

NOTES ON NORTHERN MIGRANTS OBSERVED IN BELIZE

by Lt. Colonel P.J. Hubert, OBE, QUEENS

Migration is a spectacular attribute of birds. About half of all land birds that breed in North America winter in Central America. In Central America migrants are up to 50 per cent of the bird population during the northern winter, and "the presence of millions of migrating birds" is given as a factor that may restrict the nesting of resident birds at that season (Skutch 1966). That there are extensive enough suitable winter quarters in Central America may be the reason that the South American tropics are not an important wintering area for northern migrants.

In Belize, excluding rare vagrants and accidentals, 87 northern migrants occur as winter visitors; a few of these are also species on passage and a smaller number of some of these species remain in summer to breed. These winter visitors include six gulls and terns *Laridae*, 13 waders, 18 other non-passerines and 48 passerines, of which 24 are wood-warblers *Parulidae* and eight are tyrant flycatchers *Tyrannidae*. A further 50 species occur in Belize predominantly as transients occurring on either autumn or, more commonly, the spring migration; a few of these also remain to breed in small numbers. About half a dozen of these migrant species remain but do not apparently breed in Belize. A further half dozen species occur in Belize as stragglers.

A knowledge of the meteorological conditions associated with bird movements has for long been considered extremely important and it has been stated that it is essential that the weather conditions prevailing in the area in which the movement had its origin should be taken into account (Moreau 1972). Cooke (1913) makes the reservation that the departure of birds from tropical winter grounds is unlikely to be affected by weather conditions. This is unlike the United Kingdom where we look to weather conditions on Continental Europe for an explanation of the arrival of migrants on to our shores both in spring and autumn.

South of the Sahara, the vast evergreen equatorial forests of the Congo and Mozambique are shared by the majority of all the European small migrant song birds. One theory put forward suggests that, because there is little seasonal variation in the climate of the forests, the resident species exploit a stable food supply all year round leaving no surplus for newcomers. The origin of migration is necessarily a matter of speculation. The two general views are well known and postulate that it evolved in the face of climatic changes which, in an extreme form, involved a glacial epoch, or that it evolved from an effort of range expansion. There is not the space in this article to elaborate on these theories. They are fully rehearsed in numerous references.

The start of migration in autumn is similarly unrelated to the immediate conditions. Usually the food supply is still abundant and everything would seem ideal for a leisurely recuperation after the strenuous spring migration, nesting and the food gathering for the growing family. For instance, the Purple Martins *Progne subis* return through Belize on their way to Brazil in their thousands throughout July and early August, while many other species using the same breeding areas are still feeding nestlings.

Many shore birds in both Europe and America behave in a similar way and are already half way to their winter range in the tropics before temperatures have passed their summer maximum or food supplies have begun to dwindle. Typical of these are the Solitary Sandpiper *Tringa solitaria*, breeding in the extreme north of Canada, and the Spotted Sandpiper *Actitis macularia*. Yet those Ruddy Turnstones *Arenaria interpres* which breed in the extreme north of the sub-continent do not return through Belize until mid-December. So narrow is the neck of land in Central America that they are unlikely to pass through unnoticed on their way south to Brazil and Chile. I have seen groups of returning Ruddy Turnstones lingering on the Cayes of Belize into the middle of June and others, probably non-breeders, returning south in mid-August.

Experiments carried out in both America and Europe during the 1930s indicated that it was not temperature changes which influenced birds to come into breeding condition or stimulated migratory behaviour, but the lengthening or shortening of daylight would cause birds to respond by stimulating or curtailing breeding and would induce them to migrate. But in Belize they experience only slight changes in day length; yet they begin their northward migration punctually each spring. There must, therefore, be some other stimulus. William Rowan, a Canadian biologist, indicated that a crucial timing factor was responsible for keeping birds synchronised with the seasonal climatic cycles, but this does not explain the significantly different spring and autumn movements of species with similar breeding and winter ranges such as the White-eyed Vireo *Vireo griseus* and the Wood Thrush *Hylocichla mustelina*, or the Black-and-White Warbler *Mniotilta varia* and the Yellow-rumped Warbler *Dendroica coronata*. This characteristic is, of course, familiar to us in England with two closely related species. Thus, the Chiffchaff *Phylloscopus collybita* and the Willow Warbler *Phylloscopus trochilus* are both regular migrants to the British Isles in summer; the former is about two weeks earlier in the date of its arrival in spring. The Chiffchaff largely winters in the Mediterranean area, whereas the Willow Warbler is a long distance migrant wintering south of the Sahara, and this may be the explanation. In the case of the White-eyed Vireo and the Wood Thrush, it is probably due to the availability of food, but this may not be the case for the Black-and-White Warbler and Yellow-rumped Warbler, both of which are insectivorous though breeding in slightly different habitats.

The study of migrants presents the observer with difficulties that are familiar to observers world-wide. The passage and movements of waders up the coastline and the off-shore cayes are relatively easy to detect. So are the movements of those birds that move in large flocks or waves: the autumn movement of Purple Martins with their nightly concentrations has been mentioned; the spring movements of the Barn Swallow *Hirundo rustica* and the Red-winged Blackbird *Agelaius phoeniceus* are conspicuous as parties of up to 50 or 100 hasten northwards, often pausing briefly to feed. Their anxiety not to delay can almost be felt as they pass.

The species that winter in huge flocks or roosts are equally conspicuous as they arrive back or depart; the thousands of Indigo Buntings *Passerina cyanea* at the rice silos at Big Falls estate or the roosts of Little Blue Herons *Florida caerulea* and Orchard Orioles *Icterus spurius* or the whirling flocks of Tree Swallows *Tachycineta bicolor* which are seen sometimes in their hundreds of thousands. Such huge concentrations seem a strange risk for nature to take, for one climate disaster, such as one of the region's not infrequent hurricanes, could have a very severe impact on those species which congregate in large numbers.

Belize has no apparent fly-ways except the off-shore line of Cayes. Along these many of the less common transients are seen including the Bobolink *Dolichonyx oryzivorus* and Swainson's Thrush *Catharus ustulatus*; also some of the sub-species that are transients, wintering to the south whilst other sub-species over-winter in Belize, such as the Yellow Warbler *Dendroica petechia*. A transient that has been infrequently reported in Belize is a very attractive little finch, the Dickcissel *Spiza americana*. The spring of 1983 produced flocks of hundreds both at Airport Camp and also at the Big Falls rice estate, some 50 km inland. It would seem more probable that the Dickcissel is regularly present in such numbers in spring but has escaped detection because of a lack of observers. The Pectoral Sandpiper *Calidris melanotos* is a transient to its wintering grounds in the southern half of South America and it is of interest that its breeding range has expanded westwards well into northern Siberia whilst retaining its South American wintering area.

It is on the Cayes that the passage of the waders is particularly evident. To date records are sparse, a fact that is surprising when some, such as Caye Chapel or Hunting Caye, are most congenial spots. Though Russell (1964) mentions them in his report, it is clear from the paucity of his records that he cannot have spent long amongst them especially during the early months of the autumn migration; he remarked that the migration of the American Redstart *Setophaga ruticilla* was especially noticeable on the Cayes. Petzl spent several months on the Cayes but this was during the height of the summer when there were few migrants (Petzl 1976).

The routes of several species are of great interest, in particular those of the wood-warblers *Parulidae*. By far the largest number of Nearctic species wintering in Belize are wood-warblers. Many go to Central and South America across the Gulf of Mexico; a number cross the Gulf at its widest point, a real challenge. Some, such as the American Redstart, travel on a very broad front through both Texas and Florida into Mexico as well as to the West Indies. One of the best known wood-warblers, the Yellow Warbler, breeds over an enormous area from Alaska and Newfoundland (*D.p. arnica*) to Guatemala and Belize (*D.p. bryanti*). It winters from Mexico south to Brazil and Peru. In spring some go north through Central America to Yucatan and thence to Louisiana. A few follow the Mexican and Texan coast. Other wood-warblers follow the island chain. For example, the Blackpoll Warbler *Dendroica striata*, which has been described as the "Arctic Tern" of the wood-warbler tribe with a breeding area in the north of Canada and a winter range south to Peru and even Chile, avoids Central America and reaches the USA in spring by way of Cuba and Florida (Cooke 1905 and Lincoln 1935), a journey that may involve an over-water migration of more than 2,400 km. The Mourning Warbler *Oporornis philadelphia* is a species which breeds as far north-east as Nova Scotia, but it migrates south westwards into the Mississippi Valley to reach Colombia through Central America; it avoids the south Atlantic states of the USA and the West Indies. In Belize it is an uncommon transient. The closely related and very similar Connecticut Warbler *Oporornis agilis*, breeding in central Canada, migrates south eastwards towards the coast and leaves the USA through Florida for a winter area in Brazil and Venezuela. Russell did not record the Connecticut Warbler in Belize, but I found it present in small numbers in both autumn and spring. Cooke (1905) held that in autumn the American Golden Plover *Pluvialis dominicus* migrates from its breeding grounds in the Arctic

tundra eastwards to Labrador and Nova Scotia and thence over a wide stretch of the Atlantic to the Lesser Antilles and South America, and that in spring it returns by way of Central America and the Mississippi Valley. The main line of its autumn and spring routes are separated by as much as 2,400km.

The Orchard Oriole, which nests in central and eastern USA, winters from southern Mexico to Colombia and Venezuela. Its migration routes in spring lead it over at least part of the Gulf of Mexico. In autumn its routes appear to be farther west, along both coasts of Central America. The greatest migrant of the *Icteridae* is the Bobolink, a very common breeding bird of Canada and much of north and central USA; it winters in the swampy regions of east Bolivia, northern Argentina and southern Brazil after making an enormous flight across the Americas. Its route, which Lincoln (1935) named the "Bobolink" route, leads up and down the eastern states of the USA. Populations in the west travel along the "Road" as the breeding area was extended. Most birds cut across to Yucatan and then on south. In Belize they turn up on the Cayes in small numbers. In spring Bobolinks take the same routes in reverse but with a greater tendency to return by way of Central America (Lincoln 1935). Cooke (1905) sums up the matter as follows: "10 species reach Panama or South America by way of the West Indies; 49 by way of the Gulf of Mexico and Central America and 9 by an unknown route." It has been suggested that nocturnal migration may serve the purpose of protecting from birds of prey the smaller species that are forced to make sustained flights far from cover. Speaking of North American migrants, Brewster, many years ago, made interesting generalisations on the subject. He held that timid, sedentary or feeble-winged birds migrate by night, while bold, restless, short-winged birds migrate chiefly or freely by day. Being accustomed to seek their food in open situations they are indifferent to concealment. Birds of easy and tireless wing, such as the Barn Swallow which habitually feed in the air, fly exclusively by day often obtaining their food as they go (Brewster 1886).

The many world-wide ringing schemes have shown that birds are able to return from distant parts of the world to the self-same spots to breed, and that they commonly do so. The question of return to the same winter locality was more debatable. Systematic ringing in the southern United States proved that return to the winter locality is often as accurate as the return to the summer locality. Resightings in 1983 of seven birds ringed in 1982 at Airport Camp supported this and helped to confirm that the consistency of migration is inherent, and a high degree of regularity is one of its characteristic features. Furthermore, it appeared from observations around Airport Camp that some wood-warblers, in particular the American Redstart, Wilson's Warbler *Wilsonia pusilla* and the Black-and-White Warbler, and the Least Flycatcher *Empidonax minimus* and Gray Catbird *Dumetella carolinensis* took up winter territories which in some cases they defended.

There are several interesting non-passerine land birds that migrate south to Belize. These include the Yellow-billed Cuckoo *Coccyzus americanus* and the Yellow-bellied Sapsucker *Sphyrapicus varius*. The former is a fairly common transient in spring, being found both inland and on the Cayes. The latter, a small woodpecker that feeds on sap and insects in the forests across central Canada, has to move south when the sap

ceases to flow. In Belize it is at the extreme limit of its winter range. Belize has four resident and one migrant species of kingfisher; from September the Belted Kingfisher *Ceryle alcyon*, a large kingfisher, vacates the northern edge of its range in Canada and is moderately common on the Cayes, beaches and in the larger lagoons of Belize. Migrant raptors to Belize are few in number except for the American Kestrel *Falco sparverius* which is fairly common in the more open areas, but huge flocks make their passage along the spinal chain to the west through Guatemala.

The forest habitats are, in general, the more important for many of the migrants. The rapid clearance of Belize's forests and the adoption of intensive agricultural methods will probably result in major reductions in the numbers of forest dwelling migrants. The more versatile species may expand into niches left vacant by competitors with more inflexible requirements.

This brief glimpse of some of the many winter visitors to Central America and Belize indicates the diversity of the migratory behaviour. The dangers are countless. Increasingly detailed studies show clearly the multiplicity of solutions available to these birds.

REFERENCES:

- Brewster, W. 1886. Bird Migration. *Memoirs of the Nuttall Ornithological Club*.
- Cooke, W.W. 1905. Routes of Bird Migration. *Auk* 22.1.
- Cooke, W.W. 1913. The Relationship of Bird Migration to Weather. *Auk* 30.205.
- Hubert, P.J. 1981. Some Notes on American Wood Warblers. *ABWS Adjutant* 11.
- Keast, A. et al 1980. *Migrant Birds in the Neotropics*. Smithsonian Institution, USA.
- Lincoln, F.C. 1935. The Migration of North American Birds. US Dept Agr. *Circ* No 363:1-72.
- Moreau, R.E. 1972. *The Palaearctic—African Bird Migration Systems*. London.
- Peterson, R.T. & Chalif H.L. 1973 *A Field Guide to the Mexican Birds*. Boston, USA.
- Petzi. H.N. 1976. *Birds of the British Honduras Keys*. St. Louis University, USA.
- Russell, S.M. 1964. *A Distributional Study of the Birds of British Honduras*. Kansas, USA.
- Skutch, A.F. 1966. A Breeding Bird Census and Nesting Success in Central America. *Ibis* 108.1.
- Weyer, D. & Ford Young, N. 1983. *A Check List of the Birds of Belize*. Alabama, USA.