Daylight Clustering of the Dusky Wood-Swallow

By ROY P. COOPER,* Melbourne

The remarkable behaviour of the Dusky Wood-Swallow, *Artamus cyanopterus,* clustering together, in very tight groups when perching, has been the subject of comment in ornithological journals and elsewhere, at irregular intervals, since the days of John Gould, about 1840. However, it is not often observed by those people who are interested in bird study, although it undoubtedly occurs when there are no humans present to witness it, let alone record it.

Although the observations are few in number they are mainly in connection with the Dusky Wood-Swallow, with one or two records for the Black-faced Wood-Swallow, *A. cinereus* (Chisholm, 1948), and the White-browed Wood-Swallow, *A. superciliosus* (Hindwood, 1956). In addition it is also known for the Rainbow Bee-eater, *Merops ornatus* (Chisholm, 1929), and the European Swallow, *Hirundo rustica* (Marshall, 1957).

An excellent description of the method of clustering by the Dusky Wood-Swallow is given by Mrs. Edith Coleman, in the *Victorian Naturalist* (1944). The observation was made at 8 p.m. on February 26, 1944, and about 80 birds were in the cluster "Like a swarm of bees. They suggested a nightmare cluster of sawfly larvae. Some were head up, others head down, while the rest clung horizontally or at varying angles, so that the tail and wings protruded like spines of an echidna."

Another interesting record is a notation in one of the registers of specimens in the Australian Museum, Sydney, that a Dusky Wood-Swallow was one of 27 shot while hanging in a cluster of over 100 in a dead tree at dusk. The date was March 1901 (Hindwood, 1956).

From the published records it would appear that the largest number of Dusky Wood-Swallows that have been observed clustering together at one time is 200. A. H. Chisholm (1929) quotes this number in *Birds and Green Places,* and again in *Bird Wonders of Australia* (1948).

More information on this interesting observation is given by Hindwood (*Loc. cit.*) "Mr. Chisholm has lately told me that he had some discussion on the subject in the Brisbane *Daily Mail* in 1922, and that one of his contributors, C. H. Jerrard, stated that he had once seen, in a clump of mistletoe, a cluster of Dusky Wood-Swallows that contained approximately 200 birds". Chisholm further stated "When they filled an open tree-fork, however, they might have been mistaken in the dim light for a large bird's nest."

Although the records are meagre, in the case of the Dusky Wood-Swallow they are all in connection with clustering in the evening.

* Chairman, Committee of Management, Wilson's Promontory National Park

In view of the rarity of published observations it is difficult to understand the statements in some of the modern bird text-books. In *Birds of Western Australia,* Serventy and Whittell (1967), in the final paragraph in the section dealing with the Dusky Wood-Swallow, state "At dusk, like most other wood-swallows, the birds cluster very closely together to roost". The other five species of wood-swallows have full notes about each type of bird, but there is no mention of clustering in any of them.

Another definite statement that requires substantiation is in *Birds in the Australian High Country,* edited by H. J. Frith (1969). On page 453 it is stated "Particularly during the non-breeding season, they roost at night in dense clusters, sometimes up to 200 individuals, hanging onto the trunk of a tree". Are these "200 individuals" the ones seen by Jerrard almost 50 years ago?

In over 40 years of field work on birds I have never had the pleasure of seeing any species of bird clustering in the evening. The White-breasted Wood-Swallow, *A. leucorhynchus,* perch very close together on a limb, but this is not "clustering".

In areas where wood-swallows were roosting I have spent many evenings, in the company of K. A. Hindwood and others, searching for any sign of clustering, without success. Some years ago there was a small group clustering in one of the outer eastern suburbs of Melbourne, but I was unable to visit the area.

Professor A. J. Marshall (1957) endeavoured to explain this phenomenon but found that "It is difficult to imagine what advantage adult birds would get from clustering together on a warm and sultry February evening".

After much discussion Marshall summarised his conclusions as follows.

> "1. Clustering in wood-swallows and other birds is a thermo-regulatory device. By collectively reducing their exposed surface and increasing mass the clustering birds conserve heat.
>
> "2. The habit is commonest during the non-breeding season because this spans the colder months of the year.
>
> "3. It is not known why *Artamus cyanopterus* reputedly clusters in relatively mild weathers. Precise observations, including air-temperature records, degree of maturation and sub-cutaneous fat deposition, are required."

It is difficult to understand why the Dusky Wood-Swallow should be singled out of the Artamidae for this behaviour. It has been suggested that the birds, unlike the other species in the genus, are non-migratory; only a small nomadic movement taking place in the autumn and winter months.

This may apply in the more northern parts of its range, but on Wilson's Promontory there is a complete migration each year. This species has been recorded nesting in this area for the months of November, December, January, February and March, yet in the ten years of the Ecological Survey of the Birds of Wilson's Prom-

ontory from 1961 to 1971, although many hundreds of Wood-Swallows have passed through the area, there is only one record of one bird for the months between April and September.

Throughout this decade there has been no behaviour that would even indicate that the birds intended to cluster, although parties varying from 20 to 170 birds in total number have been observed on many occasions.

Many of the birds that migrate to Tasmania to nest each year, pass through Wilson's Promontory, and most of them leave that State in the autumn. M. S. R. Sharland (1945) states "At long intervals the bird has been reported during winter along the east coast, but only in small numbers. It seems that the great majority migrate beyond the State".

The main migration route from Tasmania appears to be through the Furneaux and Kent Groups to Wilson's Promontory, with a minor movement from north-west Tasmania through King Island to Cape Otway (Mollison, 1960, 1962; Thomas, 1968; Green, 1969, 1971).

The main southward migration of the Dusky Wood-Swallow to Wilson's Promontory, with a large proportion passing onto Tasmania, is during the months of September and October, with a northward return journey taking place during the months of February, March and the early part of April. No birds have been seen on the Promontory during May.

One of the largest flocks observed during the southward movement totalled 20 birds, although parties of 30s, 50s, and up to 170, have been recorded for the autumn migration.

October 2, 1971, was an overcast day, with bursts of sunshine between heavy rain squalls, and strong westerly winds. In the afternoon the squalls increased in frequency and strength, and the temperature dropped appreciably.

On Yanakie flats a single car track crosses the grasslands to the west of the main road, and passes through a thicket of Coast Tea-tree, *Leptospermum laevigatum,* to the Twin Swamps. This thicket is extremely dense and it would be difficult for a man to push his way through it. However, where the grasslands merge into the thicket there is a mixture of tea-tree bushes and grasses, with a few very large Coast Banksia, *Banksia integrifolia,* and smaller bushes of the Drooping She-oak, *Casuarina stricta.*

When we were passing through this intermediate zone and about to enter the very narrow track through the thicket, at about 2 p.m., several Dusky Wood-Swallows were observed. A search of the area disclosed 12 birds, on the northern side of the track. They were moving from bush to bush without any apparent direction and, at times, it appeared that they were interested in a particular limb or bush, but there were no signs that the birds were nesting. Occasionally a bird would catch an aerial insect, but most of the foraging was done on the ground.

Although on the open parts the wind was strong in gushes, this area was well protected from the westerlies by the dense thicket of tea-tree, behind which were the tall sand-dunes of Darby Beach.

The birds, in a loosely formed migrating flock, gradually moved southward, and within half-an-hour were on the south side of the car track.

Leaving the birds we went through the thicket to the lakes, and it was about 3.30 p.m. when we returned to the area, fully expecting to find that the wood-swallows had departed southward.

We emerged from the thicket during a very heavy rain-squall, and the wind, which had changed to the south, was now blowing across the track. Stopping the car we looked around for any sign of the Wood-Swallows. The gale-force winds were blowing from the direction in which the birds were heading when we had last seen them and it was most unlikely that they would have been able to proceed very far on their southerly course.

The wind gushes were strong enough to rock the car, a heavy Holden Kingswood, and birds of all species had, apparently, sought shelter.

As we sat waiting for the squall to pass, we suddenly saw a cluster of birds on the lee or northern side of a *Banksia integrifolia*. The old tree, which was on the side of the track and some 25 feet from the car, was about one foot in diameter, and bare of all branches up to 20 feet from the ground. At a height of 15 feet there were the remains of a limb that had broken off flush with the trunk.

On this break the Wood-Swallows were clustering, sheltered from the wind gusts and rain by the solid trunk of the tree.

Each bird was hanging onto the uneven bark of the tree, and they were clustered very close together, with their heads buried in the mass of bodies, and their tails and wing-tips protruding like a "nightmare cluster of saw-fly larvae".

When the squall passed I went round the back of the car, from where I was able to obtain a much better view of the clustering birds. Suddenly one bird broke away and within seconds the whole flock appeared to "explode" away from the tree, and disperse into the surrounding bushes and grasses. We counted 20 birds in this flock, whereas we had only recorded 12 birds originally, and they now resumed the movements and behaviour that we had witnessed some two hours previously.

These Wood-Swallows, being a southward spring migrating flock, would be adult birds, with a full body cover of feathers. Although the temperature had fallen, the cold had not the chill of winter, and there would not have been the need for the birds to use the thermo-regulatory clustering device to conserve heat.

It is obvious that they did obtain protection from the full force of the squall. However, this came from the trunk of the tree and would have had the same result if each bird had adopted a separate perch, in the same position on the tree-trunk.

This incident has shown that the Dusky Wood-Swallow clusters for reasons other than night-time roosting and, as the late Professor A. J. Marshall states "Precise observations are required".

REFERENCES

Chisholm, A. H., 1929. *Birds and Green Places,* London.
Chisholm, A. H., 1948. *Bird Wonders of Australia,* Sydney.
Coleman, Edith, 1944. *Victorian Naturalist,* 61:44.
Frith, H. J., 1969. *Birds in the Australian High Country,* Sydney.
Green, R. H., 1969. "Birds of Flinders Island", *Records of the Queen Victoria Museum,* No. 34, Launceston.
Green, R. H., and McGarvie, A. M., 1971. "The Birds of King Island", *Records of the Queen Victoria Museum,* No. 40, Launceston.
Hindwood, K. A., 1956. "Clustering of Wood-Swallows", *Emu,* 56: 165-66.
Marshall, A. J., 1957. "On the Function of 'Clustering' in Wood-Swallows", *Emu,* 57 : 53-54.
Mollison, B. C., 1960. "Notes on Tasmanian Birds", *Emu,* 60 : 55.
Mollison, B. C., 1962. "Notes on Tasmanian Birds", *Emu,* 62 : 112-114.
Serventy, D. L., & Whittell, H. M., 1967. *Birds of Western Australia,* p.412.
Thomas, D. G., 1968. "Tree-Martins heading out over Bass Strait", *Emu,* 67 : 230.

Birds of the Strathbogie Ranges

By GEORGE W. BEDGGOOD, Epping, Victoria

GENERAL

The account of the birds of the Strathbogie Ranges is the result of observations that I have made in the area, over the past ten years. In addition to the many visits made to these ranges during the course of my work, I resided for several years at Mooroopna and also at Caniambo. There were many opportunities for me to study the birds, and I was fortunate in being able to record their presence and habits over such a long time, and at all seasons of the year.

Ornithological literature directly relating to this area, that I have been able to trace, is very meagre. The main paper was written by A. W. R. Vroland in 1904, "List of Birds Found at Strathbogie, Victoria", *Emu,* 4 : 227-228.

DESCRIPTION OF THE AREA

The Strathbogie Ranges are situated in the north-eastern sector of Victoria, and lie between the Goulburn and Broken Rivers. In area it is slightly less than 300 square miles, and the elevation generally is between 2,000 and 3,000 feet. The country is mostly rugged, mountainous and, in the early days of settlement, timbered. The two highest points are Mount Separation and Mount Wombat.