seen close, the white throat with a median black stripe is definitive. In flight, as it soars high overhead, the best field mark is the fluffy white under-tail coverts which extend out around the base of the tail. In flight it also shows three clear white bars in the tail. The immature is paler brown above and streaked below. The tail is like the adult and the throat is buffy-white with a median dark streak.

I have never seen a nest although obviously it breeds in Belize. I have seen an immature with its parents.

The genus *Ictinia* contains two species, the Plumbeous Kite and the Mississippi Kite. The latter breeds only in the U.S.A. and there are no records from here. The **Plumbeous Kite** breeds in good numbers, arriving from its wintering grounds in South America in late February to mid-March, and leaving again for the south at the end of July and early August. Coming north, it migrates in small flocks with the Swallow-tailed Kites. Biologist Morton E. Peck collected birds here in 1900-1901 and again in 1905-1907. His unpublished notes, as recorded by Stephen Russell, reported his seeing these kites in "immense flocks" in the autumn. We have no recent reports of this; perhaps their populations have dropped severely. The first time I saw this species migrating high overhead with Swallow-tails at Columbia Forest Station in the south, I did not recognise it until one peeled down from the flock in curiosity and flew close overhead, although by then I knew the species well. In ordinary flight the wing is pointed, but when migrating, this bird spreads the primaries wide and the wing appears rounded.

Adults are medium-sized, 290-350mm, kite-shaped with long pointed wings and a longish narrow tail. The male and female are alike, mostly grey, the head and upper back distinctly lighter in colour than the mantle, wings and tail. The tail is crossed by two narrow, somewhat interrupted, bands of white. The outer halves of the primaries are rufous and in flight the tip of the wing is definitive. The eye is bright red and the lores and a mark around the eye are black. The legs are reddish. The immature is dark slate above, the head and neck feathers edged with white; white below streaked with brownish-grey and the tail with three white bands.

These kites do nest in the lowlands; a pair has nested for many years on a pine tree near the top of the cliffs along the Sibun River at Gracy Rock Village, a pair nested at Altun Ha in 1970, and on June 10, 1972, I watched a pair feeding two half-grown young in a nest in a pine tree on the Southern Highway not more than five miles from the coast. They are reported to nest in

mangroves in El Salvador but none do so in Belize and they are never seen along the coast. However, our Plumbeous Kites nest abundantly in the Mountain Pine Ridge in savanna and at the edges of the rainforest at 360m to 510m altitude. In a day's bird watching one can easily find four to six active nests in season. The small nest is much like that of the Swallow-tailed Kite, perhaps a bit more carelessly put together, 20m to 27m up, usually in the crotch of a tall open tree allowing the birds a clear view out in any direction. Both parents bring small twigs for the nest and both feed the young. They raise one, two, sometimes three at a time. The feeding parent brings a good-sized flying insect to the nest, then tears it into small bits. One parent is always on guard close to the nest, and the other, soaring to find insects, is never far away. Both will attack any large bird coming too close to the nest.

These kites feed almost entirely on large flying insects, soaring much of the day as do Swallow-tails. When they close on one, they also reach out with a foot to grab it, then, lifting the foot and bending the head, transfer it to the bill. Watching the number of these two species hunting successfully over the forests, one is impressed with the number of large insects that must be flying high in the air; and, with the value of these two species in keeping under control the several species of large grasshoppers which have in the past multiplied into a "plague of locusts".

**Northern Harrier** (also Hen Harrier or Marsh Hawk; *Circus cyaneus*) is a species familiar to all readers so I will not discuss it except to say that there are few records from Belize. Stephen Russell's observation of one over the mangroves near Belize City on March 14, 1956, was the first record. My husband (also a biologist, who had taught ornithology at Oberlin College) and I made the second record, the bird seen hunting over a pasture near Caves Branch on the Hummingbird Highway on March 20, 1966. Many years thereafter we had no sightings but in the last few years we have had three, two over the paddies at Big Falls Rice Farm. These birds were spring migrants slightly off their northward route.

Three accipiters have been recorded in Belize:

(1) The northern race of the **Sharp-shinned Hawk** (*Accipiter striatus*), which migrates and winters through central America, has been reliably recorded only once. Dr Chandler S. Robbins, one of the authorities on this species, saw an immature flying through my farm at Mile 29½ on the Western Highway in lowland savanna on January 30, 1983.

(2) **Cooper's Hawk** (*Accipiter cooperii*) has been recorded several times. On April 7, 1966, I saw one clearly at the Burrell Boom Ferry over the Belize River. This is the first record for Belize. On April 1, 1983, a female Cooper's Hawk flew low over my head at my farm at Mile 29½, Western Highway. William Hass reports two sightings; the first on October 17, 1982 at Mile 15 on the Western Highway and the second in September 1983, in Belize City. This last was an exhausted and battered female which he

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rescued, took to the Belize Veterinary Laboratory and was able to release two weeks later.

(3) The only resident accipiter is the **Bicoloured Hawk** (*Accipiter bicolor*), as rare in Belize as it is over all of its extensive range. It occurs from southern Mexico all the way to Tierra del Fuego in forest and forest edges. There are only five records from Belize. Morton Peck collected one in tall rain forest near Manatee Lagoon in 1905. There is an early updated specimen from Cayo. Edwin O. Willis twice saw this species near Gallon Jug in the northwestern forest – on April 25, 1957 he spotted an immature in the undergrowth of the forest and, on July 21 of the same year, an adult perched on a tree in a cutover area. On February 28, 1975, Frank Oatman and I were jointly leading a birdwatching tour in the Maya Mountains near Blancaneaux Cave when an alert, rapacious-looking small hawk flew in to a low branch over our heads. Despite extensive experience, much of it in the neotropics, Frank had never seen a Bicoloured Hawk, nor had I. There we were, the two leaders, neither one knowing what this hawk was. My first guess was Barred Forest-Falcon because of the slaty back, extensive bare yellow facial skin, its size (350mm to 420mm), three white bars on the tail and yellow legs. But – the belly wasn't really barred with grey, it was grey with faint streak marks on the feathers, and the eye was definitely orange, not the bright yellow of the Forest-Falcon. Then we saw the bright rufous thighs, the definitive field mark. I know little of this species except that it is a bird-eater like most accipiters.

**The Crane Hawk** (*Geranospiza caeruleacens*), in Belize is that found throughout most of central America, the “Blackish”, subspecies *nigra*. Between 430 and 500mm in length, it is slaty black above and below, the long tail has two prominent white bars and a narrow white tip, the eye and the long ungainly legs are orange-red, the lores and cere are grey and the bill black. There is a seldom-raised short crest along the back of the head and upper neck. The definitive field mark in flight, from below, is an unusual white band across the primaries, formed by a white spot on the inner vane of each feather. The immature looks much like the adult but is streaked faintly with whitish on the forehead and upper throat and is barred with buffy-grey on the belly, thighs and under-tail coverts. This is an odd raptor, with only one species in the genus but that one varying considerably in colour over its range in tropical lowlands from Mexico to eastern Bolivia, Argentina and Paraguay. The legs are unusually long and bare and the heel joint may be bent both forward and backward, making it easier for the Crane Hawk to reach around with its foot in tree holes and crevices for prey. Its an ungainly-looking hawk, sometimes walking along branches like a Guan, sometimes sticking its foot into a mass of epiphytic tank bromeliads or a tree hole for tree frogs, salamanders, lizards, small snakes, big spiders and cockroaches and the fat green katydids which often live there. It is said to eat bird nestlings, and although I have not seen this, I am well aware that tree-nesting

birds consider it an enemy. Frank B. Smythe collected one with a mouse in its belly.

Crane Hawks are usually found along waterways. One lived from 1969 to 1975 (it disappeared the year of the drought) near Sebastian Bridge on Mussell Creek, 13km west of Burrell Boom. It was often seen in one or the other of two tall dead trees with broken branches and many holes, in a tall tree with many tank bromeliads growing on its branches and once I saw it flying at tree-top height over brushy swamp forest. There did not seem to be a mate around and I have never seen a nest. Another record of mine is from the Columbia Forest Reserve on March 22, 1970. More recently, on January 22, 1984, Byron Swift of WWF US and I saw one beside Black Creek in the Crooked Tree Wildlife Sanctuary. Martin Meadows told me recently that he has a number of records of this species from the Gallon Jug and Hillbank area in the northwestern forests. He considers it uncommon but not rare. These are the only records in recent years in Belize and Stephen Russell lists only one, that of a bird collected at Orange Walk by George F. Gaumer about 1887, as reported in Salvin and Godman in “Biologia Centrali-Americana” iii, 1899: 53.

The **White Hawk** (*Leucopternis albicollis*) is found from southern Mexico south throughout central America, in an isolated pocket in NW Ecuador, throughout Venezuela and the Amazonian region and in the Mato Grosso and eastern Bolivia. There is a remarkable variation in the amount of black in the different subspecies. *L.a. ghiesbreghtii* occurs in southern Mexico, Guatemala and Belize. It is strikingly beautiful, almost pure white. As illustrated in Brown and Amadon, it has two broad black wingbars, and that is true of our immature birds. Adults here and in Feten have all-white wings except for the black wingtips. There is also in all ages a narrow (about 25mm) black subterminal band on the tail and a distinct area of black bare skin at the lores and around the eyes. The eye itself is yellow, the cere grey, the bill black and the legs yellow. This subspecies is 485 to 560mm in length with broad wings and a shortish broad tail, buteo-like in shape. This is the only one of the genus that occurs this far north.

This White Hawk is common in Belize where there are still extensive areas of undisturbed forest. It is a lowland species common in the rain forest of the eastern and southern foothills, less so in the Chiquebul Forest on the western side of the Mayan Mountain Divide and also fairly common in the drier northern forest. It is a tame bird: when sitting low in a tree, it will often let one approach to within 10m or even 6m. Because of this it is easily shot and loggers and chicleros shoot it to eat when short of meat. Nevertheless, it is a successful species. A day's birdwatching in the foothill forests will always find one and often three or four. When my husband and I first came to Belize we rented an empty house near the Hummingbird Highway bridge over Caves Branch because, as we drove across, we counted four adult White Hawks in view at once. These birds were

not fighting, but several years later in Columbia Forest I watched four adults flying at each other and screaming. They did not actually hit each other, but the verbal abuse was horrific! I presumed this was a territorial fight since it appeared to be one pair against a second pair. I could not see that either pair was winning or losing before they passed out of sight.

I find this species on the edges of the forest and inside heavy forest. They are not only found sitting on a low branch, or high in the top, but also soaring high in the air over the forest, sometimes repeatedly giving a shrill cry.

One pair has nested fairly regularly near the path to St. Herman's Cave in Caves Branch, and twice I have found active nests near the trail to the Rio Frio Cave at about 500m altitude. The nests were 23m to 27m high in trees at the edge of small clearings and made of twigs. One hawk was nearby at all times. Once I saw one of the parents bring a Basilisk lizard to the young. With that excitement at the nest, I could make out that there were two downy chicks.

Ordinarily the White Hawk – in fact many hawks of the genus *Leucopternis* – feeds on snakes, although it will take long-tailed lizards. Several times, I have seen White Hawks, as I have Laughing Falcons, eating a coral snake. At first I wondered at their preference for a poisonous snake, although I don't think a coral snake's relatively short fangs could penetrate the thick feathers. Then I realized that coral snakes, when they do move out diurnally, crawl openly across the forest floor knowing that their bright colours warn most predators, and so they would be more easily seen by a predator that wasn't afraid of them.

The **Common Black Hawk**, also called the Black Crab Hawk (*Buteogallus anthracinus*), ranges from the south-western edge of the United States (not California) south through Panama, then coastally on the Pacific side to the northern tip of Peru and on the Caribbean side to Guyana, and to St. Vincent and Cuba. In Belize it is common to abundant in the coastal mangrove forest: a pair nests on many of our coastal mangrove cays. It is fairly common inland at low altitudes, especially along waterways.

It is 430 to 510mm in length, a chunky species with broad, rounded, relatively short wings and a wide short tail. This species is essentially black with one broad white band across the middle of the tail. From below, a small but distinct whitish patch shows at the base of the first primaries. The cere, bare skin of the loreal area and the legs are bright yellow or orange-yellow, the base of the bill is also yellowish and only the tip is black. Immatures are dark brown above, with a prominent whitish superciliary streak, and are buffy-white below heavily streaked with elongated blackish spots. The immature's tail is buffy with five to eight narrow blackish bars, the subterminal bar the widest. From below, young birds show pale areas in the centre of the wings.

The nests are of medium size and built of twigs. In the mangroves they are often on dead or broken trees that stand higher than the surrounding brush. A pair

nesting at Black Creek in the Crooked Tree Wildlife Sanctuary built in a tree right at the edge of the creek and leaning slightly out over the water. In my experience, only one young is actually fledged from the nest, but the adults nest every year.

This species soars regularly, often calling as it soars. The call is a series of high-pitched screams. And it often sits on broken stumps or low branches in the mangroves watching for crabs, its main food in mangrove habitat, and I saw one jump down into the mud to catch a big *Cardigsoma* land crab. These hawks are remarkably tame; on one trip to town during low tide I saw four sitting beside the road edge in the ten miles through mangroves, not one of which left its perch despite the trucks and cars passing. Friends living in this mangrove forest tell me these hawks sometimes take baby chicks, and Gloria S. Caldwell, studying predation on wintering flocks of herons and egrets in Panama, has recently reported thirty-two attacks by *B. ant racinus* on herons and egrets, eight of which were on lone birds and twenty-four on flocks. They have also been reported to take frogs, snakes, fish, insects and rodents.

The **Urubitinga** or **Great Black Hawk** (*Buteogallus urubitinga*) is widely distributed over the neotropics, including Trinidad and Tobago. It is a forest and open woodland species, often found along creeks and rivers; fairly common in Belize up to 350m. It is an all-black hawk, much like its congener, but considerably larger, measuring 510 to 590mm in length. The cere is a dull yellow, but the lores and the base of the bill are a dull blue-grey, an excellent field mark when the bird is close. In the air, this species (in our area but not so in South America) distinctly shows two white bands on the tail, plus a white rump. There is no prominent whitish spot at the base of the primaries. The immature is not only considerably larger than that of the Common Black Hawk but has ten to fourteen black tail bands as against five to eight in the smaller species. It is also more strikingly streaked on the forehead, neck and underparts.

On March 18, 1972, W. Ford Young and I were led to the nest of this species by a local fishing guide. It was near Spanish Creek in open pine savanna not more than 30m above sea level. The nest was 10m up in a big pine, placed in a crotch of several branches with the trunk. The nest was 763mm in diameter, about 400mm deep, with a well-made cup some 80mm deep. These estimated sizes were made by our guide who climbed the tree for us complete with ruler. The nest was built of pine branches still with needles. Since there were several fairly freshly broken stubs of the right size in the immediate area, we assumed the branches were taken from the nest tree itself.

The nest was lined with clusters of pine needles covered with green oak leaves. One youngster was in the nest, just getting his feathers. It had large areas of white on the sides of the head and prominent orange-buff and white streakings on its breast. The bill, legs and feet were orange-yellow. It was alone as we approached, but when our guide started to climb the tree the female (I assumed from its size) came



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charging in and flew around screaming full blast. The other parent never arrived. As our intrepid guide reached the nest and started to gather the young hawk into a bag to lower it down for photographing, the female (?) hit him. And the baby hawk was full of spunk. It came out of the bag biting and clawing; placed on the ground for photography, it kept rolling over on its back with its feet held up ready to claw any attacker. After Mr Young had photographed it, I managed to return it to the bag, which we then tied to the rope and hoisted up. Our guide, again under attack from the parent who had been circling and screaming the entire time, placed the youngster unharmed into its nest and hastily came down. I was worried that the female might desert because of our handling, but after we were a distance from the nest, she returned and started fussing over the young hawk. This species is reported to take frogs and lizards, but it is also known to take crabs, snakes, small mammals, birds, bird eggs, large insects and occasionally carrion. Jack Clinton Eitnecar, a former student of mine now working on King Vultures in Belize, was able to photograph a Great Black Hawk eating a bird he was unable to identify but which he estimated was about 190mm long. This was in the Chiquebul Forest on May 19, 1980.

Great Blacks are probably most often seen soaring high overhead in forest country. But, like their congener, are often found sitting low by creeks and small ponds. I have several times found them sitting quietly on the ground beside small ponds or marshy places in the open savanna.

The **Black-collared Hawk** (*Busarellus nigricollis*), is a large, eagle-like fishing hawk with a white head. There are no fish eagles of the genus *Haliaeetus* in tropical America, and it seems to me that this species takes their place. It is not related to them, but is apparently closer to the genus *Buteogallus*, the Black Hawks. It is strictly limited to freshwater, and does not occur along the coast.

The wings are long and broad, the tail short and broad, so that when the bird is seen soaring from below, the line from one wingtip around the tail to the other wingtip is an almost uninterrupted curve. Its total length, 480 to 510mm, is deceptive because of the short tail; but when soaring, as it often does, the long broad wings make the hawk look much larger than it is. Like the Osprey, the claws are long and curved and the toe pads covered with spicules that aid in holding a slippery fish.

This is a handsome bird. The head is white, sometimes tinged with buffy, and with a scattering of dark shaft streaks on the crown and neck. The body above and below and the greater part of the wing is a bright deep rufous. A black "collar" separates the white of the throat and the rufous of the breast. The primaries and the distal half of the secondaries are black. The tail is barred rufous and black with a broad black subterminal band. The eye is bright red-brown, the cere and bill black. The immature has the head and neck more buffy, the shaft streaks more pronounced. The forehead is white and the cheek

white outlined with blackish. The back and lower breast and belly are duller barred with black and browner, the breast light buff boldly streaked with black shaft streaks.

This distinctive hawk is common in Belize: it can be seen regularly sitting low on the bushes at Crooked Tree Lagoon or on low branches over Black Creek, at Sebastian Bridge on Mussel Creek, along New River, and at Big Falls Rice Farm. A small shallow pond with marshy edges at Mile 21 on the Northern Highway supported a pair for many years. It has not been recorded south of Dangriga, but I would expect that it lives in the extensive Aguacate Swamp, areas of which hold open water in marshes with trees along the edge.

The only nest I have seen was at Big Falls. It was large, about 13m high in the crotch of a big tree in a bit of open woods that had been flooded. I don't know how many eggs were laid, but one young fledged successfully. The next year this pair also raised one young successfully but the nest was not in sight; I saw them flying with it while it was still very young.

I once watched a Black-collared Hawk carry a big fish on Black Creek. It flew away carrying the fish crosswise, not with it facing ahead, as the Osprey carries a fish, with the claws of both feet firmly imbedded in the fish's body. It was a heavy fish, a freshwater snook at least 300mm long. The hawk flew downstream about 150m, landed on a big branch, saw me coming in a canoe and flew on. The fish was big and slippery and the hawk had trouble with it at each landing. I kept following and the hawk flew from tree to tree. He finally tired after almost two km and wedged the fish carefully, using both its bill and its feet to make sure it was firmly in place, in a crotch of a branch over the creek, flew up and over the forest and away. Presumably it came back to eat its prey after we had passed by.

The **Solitary Eagle** (*Harpyhaliaetus solitarius*) is found from southern Sonora, Mexico, to Venezuela, Colombia, Ecuador and Peru. It prefers the lower slopes of mountains up to 2,100m, living in pine and hardwood forests. All but one sighting in Belize have been in or on the edge of our mountain pine savanna.

This raptor looks much like a Great Black Hawk in colour, but is a large, sturdy broad-winged eagle, 600 to 800mm in length. The beak, seen close-to, is long and powerful. When seen sitting low close-by, the long crown feathers lie flat on the top of the head but stick out at the back forming a low crest. The adult is black above and below, with one wide white band across the tail and a very narrow white tailtip. The eyes are yellow as are the lores, cere and legs. The beak is black. The immature has a black crown, a grey hindneck, the front of the head is whitish. A blackish stripe runs through the eye, below the cheek and down to join the wide, prominent black sides of the throat and breast. The chin is white, joining a narrow white streak that runs down the centre of the throat and breast, separating the broad black areas. The lower breast is cream with at least eight black longitudinal streaks. The abdomen is mottled grey



and black, the thighs blackish, the tail blackish above and below.

I have not found a nest; the habitat is wild and rough with great cliffs and steep mountainsides, but W. Sheffler is reported in Brown and Amadon to have found several in southern Sonora. They are described as being about 1.22m wide and of the same depth, 25m high in a pine tree, lined with green leaves.

The Solitary Eagle has not previously been reported in Belize, but in recent years I have seen it soaring above the deep valley of the Macal River in the Mountain Pine Ridge Forest Reserve and twice I have seen it over the 600m dropoff of the eastern slope of the Maya Mountains at Hidden Valley Falls. My first record for Belize was in the Mt. Pine Ridge not far from the Rio On at an altitude of roughly 540m on September 10, 1969. Dr Andre Clewell was with me. We were able to get close as the bird was sitting not more than 6m up on the bare branch of a fallen tree, and Dr Clewell photographed it. I made detailed notes. It was obviously an immature eagle but did not fit any of the descriptions that I had available. It was not until I looked it up in Brown and Amadon that I could identify it. On October 9th of the same year and in almost the same spot, Dr Peter Hill, a Government Veterinary Surgeon from England, saw an adult Solitary and photographed it in Super 8 colour movie film, which he showed me to identify it. There was no question that it was an adult Black Solitary Eagle. Now I consider it fairly common in that area. A report has come to me of a sighting by Bryan L. Sage, the wildlife consultant from Norfolk, England, on January 11, 1982, near Crique Negro in the Columbia Forest. This is an area of rainforest at 125m altitude. Another report is from Barton Creek on the northern face of the Maya Mountains, and Dr Chandler S. Robbins and Mrs Kathleen Anderson, Director of Manomet Bird Observatory, were with me on Feb. 10, 1983, when I saw an immature Solitary soaring over the Sibun River bridge on the Hummingbird Highway in the lower foothills of the mountains.

Five species of the genus *Buteo* are resident in Belize, of which four are essentially tropical: – (1) Grey Hawk (*B. nitidus*), (2) Roadside Hawk (*B. magnirostris*), (3) Short-tailed Hawk (*B. brachyurus*) and (4) White-tailed Hawk (*B. albicaudatus*). The fifth, the Red-tailed Hawk (*B. janaiensis*), breeds far to the north as well.

The sixth, the **Broad-winged Hawk** (*B. platypterus*), has been recorded here at least four times as an accidental migrant. The first record is of a specimen collected by Morton E. Peck at Toledo Settlement on October 22, 1906. The second Broad-winged was sighted by William L. Hasse and myself on a Christmas Bird Count day, December 29, 1973, on the Bermudian Landing Road just past Mussel Creek. It was flying low, circling well within sight several times so that we had good looks, and I knew the bird well from the Costa Rica mountains. The facial pattern was well developed, but the tail appeared to be that of a late immature, so it was probably a young adult. There is also one record of it

from the Columbia Forest Reserve and the last sighting, by the Manomet Bird Observatory netting party, was of an immature Broad-winged on the Hummingbird Highway about four miles south of Belmopan on April 10, 1984. A photograph was taken of this bird to verify the identification.

The seventh *Buteo*, **Swainson's Hawk** (*B. swainsoni*), is only a winter resident in Belize. This species does not nest in Central America, but is famous for its large migrating flocks, often of several thousand, moving south through the mountains of Central America to their wintering grounds in South America. Although, the migrating flocks do not fly over Belize, one or two are usually seen in a day's birdwatching during the fall and winter, and these birds apparently maintain winter territories in Belize. It has been suggested that Swainson's Hawks wintering in Central America are mostly immature birds, but the birds sighted in Belize are in full adult plumage. Swainson's Hawks occur in two colour phases; a light phase dark above but whitish below with a wide dark brown breast band, and a dark phase which is all black. Both phases show a white skin and the tail has six to seven whitish bars with a wider subterminal black band. The black phase, often considered rare, is not uncommon here.

The **Grey Hawk** is a common *Buteo* here. In 1965 one could expect to see three, four or more on every full day's birdwatching trip, but during the late 60s and early 70s the population dropped severely. In fact, for four or five years I knew of only one pair and that was in the extreme south of the country. The population has slowly recovered and now along forest edges, open woodlands and clearings edged by forest you may expect to see two or even three per bird watching day.

The Grey is essentially a tropical species, but ranges south to eastern Bolivia, Argentina, Paraguay and as far as Rio de Janeiro in Brazil.

A medium-sized *Buteo*, 370 to 420mm in length, it is a neat, clean-looking bird, pale grey above and white narrowly barred with grey below. The blackish tail has two white bands, the distal wider than the inner, the rump is white and the wings whitish from below. The eye is a dark brown, the cere and legs yellow. The immature is easily confused with that of the Roadside Hawk, it is dark brown above and heavily streaked with dark brown below. The eye is brown, there are black mustache streaks and, while there is whitish around the eye, there is not a prominent white superciliary streak as in the immature Roadside.

I kept records from 1967 to 1973 on a pair of Grey Hawks that nested in the same tree all but one of those years – in 1971 they nested some 45m upstream. This was near San Antonio in the south of Belize at the edge of a clearing in second growth rainforest at an altitude of 120m. The nest was approximately 22m high in a tall tree beside the Dry Columbia Creek. When first rebuilt each year the platform was some 380mm both in width and depth. After the female had shaped it and sat in it during the egg laying period, the nest settled to about half its original depth. Most years the nest was completed and the female either

laying or incubating by the latter half of March or the first part of April. In 1967 the first nestling hatched on April 14; in 1973 the two young apparently hatched April 20th and 21st. In 1972 the larger youngster first climbed out of the nest and onto the branch on June 11th. By the 15th both fluttered down into bushes below the nest tree in mid-morning, climbed back to the nest around noon, out again later and back into the nest for the night. By the time I left on June 22nd, they spent the night either in the nest or in the nest tree, but practised flying nearby part of the day. When they were hungry they would struggle back to the nest and cry for food – loudly and continuously. The adults brought small food items that did not need tearing into pieces to them wherever they were, but would carry large items – on April 16 this was a two-foot snake – to the nest platform and there tear it into pieces for the young who by this time had rushed to the nest. The next year, 1973, I returned June 11-16 to find two youngsters flying fairly competently but still returning to the nest when hungry and crying for food which the adults dutifully brought, dividing it between the two.

The Grey is often seen soaring high in the sky. It is usually a quiet bird, the call is a typical buteonine scream. Lizards and large insects form the bulk of the diet. It is reported to take small birds but I have not seen this here and local farmers do not consider it a “chicken hawk”.

The **Roadside Hawk** ranges from central Mexico to central Argentina and Uruguay. It prefers open areas, clearings, open woodland, forest edge, scrub and savanna. It is reported elsewhere to range up to 1,500m, but in Belize is limited to about 540m in altitude, being found in the lower areas of the Mt. Pine Ridge, but not in the higher.

It is a small *Buteo*, 330 to 370mm, rather plump and nondescript, brownish-grey above with a rufous wing-patch which is seen easily when the bird flies. The eyes in both the adult and immature are bright yellow, as is the cere, the bill is blackish, the legs yellow. The upper tail-coverts are white to buff, the tail itself narrowly barred grey and dark brown. The throat and upper breast are a dirty grey, the lower breast and belly narrowly barred grey and dull rufous. Immatures show more buff and rufous below, the breast is buff streaked with dark grey-brown. Young birds have a prominent whitish superciliary streak.

This hawk builds a fairly solid shallowly-cupped nest of twigs 5m to 10m high, often in a dead or isolated tree. It generally rears one or two young each year although I have seen three fledglings.

It is without question the most abundant raptor in Belize, three to six individuals being seen in a day's birdwatching. The common name is appropriate: it likes to sit on a low perch beside a road or a stream ready to strike at any unwary bird that crosses the opening. But it does not hesitate to hunt in wooded or brushy areas, especially where army ants are attracting many insect-eating birds. Here, like Collared Forest-Falcons, a Roadside will sit in dense brush within a metre of the ground waiting for a

smaller bird to forget the danger. My first recognition of this was while birdwatching on Black Creek (now part of the Crooked Tree Wildlife Sanctuary): army ants were swarming over the creek bank and many small forest birds had come to eat the insects stirred up by the ants. There was a flash of wings and a squeal of pain – a Roadside Hawk had grabbed a Rufous-breasted Spinetail. Some five hours later the ants were still there – another flash of wings but no squeal this time and the Roadside caught a Grey-headed Tanager.

The Roadside is the “chicken hawk” of Belize. Although it is often stated that this species eats only insects and lizards, after twenty years' experience living in Central America and eight years of that time with a pair nesting beside my house, I find that the primary prey is birds. Young birds in the nest or awkward fledglings are readily accepted, but day in and day out this bird hunts adult birds. While it is not a big hawk, its large bill and strong feet allow it to kill good-sized birds. I have seen a Roadside catch a recently fledged Green-backed Heron, and a full-sized adult Ringed Kingfisher, the largest kingfisher in the Americas and, at 395mm long, actually, because of its bill, larger than the Roadside. Recently an immature Roadside caught a Groove-billed Ani in my yard, a species which measures, including its long tail, 380mm.

Additionally, like most successful predators, it takes other game such as large insects and lizards. In fact, this hawk's nesting is usually successful because both parents can afford to guard the nest closely, because so little time is needed to find food. Every two or three hours the female flies off and grabs a nearby Basilisk lizard (*Basiliscus vittatus*). These are good-sized lizards growing to approximately half a metre in length, most of that length being tail, and are abundant in Roadside habitat. I have never seen this species feed its young any other prey, although obviously it must do so under different circumstances. Nor have I seen a Roadside take mice or rats. I did observe one Roadside take fish over a period of two days during the dry season. It sat on a low branch of a calabash tree which overhung a small pool left from the drying up of a large pond. Small fish from 75mm to 150mm in length were trapped there. When one flipped near the edge, down went the hawk and grabbed it.

This species is a slow flier with shallow rapid wingbeats alternating with gliding. It is amazingly unafraid of humans, often allowing one to approach closely. And they are noisy hunters. The hunting call is a high-pitched, long-drawn-out, descending scream. In courting season the pair fly in circles, not very high in the sky, repeatedly calling a single note quite unlike the scream. This call is also given at times throughout the year, I believe from one of a pair to the other.

The **Short-tailed Hawk** is a beautiful small *Buteo* which ranges from Florida to Bolivia, Argentina and southern Brazil. It prefers semi-wooded country. It is fairly common in Belize, but I have no evidence of

nesting and few records of its presence in late spring. We need to know more about its status here.

It has two colour phases. (1) The commoner is all white below and slaty above, with the slate of the head coming well down over the cheeks. It is shining white from the gape down including the lower sides of the head. This makes a distinctive head pattern easily seen even when the bird is soaring far overhead. There is a narrow band of white over the beak, not easily seen unless the bird is close. The entire underparts of the body and of the wings except for the tips of the primaries are pure white. The under tail is faintly barred with grey, with a distinct black distal band. (2) In the dark colour phase the entire head and body are black except for the narrow edging of white on the forehead. The wing linings are also black, but the flight feathers are whitish narrowly barred darker. The tail is like phase (1) but darker. The light phase is more often seen, but the dark phase is not uncommon.

It is usually seen soaring. In twenty years I have seen it sitting only three times, always 6m to 12m high in a tree at the forest edge. It is reported to eat small birds, rodents, lizards and large insects. The call is a typical buteo-nine scream, but rather weak, and it is generally a silent species.

The **White-tailed Hawk** is a large (500 to 610mm), handsome *Buteo* ranging from southern Texas throughout the neotropics in suitably open country. In Belize it is limited to the lowland savanna, not being found in the mountain savanna even though open areas lie as low as 600m altitude.

The head and upper back are ash-grey, the scapulars grey, the shoulders deep rufous. The flight feathers are slate above, the lower back and rump are white and the tail is all white except for a subterminal black band. The body is all white below, the wing linings white, the flight feathers barred with grey below and the tips blackish. Immatures can show dark breasts and variable amounts of dark below. The wing linings are mottled dark and light and the tail is brown to grey-white with indistinct dark bands. In both adults and immatures the eye is light brown, the cere and bare facial skin greyish-green, and the legs yellow.

The nest is a thick platform of twigs and small branches lined with grass or leaves. One pair moved their nest each year, and one year I was able to watch them take branches from the old nest which was half sliding off to the new nest which was only 200m distant. The older nest had been balanced on the top of a stunted pine tree, perhaps 4m high, the new nest was of a more open small tree, again only 4m high. Both years they fledged two young successfully.

White-tails hover repeatedly when hunting. When prey is discovered, the hawk drops with wings outspread, sometimes braking a time or so if it loses sight of the prey. Cotton rats (*Sigmodon hispidus*) and mice are the usual prey, although I have seen one bring a small lizard to the nest. They will sometimes hunt in front of a grass fire, as do Peregrines and Aplomados.

This species has been in decline in Belize in the last

five years. Since it is not hunted, and since the lowland pine savanna habitat has not been seriously altered, I can only assume that disease is the primary factor.

**Red-tailed Hawks** are large (470-570mm) typical of *Buteos* ranging from southern Alaska to Panama and, in the West Indies, east to St. Kitts and the Virgin Islands. In Belize they are limited to our mountain savannas (locally called the Mt. Pine Ridge) above 500m altitude. I believe the population to be very small, not more than two or three nesting pairs.

The body colour is variable, with northern forms generally darker and Central American ones paler, but in all colour phases the tail is distinctively chestnut. Typically, the species is dark brown above and whitish below with scattered dark markings, darker across the lower breast. One unusually marked individual living at the Hidden Valley Falls appears pure white below and almost black above.

A pair of these hawks have nested near the falls for most of the nineteen years I have visited the spot. The falls lies at about 720m altitude at the eastern break of the Mt. Pine Ridge and are a favourite spot for King Vultures and large raptors riding the winds which sweep along the edge. In 1982, '83 and '84 no Red-tails were present. This year I have seen the unusually marked individual sitting in the nest tree but it has appeared to be unmated. The old nest was large, rebuilt over the years about 3m above ground in a small stunted pine tree leaning over the cliff edge and, while it was directly under a platform built for tourists to view the falls, it was at least 15m below and inaccessible.

This is a powerful hawk, an opportunistic feeder sometimes sitting quietly on an exposed branch waiting for prey, sometimes soaring low over the mountain savanna. It preys primarily on rodents, here taking the Hispid Pocket Gopher (*Orthogeomys hispidus*) along with smaller grassland mice and rats. There are no rabbits, a favourite prey in other areas, in this part of Belize. It will also eat lizards, snakes, small birds and large insects. A red-winged grasshopper fully 80mm long is abundant on this savanna during the rainy season, eight months of the year, and I suspect these hawks take them.

The **Harpy Eagle** (*Harpia harpyja*), the largest eagle in the world, is a deep forest raptor limited to the neotropics, being found from southern Mexico to eastern Bolivia, the northern edge of Argentina and southern Brazil. Only seven records exist for Belize.

(1) Dr Douglas Lancaster saw a Harpy Eagle at Gallon Jug in the northwestern forest on March 11, 1958. He watched it seize a snake on the ground and take it to a low branch to eat. (2) An adult was shot by Don Owen-Lewis just below Big Falls on the Rio Grande in 1961 when this area was still wild and unsettled. He had just shot a Scarlet Macaw for his dinner and as the macaw fell the Harpy burst out of the forest and grabbed it, so Mr Owen-Lewis shot it too. When I came and he heard I was an ornithologist, he described this bird which none of the local Indians had ever seen before and which no-one had been able

to identify. His description was very accurate and there was no question but that it was a Harpy. (3) In July, 1969, stopping at a small shop at Ladyville, some 16km north of Belize City, I walked in to face a mounted immature Harpy. The owner of the shop, a Mr Herrera, told me that some twenty years previously when he was working with a logging crew in the Mt. Pine Ridge he had shot this bird at the head of Caves Branch at the edge of the hardwood forest which clothes the lower hills east of Baldy Beacon. (4) There is a reliable record, I believe, of a Harpy circling through the canopy of the rainforest at the Rio Frio Cave near the forestry camp at Augustine Mt. Pine Ridge on March 4, 1970. (5) In the spring of 1971 Dr Geoffrey A.C. Herklots, then collecting plants for Kew Gardens and author of *Birds of Trinidad* saw an adult overhead about a mile from the spot where Mr Owen-Lewis had shot (2). (6) On March 28, 1972, several of a team (including Mr Ford W. Young and Mrs Kathleen Anderson, Director of Manomet Bird Observatory), who were netting birds with me, saw a Harpy flying just above the canopy of Columbia Forest, near the old forest station, now Salamanca Camp. (7) Mr Haywood White reported seeing an immature Harpy Eagle at the lower section of Swazey Creek in 1983.

This recent report of an immature bird is encouraging. I am hoping that a breeding pair is still alive and well in either the Cockscomb Basin which has recently been declared a no-hunting area or in the Upper Bladen, an area for which I am trying to find funds to develop as a wildlife sanctuary. This whole area is a karst limestone formation, most of it rough and inaccessible. And while this eagle is so huge, it stays below the canopy and is only sighted by chance, so its presence there could easily be unknown.

The **Black-and-White Hawk-Eagle** (*Spizasture melanoleucus*) ranges from southern and eastern Mexico south throughout the Amazonian area and along the Rio Paraguay. It is considered to be rare.

This is a stunning bird, smaller than our other hawk-eagles (460-580mm), more buteonine in shape with a shorter tail and more pointed wings. The head and underparts, including the wing-linings and most of the flight feathers except for the tips, are white. A short crest on the crown is black, a large and distinct loreal area is black, and the back and wings are black above. The tail is blackish with three brownish-grey bands. The immature is much like the adult but browner and the wing coverts are tipped with white.

Martin Meadows, who has worked for the Belize Estates' logging company in the same area for the last ten years and kept careful records of the birds there, reports that he sees it fairly regularly in suitable areas at the edge between the forest and the savanna although it is less common than the other two hawk-eagles there. And I would not list it as rare although certainly uncommon for the Mt. Pine Ridge area, for the Macal River Valley and the Chiquebul Forest Reserve, and for the Upper Sibun Valley. I have not seen it in the south of Belize. All my records have been made in or very close to the ecotone area

between high hardwood forest and savanna.

A pair nested from 1969 to 1977 near Hidden Valley Falls, just over the cliff edge of the eastern break of the Maya Mts. The nest was in scattered hardwood forest with dense hardwood forest below it to the east and the north, and many miles of savanna to the south and southeast. In 1977 my Tropical Ecology class followed a Solitary Eagle at the falls as it soared down the adjacent valley. Suddenly, as it neared its nest, the Black-and-White Hawk-Eagle hit the side of the Solitary at full speed. They tumbled down, fighting, for a moment, then separated and the Solitary turned away. I believe the Solitary had previously been unaware of the nest's location. The Hawk-Eagles never again nested at that spot and I've wondered if the Solitary Eagle later returned and took their young.

I have seen this species a number of times – sometimes both of a pair – hunting over the mountain savanna to the south and in July, 1983, Jack Clinton Eitniear, studying King Vultures in the Macal River Valley, showed me an adult and an immature Black-and-White sitting side by side in a big pine across the valley. He told me it had been obvious that a pair were nesting in the tree where he could not get a view of it. He had seen the adults going in regularly and was sure they were feeding a youngster. Now the fledgling was out of the nest but still staying close by and being cared for by the parents. This location, again, although Jack believed the nest to be in a pine, was just at the edge of the hardwood forest. I have also seen this species several times near the Upper Sibun River where it debouches from this same eastern break of the mountains and have several records from the lowland pine savanna. On December 7, 1974, I saw an immature on the Boom-Hattieville Road not more than 6 or 7kms from the coastal mangroves; and this spring Robert Leberman from the Carnegie Museum of Natural History twice saw an adult near my house in lowland savanna. These records are all fairly close to the gallery forest along the lower Sibun River, and the birds may have wandered down that gallery from the mountain savannas.

Birds seem to be the main prey. Van Tyne records an Aracari (*Pteroglossus torquatus*) taken by one shot near Cayo and Adolf Murie found a pigeon (*Columba speciosa*) in the stomach of one he collected south of Cayo.

The **Black or Tyrant Hawk-Eagle** (*Spizaetus tyrannus*) ranges throughout the lowlands of the neotropics. It is a large (560-600mm) but slender bird with long rounded wings which are narrow at the base and a long narrow tail. In both *Spizaetus* Hawk-Eagles in Belize the outline from below is definitely non-buteo-nine.

This species is mostly black. The bushy crest on the crown has a white central area. The whole underwing, flanks and belly, the thighs, legs and under-tail coverts are strongly barred black and white. The eye is orange-yellow, lores and cere dark grey, bill black and toes (the leg is feathered) yellow. The immature is quite different, showing a lot of white on the head,

neck, throat and upper breast. The crest feathers are tipped with dark brown, the back and upper wings are brown. The underparts are barred black and white as in the adult, but the tail has four light bars. On February 5, 1969, Nine Steffee and I were leading a Florida Audubon Society Tour on the Hummingbird Highway when an all-black colour phase of this species soared overhead. This is a rare colour aberration, but has been recorded elsewhere.

Russell has only one record for the Black Hawk-Eagle, a bird collected by Schmidt and Walters at Middlesex in the upper Stann Creek Valley in 1923, and no records from Gallon Jug. However, in 1965 we found these eagles actually common along Hummingbird Highway where we were camping. One adult lived near St. Herman's Cave and a pair with their young were often seen about 16km north. In 1967 I found one along the Southern Highway, and in '68 one in Gallon Jug and an adult and an immature about 10km north. Martin Meadows reports the Black Hawk-Eagle to be fairly common in that forest now, and I find them fairly common along the forests of the Belize River. A pair lives just across the Sibun River from me.

This species is called a "curassow hawk" in Belize, indicating that it is in the habit of taking large birds like the Great Curassow (*Crax rubra*). Bats and an opossum are also recorded as prey.

The eagle soars a great deal and often flies just above the canopy of the forest. It often screams as it soars. This call is a series of several shorter notes, then a long-drawn out, almost double note.

The **Ornate Hawk-Eagle** (*Spizaetus ornatus*) has roughly the same range in Central and South America as *S. tyrannus* but has also reached Trinidad and Tobago. It inhabits lowland forest and forest edge and humid forests on mountains up to about 2,500m.

It is the most colourful of raptors, a bit smaller than the Black Hawk-Eagle, being 560-630mm in length, but because of its bright colour and long crest it gives the impression of greater size. The front, crown and long pointed crest are black. The cheeks, sides and back of the neck and sides of the upper breast are a bright orange-rufous with a wide white central streak from the chin and throat down the upper breast. The rest of the underparts are prominently barred black and white, the back and wings above are brownish-black and the tail blackish with three broad light bands. The underwings are barred black and white but not so strongly as in the Black Hawk-Eagle. The entire head and neck of the immature are white, the crest white with a blackish tip. It is brown above with all white wing linings. Russell lists this species "uncommon". I consider it uncommon to rare in most of Belize, while Martin Meadows reports it as being fairly regular in the northwestern forests at the edges of marshes, lagoons and savannas. I have fewer records of this than of Black or Black-and-White Hawk-Eagles. However, the Manomet Bird Observatory's netting teams met it twice at Guanacaste Park in the spring of 1984. This small park lies close to the small town of Roaring Creek so that people are

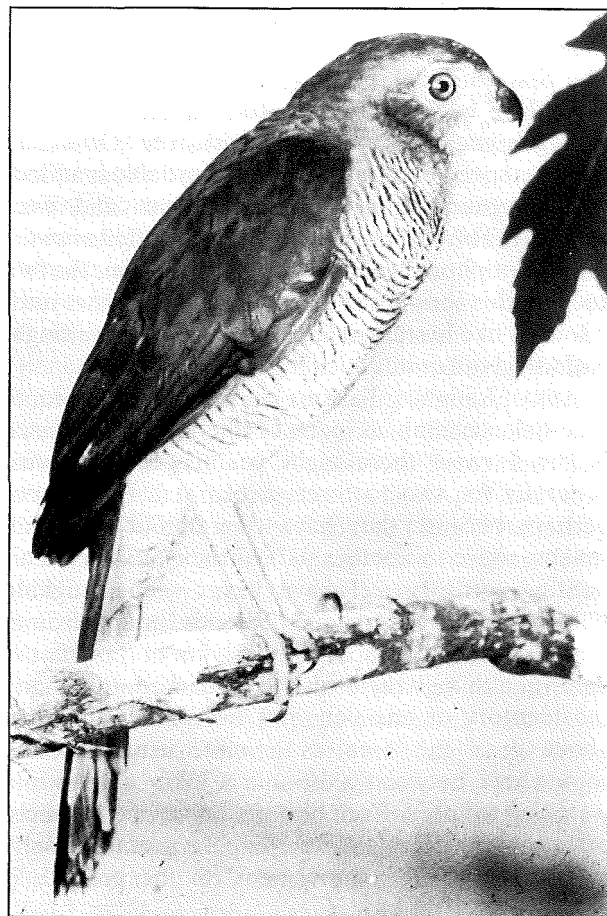
usually around. There is, however, extensive lowland forest across the river, and I assumed the birds (one adult and one an immature) were attracted by the alarm calls of netted birds.

I know of only two food records. Martin Meadows saw one attack a squirrel. A group of students from my Tropical Ecology course were sitting on the back of Temple IV at Tikal watching a group of five Crested Guans (*Penelope purpurascens*) picking fruits from the top of a tall tree when, suddenly, an Ornate Hawk-Eagle swooped in, grabbed one of the guans and carried it off, the rest of the guans scattering and squawking.

## The Falconidae

**The Laughing Falcon** (*Herpetotheros cachinnans*) is a most unfalconlike falcon; sitting, it looks more like a *Leucopternis* with small bill and soft appearance but the round head is distinct. Flying low, with rapid wing beats and then sailing, it reminds one of the Roadside Hawk, a *Buteo*, except that the wings are short and rounded. Its uniqueness is exemplified in its taxonomic position; *Herpetotheres* is a monotypic genus and placed in a subfamily of its own.

The Laughing Falcon ranges from Mexico through tropical Central and South America to Bolivia, Paraguay and N.W. Argentina. It is found in open woods, forest edges and, here, in Belize, is common in the pine-oak-palm savannas. In both humid and



Barred Forest Falcon

DORA WEYER

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semi-dry lowlands, it can be seen perching in the open from where it can watch for snakes.

Snakes are certainly its primary prey, although occasionally it will take a long-tailed *Basiliscus* lizard, I have twice seen this bird eating a poisonous coral snake (*Microrurus diastema*), and once watched one kill a coral snake on the ground. As we came up the falcon was holding a wing out towards the snake, possibly to absorb the snake's bite but I thought to confuse the snake (as I do in catching a lizard on a tree trunk – I hold my left hand out and wiggle it and, while the lizard watches that hand, grab it with my right). The falcon saw its chance and grabbed the snake just behind its head, bit it rapidly several times, then flew to a branch low overhead still holding the snake in its beak just behind the head. Here after several more hard bites at the neck, it passed the snake back and forth through its bill, biting it hard to sever the backbone, then held it in its bill a long time, every so often biting. Finally, it swallowed the completely limp snake tail first. At other times, with a larger snake, I have seen this falcon carry the snake in its feet.

The Laughing Falcon has a white head with a broad black patch covering the eye and ear coverts and continuing around, then across the nape as a narrow black band. The head is rounded with a short crest that looks like a brush-cut. It is large for a falcon, 430 to 470mm. The back and short round wings are dark blackish brown, the entire underparts white. Illustrations of this bird usually show the underparts as light buff, but the great majority in Belize are white. The long tail is white with at least five black bands. When flying, a large whitish spot in the wings (the bases of the primaries) is definitive.

The Spanish-speaking peoples of Central America call this falcon *Guaco*. Its common call is "gua-gua-gua" repeated over and over. Often the tempo is speeded up and the second syllable is added, "guaco, guaco, guaco" repeated over and over tirelessly. The other bird of the pair will often answer, calling antiphonally. During courting season, the two keep up this antiphonal calling, faster and faster until it sounds like hysterical laughter. Less often, a single bird will give a quite chuckling call a few times.

A pair of Laughing Falcons has included my farm in pine-oak savanna as part of their territory since before I came there eight years ago. They visit generally for two to three weeks at a time, then, perhaps because they have cleared out the small snakes, move to another part of their territory. This hunting territory – I have never seen Laughing Falcons fight over territory – extends for approximately 11km in one direction and 5½km in the other. I believe, although the birds are unmarked, that this is the territory of one pair, not two. The pair move about over the area as a unit, usually sitting somewhere between a ¼ and a ½km apart while watching for prey. Each bird sits on an open branch, often looking down and watching the ground closely. When excited by a movement on the ground, it waggles its tail rapidly.

This pair nests at various places in their territory,

always in a tree hole. I find them quite sensitive to watching, and leave the nest if I come several times to watch. I have never seen an immature bird or a fledgling, I think this species hides its young carefully. It is a common bird in Belize, so obviously it must nest successfully.

The two species of the genus *Micrastur* are, like all the genus, forest birds. They are both found in lowland and sub-tropical humid and semi-deciduous forest from Mexico to Paraguay and northern Argentina. The Collared Forest-Falcon has been reported up to 1800 and 2100m altitude in other areas, but in Belize it is limited to subtropical levels. Both have long bare legs and a ruff around the ear coverts that concentrates sound: both hunt partly by sound.

The **Barred Forest-Falcon**, (*M. ruficollis*), looks much like an accipiter. slim, 320 to 350mm in length. This species is divided into a number of subspecies over its range in which the colour varies considerably. The Belizean bird, *M.r. guerilla*, is essentially grey and white. The male is dark slate above, the female more brownish. The throat is pale grey, the rest of the underparts are whitish narrowly barred with grey. The tail is long and rounded, the rectrices somewhat graduated, dark slate to blackish with three very narrow whitish bands. The legs are long, bare and bright yellow. The cere, an unusually large and deep set loreal area, and the orbital ring are orange-yellow, the eye light orange-brown. Immatures are brown, not grey, and have a narrow nuchal collar. Some are almost unbarred white below, and some are buffy barred with brown.

This species, like many falcons, is primarily a small bird eater and sometimes gets tangled in nets trying to grab the birds caught there. It is also recorded to have eaten lizards and mice, and even slugs and batrachians. The bird barks rather than calls, a distinctive note in the forest. It also is known to cackle. Its courting and nesting are not known and it is difficult to see, perching low down in shaded tangles and slipping away quietly as one approaches. I have seen the species only twice in Columbia Forest in the south of Belize, and have taken it twice in nets, once in Columbia Forest and once near Guevas in the Chiquebul Forest. I believe it to be uncommon here.

The **Collared Forest-Falcon**, (*Micrastur semitorquatus*) is a large forest-falcon (460-560mm) that does not look at all like an accipiter. The tail is very long, the rectrices graduated, and the ruff of feathers forming the ear-coverts are far more distinct than in *ruficollis*, giving the face when seen directly-on a wide flattened look.

The adults of the subspecies, *M.s. nase*, are blackish above and either white or, only occasionally, light buffy below. There is also, more uncommon here, a dark phase black both above and below. There is a white or buff collar across the nape except in the dark phase, and extending down from the black crown is a black crescent outlining the white ear coverts, a distinctive marking. The tail is blackish with three narrow white bands. The cere and the bare skin of the loreal area are dull green, the eye dark. The immature



is brown with an obscure lighter rufous-brown collar, the underparts washed with buffy and barred with brown, the upper breast more rufous.

I have never seen this species in the heart of the true rain-forest. Instead, I have found it fairly low in the dense tangle of the forest edge. My experience agrees with that of Stephen Russell, working in the drier NW forests, and of Paul Slud in Costa Rica. It moves through the mass of branches and vines quickly and quietly, the long tail and short wings allowing it to change the direction of its flight amazingly fast. I have also seen it stalking prey on the ground, especially where army ants are attracting the smaller antbirds to the ground. I have twice seen immatures standing in the mass of army ants and eating not antbirds as adults do but the larger insects that ants flush.

The adult is primarily a bird eater, a fierce, alert hunter. It will sometimes come to a squeaker: a student of mine, Randy Lundgren, brought one in by playing a recording of the fright calls of a pair of ant-tanagers caught in our nets. Driving down the Roaring River Estate road through their entrance forest on July 28, 1974, I had a chachalaca (*Ortalis vetula*) streak across the road in front of my car, and right behind it a black-phase Collared Forest-Falcon. Both birds are about the same size, although the falcon is much the faster. Alexander Wetmore states that chachalacas, despite their size, are favoured prey. They are also reported to eat lizards but I have not seen this. The black colour phase is rare, but I saw one again years later about 17km south of Roaring River Estates.

The call is somewhat like the Laughing Falcon's, but the "gua-gua-gua" note descends at the end and is given more slowly. The series is far shorter also.

This species, like *M. striatus*, is uncommon in Belize, but it is more often seen than its congener.

The **American Kestrel** (*Falco sparverius*) is a winter resident, not breeding in Belize. Our birds are *F.s. sparverius*, a race that breeds in North America. When I came in 1965-66 and in the following years it was abundant throughout the winter months, arriving in October and leaving in late March and early April. We would often see six or seven or more kestrels in a day's birdwatching through the pinelands, pastures and semi-open areas such as airports and settlements. In 1971 and '72 this species was still abundant, but in the winter of 1973-74 the population was considerably lower and has remained so until last winter, 1984-5, when there were signs of it picking up.

The first records of the **Merlin** (*Falco columbarius*) in Belize were made by Jared Verner on seven days between April 7 and May 6 in 1958 when he was studying the nesting of the Red-footed Booby (*Sula sula*), on Half Moon Cay in Lighthouse Reef, some 80km offshore. The best day was April 16, when standing on the lighthouse platform for 1 hour and 10 minutes at mid-morning he sighted four Peregrines (*Falco peregrinus*) and twenty Merlins flying north. No other records were noted until my husband and I

saw one Merlin in mid-March of 1966 in a pasture in the Upper Belize River Valley. My next record was in March, 1979, when a Quester's Tour found one sitting in a pine tree on an upper hill eating a Pale-vented Pigeon (*Columba cayennensis*). Then, with Manomet Bird Observatory's second netting study in 1984 and their many alert birdwatchers, we saw five Merlins: March 14, one just east of my guest-house and one on the Mile 17 or Freetown Road to the Sibun River; March 19, one shortly after dawn on the transect across from my farm and one at 4pm near my house (these two sightings could have been the same bird); and on April 9, one at Big Falls Rice Farm. It is clear that Merlins migrate north through Belize in the spring, the great majority going along the coast and outer cays, a few inland. So far we have no fall records. These migrants are probably those of the race *F.c. columbarius* that winter in Ecuador.

Merlins do stop and feed along the way. The bird we saw on the Freetown Road was in a place where thick brush and trees grow close to the track on each side. As I drove through, a male Barred Antshrike (*Thamnophilus doliatus*) flushed across the narrow track and a female Merlin grabbed him before he was halfway. I was impressed with the speed and reaction of that Merlin. Also, the Merlin seen eating a pigeon on my property had obviously stopped to eat.

The **Aplomado Falcon** (*Falco femoralis*) is essentially a neotropic species, although the northern subspecies, *A.f. septentrionalis*, breeds from the southern edge of the United States where it is very rare, and in Mexico. And the Andean race is a bird of the high Andes in a temperate climate. The third subspecies, *F.f. femoralis*, ranges locally through South America in the tropical areas and a few are found breeding in Panama.

In Belize there are wintering residents, uncommon but certainly not rare, and these birds maintain feeding territories. They are of the northern race presumably since they arrive in October and November and leave in March. Stephen Russell records two Aplomados, one in February and one in March, which were of the northern race.

There are breeding resident Aplomados in Belize. Stephen Russell lists records in February, March, April, May, June, November and December. My records fall in January, August and September and include pairs hunting together in late April and early May in 1979, 1982 and 1984 so that I feel certain they were nesting in Belize. I now have a report from Martin Meadows that he saw a pair of adults with three fledglings near Hillbank on New River Lagoon.

We may find that two subspecies occur here, one a migrant, one a resident. If the resident birds prove to be the northern *F.f. septentrionalis*, this is a considerable extension of their breeding range to the south. If they are *F.f. femoralis*, the tropical South American species known to breed sparingly in Panama, this is a considerable extension to the north. The Aplomado is a large falcon, 380 to 420mm, almost as large as a Peregrine, and handsomely marked. In the adult the back is bluish-slate, the



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crown much darker. A white or buffy collar crosses the nape and runs up to the eye on each side. Below this, a black line runs from below the eye to the nape and mantle. A shorter, second black line forms a vertical malar stripe. The front, cheek, throat and breast are white or buffy. The sides of the lower breast and belly are black, each feather tipped white. These large black areas meet in a narrow band across the belly. The lower belly, thighs and under-tail coverts are tawny-rufous. The tail is black with five white bands. The immature bird is blackish-brown above, the sides and belly band are solid black and the breast is streaked with blackish.

It prefers open country, being found in Belize in the pine savanna, and in cleared pasture, rice and sugar cane fields. It perches low, even on fences. And it is often found hunting ahead of grass fires, sometimes diving right into the smoke and flame after prey which is trying to outrun the fire. Several times I have been sure one would be caught by the fire, but it is a rapid flyer and seems able to dive in and out fast enough to avoid burning. On April 28 1984 a fire at my farm attracted five of these great falcons – a thrilling sight – and later, a smaller fire brought in three.

It feeds mainly on birds and large insects, but will take mice and lizards. On April 20, 1982, while my daughter and I were surveying populations of Lesser Yellowhead Vultures (*Cathartes burrovianus*) in northern Belize, we came upon a cane farmer ploughing a new field. An Aplomado sat on a fence about 40m away from the noisy tractor alertly watching where the front wheels disturbed the grass. It swooped almost between the wheels, missed its prey, recovered, turned and caught a small black seedeater. It returned to the fence and ate the seedeater, quite unconcerned by the noise and nearness of the tractor, the farmer, or our car.

The **Bat Falcon** (*Falco ruficularia*) is widely distributed in the neotropics. It is recorded up to 1,500m elsewhere, but in Belize it is not usually seen over 600m altitude. While probably the commonest falcon over its wide range in Belize, it is only fairly common to uncommon, although just a few years ago I considered it common. There has not been excessive disturbance to its habitat and no-one shoots it. Living here over twenty years I have learned that the populations of many species fluctuate severely. Most species, as with Grey Hawks, Limpkins, Aztec Parakeets, and Black-bellied Whistling Ducks, recover their former abundance after six to twelve years. In these cases I can only speculate that disease is the disturbing factor.

The Bat Falcon is small, the male averaging 228mm in length, the female, markedly larger, 280mm. They are stocky birds, blue-black above with a white throat extending around the sides of the neck to form a partial collar. This collar may be white to buffy and is an excellent field mark when the birds are seen at a distance. The entire breast, upper belly and flanks are dark blue-black with narrow whitish barring, the underbelly, thighs and under-tail coverts are deep rufous. The tail is black with four or more bands that

are dark grey above and white below. The cere, orbital ring and legs are bright yellow, the eye black. The call is a typical falcon “ke-ke-ke” but higher pitched than in larger falcons.

They are somewhat crepuscular in their habits, doing most of their active foraging in the early morning or late evening, sometimes after sunset. During the main part of the day they tend to sit on a high exposed branch from where they watch for flying prey. When they sight a small bird or large insect, they swoop out and down, rushing from below to grab the prey with outstretched feet. This falcon also flies high, soaring at medium levels for birds or insects. When it grabs an insect it eats it in flight. It is an extremely fast flier with rapid wing beats and powerful thrust – I know no falcon that is faster – and even catches swifts and hummingbirds. In my experience its primary prey is birds, but I have seen it take big cicadas, dragonflies and giant grasshoppers. It also takes bats and one pair I knew nested from 1969 to 1977 in a hole in the main crotch of a huge half-rotten tree near the Rio Frio Cave where small bats lived. This was in hardwood forest at about 510m in the Mountain Pine Ridge Forest Reserve. I have watched the male of this pair catch bats in the early evening as they came out of the cave and carry them to his mate who often sat on guard at the mouth of her nest hole. In 1977 a summer storm blew this nest tree down.

When I first started to build my house on the farm, a then uncleared piece of land, in 1977 a pair of Bat Falcons nested in a hole in a big dead tree some distance away on the hill. One bird spent much time sitting on the top of this tree even after nesting season. When land nearby was cleared a year later, they left the area. S.G. Madge wrote an article *Hole Nesting by Bat Falcon in Belize* in the Bull. B.O.C. 1977: (97)2 reporting on a Bat Falcon's nest and mentioning that these birds were reported in Pennard and Pennard to build a twig nest. I quite agree with Madge, I have watched several pairs nesting and they always use a hole in a tree, often a dead tree.

Some years ago Ford Young, Col. Martin Hastings and I were privileged to watch Bat Falcons courting. We stood on top of a hill beside Caves Branch, a cliff face dropping away before us and even higher cliffs nearby. The pair of falcons dived and circled up and over close together over and over at tremendous speed. We stood entranced. None of us had ever seen anything to match the speed and control of their flight and none of us will ever forget the sight.

The **Orange-breasted Falcon** (*Falco deiroleucus*) is uncommon to rare in most of its wide range from south-eastern Mexico throughout the neotropics to Peru, northern Argentina and Paraguay. It is also found in Trinidad. Elsewhere it is recorded to 2,500m altitude, but in my experience it is a lowland species. In Belize, it is a rare but breeding resident at about 500m. I know it well in Tikal at 250m, and on the Rio Napo in the lowland eastern Amazon region of Ecuador where it is a common bird in high rain forest with no cliffs anywhere near.

Our records are few, but interesting. My first sighting

(Stephen Russell had no records of it at all) was when leading a Florida Audubon Society tour in February 8, 1969, on the northern edge of the Mountain Pine Ridge in a mixed hardwood and pine ecotone. In 1970 I saw another not far from the Puente Natural on the north side of the Chiquebul River valley in hardwood forest. On June 16, 1974, Lt. A. Stansfeld, a falconer then stationed here with the British Forces, found a pair of these falcons about five km due east of Puente Natural. They were coursing up and down in the deep gorge of the Chiquebul River. Later one sat in a tree at the top of the gorge and called. He noted that one of the pair was considerably larger than the other and thought them a breeding pair, male and female. J. Christopher Haney reported seeing one nine km south of the Guacomayo (or Macal) River on July 20, 1981, in *Wilson Bulletin*, 95(2), 1983:314-15. This is the first published account of their occurrence in Belize except for our published checklists. This location is not far from the two previous listings above in the Chiquebul River.

Then, on June 21 1985, Dr Scott Wood, Assistant Curator, Section of Birds, Carnegie Museum of Natural History, and Robert Leberman, also of the Bird Section, met with a pair of adult Orange-breasted Falcons and two fully fledged young, again about five to six km from Puente Natural. This record gives us proof of their breeding in Belize although we have suspected it from Lt. Stansfeld's 1974 report. The Chiquebul is a remote area and few birdwatchers get far down into it, accounting for the dearth of reports on this species, I have no records from other parts of Belize.

The Orange-breasted Falcon is essentially a larger version of the Bat Falcon as far as markings go. Males average 300mm in length, very close to the size of the female Bat Falcon, and the female Orange-breasted, considerably larger, runs 350 to 400mm. It differs from the Bat Falcon in that the upper breast is deep rufous, the partial collar is rufous rather than white (although the Bat Falcon's collar is variable enough that this is not a reliable field mark), and the barring on the black of the lower breast and belly is mostly buffy rather than white. Elsewhere, the two species are marked much alike. The call as I hear it in Tikal is mostly a typical falcon "kek-kek-kek", lower in tone and louder than the Bat Falcon's. Barely, I have heard it give a long-drawn-out scream dropping to a lower tone at the end, which it repeats several times.

This species, particularly the female, is a large stocky falcon. Amadon compares it to a Peregrine, but this bird in the field is much heavier-looking, is much less alert, less active and a slow flyer. When stooping after prey, it is also much slower than a Peregrine.

Their nest site in Belize has not been found but they have nested in Tikal for many years, certainly from Frank Smythe's first records in 1958 to 1984. I have seen them every year from 1966. From time to time they have moved from holes in Temple IV, where they lived for a few years from 1966, to Temple II, and one year Temple I, and back again. I am convinced that Bat Falcons, much faster flyers which I have

watched persecute the Orange-breasted have driven them away from their preferred site.

I have not seen these birds catch any prey except birds. I have distinguished pigeon feathers, and once Aztec parakeet feathers, in pellets at Tikal but no evidence of mouse or lizard bones or insect parts.

The **Peregrine Falcon** (*Falco peregrinus*) is so widespread and well-known that I shall not give range, description, etcetera. A few Peregrines winter in Belize, maintaining winter hunting territories for the greater part of the time. They arrive in October and November and leave in March, sometimes in late February. The majority, however, migrate further south, passing through the outer cays. On October 12, 1984, for example, at Half Moon Cay, some 90 km out from land, a group of us, including Mark Halle of I.U.C.N., Craig McFarland and Jim Barbarak of C.A.T.I.E., found five Peregrines hunting through a flock of Common Yellowthroat Warblers that had made it to the cay, exhausted and hardly able to move out of the way of our feet as we walked the beach. The year before at this time, Ray Ashton had reported the sighting of six Peregrines together at Turneffe Reef, an atoll of small mangrove cays about 48 km off the mainland.

On the 1984 Christmas Count, December 23, for the Belize City area, as dusk fell and we turned the car back to call it a day, we saw a male Peregrine dive on a Mangrove Swallow. Just as we thought the falcon had caught it, the swallow jerked right about ten inches and up about four inches and escaped. The Peregrine swooped on three more swallows, each saved itself at the last moment. Just then bats, about five inches body length and either fruit bats or vampire bats, began to pour out of the upstairs window of a deserted house and the Peregrine turned his attention to them. As it swooped on the first bat, again it seemed to have made a kill, but no, the bat dropped straight down to the ground, and flew away as the falcon turned to the next. The second bat escaped the same way, but the Peregrine caught the third and carried it off. But not without trouble. Obviously the bat was biting the falcon's feet because several times the bird reached down with his bill and bit it repeatedly. Once the falcon shifted the bat from foot to foot, and finally, hovering for quite a half-minute, bent his head down, bit repeatedly, then took the bat up in his beak biting hard, apparently trying to snap the backbone. Finally, after wiggling its feet a number of times (I assumed they hurt from the bat bites) took the bat in one foot and flew off. I have netted bats a good deal, and know that they are hard to kill and that they bite ferociously if given the least chance. Only a weasel is faster and nastier to handle.

#### Reference

Leslie Brown and Dean Amadon: *Eagles, Hawks and Falcons of the World* Country Life Hamlyn, 1968.

● The Belize Heritage Society, an umbrella organization seeking to raise funds for the Belize Audubon Society's projects and other conservation efforts, is asking for financial contributions to develop wildlife sanctuaries in Belize. Please address inquiries to: Mrs Dora Weyer, Belize Heritage Society, P.O. Box 101, Belmopan, Belize.