



Grey Thrush presenting a flower petal to its image reflected in a mirror.

Photo. by Max Lippmann.



The association of nest material with courtship. Peaceful Doves mating. Male with rootlet in bill.

Photo. by M. S. R. Sharland.

The Use of Flower Petals in Courtship Display

By K. A. HINDWOOD, Sydney, N.S.W.

Instances of birds using leaves, twigs, stones or other objects during courtship display are not uncommon. No doubt the use of nesting material for such purpose is largely correlated with the breeding cycle. In some species there seems to be a close association between such forms of display and mating. Recently I watched a Little Pied Cormorant (*Microcarbo melanoleucus*) bring a leafy twig to its nest and immediately afterwards attempt to mate with the female on the nesting-platform (Centennial Park, Sydney, November 30, 1947).

The Red-browed Finch (*Aegintha temporalis*) often uses a long strip of grass when courting. In such cases it is customary for the male to perch on an exposed twig with the grass hanging from his bill: he will then bob up and down, holding his body in a rather stiff attitude. Usually a second bird, presumably a female, is present during these displays and I have observed mating to occur on several occasions. In a recent instance the female was seen to hop sideways along the branch towards the displaying male; after coition the grass was dropped and both birds flew away.

Not so frequently noted is the use of brightly-coloured flowers, or flower-petals as an aid to courtship display, or as a means of attracting the attention of a possible mate. Two such happenings have been recorded by A. H. Chisholm, who remarks—

It has been stated by Sir Ray Lankester that in cases in which extraneous objects are used by courting birds as lures, the suitors are of dull plumage. This is not always so. The male Koel Cuckoo, or 'Cooee-bird,' is blue-black, with red eyes, and is the only Australian cuckoo to differ strongly in colour from the female, and yet Mr. W. G. Harvey, a Queensland bird-student, states that the male Koel frequently seeks out the gaily-coloured petals of flowers and presents them to the lady of his choice in a most elegant manner. Evidently the Koel (which deposits its eggs in other birds' nests) has at least some domestic sense.

An even more striking example of a bright-plumaged bird using extraneous objects in courting has been given me by another friend in Queensland. He relates that he once saw a brilliant little red-and-black Wren (*Malurus melanocephalus*) paying marked attention to one of two females. As they flitted along they came abreast of a red canna in full bloom, upon which the radiant male flew to one of the flowers, plucked a petal, and returned to the fence, there continuing his flirtation—dancing round the demure Jenny Wren and waving the petal in front of her. The petal was quite as big as his whole body, but he carried it in an upright position, by the stem (*Bird Wonders of Australia*, 1934, pp. 197-8).

My own observations on this subject relate only to the Blue Wren (*Malurus cyaneus*), which I have been studying

closely for some months at Lane Cove, near Sydney, in an endeavour to ascertain the sequence of plumage changes in this species. On three occasions male Blue Wrens, in full plumage, were noticed using flower-petals during courtship display. A male was seen with an orange-yellow petal in his bill, pursuing a female, on May 18, 1947. A couple of months later (July 6, 1947) a male, between pursuit flights, was seen posturing in the presence of a female. The feathers of his head and ear coverts were puffed out, the body flattened and the feathers of the mantle and back expanded, the tail being depressed. All the time he held a small golden-yellow flower in his bill. Shortly afterwards this bird was observed flying up from the ground to a low overhanging shrub, *Phyllota phyllicoides*, in an attempt to obtain one of the blossoms, which seemed to be the same kind that he had had in his bill a few minutes earlier. The third instance was noted on August 17, 1947, when a male bird was seen with a yellow flower-petal in his bill. This bird adopted a rigid horizontal pose on a dead twig about two feet from the ground. He was then chased by another fully-plumaged male for a distance of some thirty or forty yards, still retaining the petal in his bill. One of the birds soon returned to the female, which remained in the shrub where the encounter first took place.

Mr. Norman Chaffer has kindly sent me the following interesting note on the subject—

Willoughby, near Sydney, 5.6.1922. Observed two male Blue Wrens trying to win the attention of a female. Each held in his beak a yellow material [? flower-petals]. Each would alight in front of the female and face her with the bill almost touching the ground, and with the tail held in a straight line with the head and body. They would remain motionless in this position for quite a while and did not utter any song.

In the foregoing cases the male Blue Wrens were courting and the extraneous objects used (probably flower-petals in all instances), apparently to attract the females, were bright yellow, or orange-yellow, colours which are in direct contrast to the bright blue in the plumages of the males. One can only conclude that such displays are in the nature of self-advertisement as a further means of attracting the attention of the female, apart from the usual, or normal, posturing and plumage-display.

I have elsewhere recorded (*Proc. Roy. Zool. Soc. N.S.W.*, 1940-1, August 11, 1941, p. 27, with photograph) the case of a Grey Thrush, *Colluricincla phaea* (Forster) (= *harmonica auct.*), that brought flower-petals to its own image reflected in a mirror and the photograph accompanying that account is reproduced here.

The interesting photograph by M. S. R. Sharland, of Peaceful Doves (*Geopelia placida*) mating, with the male bird holding a rootlet in his bill, graphically illustrates the association of nesting material with the breeding cycle.

Dipterous flies of the family Empidæ have been observed carrying brightly-coloured flower-petals during courtship display (see O. W. Richards, *Biol. Rev. Cambridge Phil. Soc.*, 1927, pp. 298-360; also K. C. McKeown, *Australian Insects*, 1st ed., 1942, p. 226).

Migration of Two Species of Honeyeaters

By K. A. HINDWOOD, Sydney, N.S.W.

Bundanoon (elevation 2,200 feet) is a popular holiday resort on the southern highlands of New South Wales, and lies about eighty miles south-west of Sydney. It was there, on May 2 and 3, 1947, that I watched an extensive migration of two species of honeyeaters, namely the White-naped (*Melithreptus lunatus*) and the Yellow-faced (*Meliphaga novæ-hollandiæ* = *chrysops auct.*). I had no way of ascertaining how long the movement had been in progress as I was not in the locality before May 2. However, it seemed to have ceased by May 4, on which day no migrating birds could be observed. Following an absence of several days I was again in the area on May 9 without seeing any evidence of migration.

The flight was first noticed at 10 a.m. on May 2, 1947. Flocks of two hundred or more birds were seen flying from one clump of trees to another, fifty to one hundred feet above cultivation paddocks. For the most part they were moving directly north. Between 10 a.m. and 10.30, several thousand birds passed over, generally at an elevation of from fifty to one hundred feet. They would congregate in the topmost branches, often on dead limbs, of trees on the crest of a ridge, to the south of which was a deep valley: after resting for a short while they would move off to the north. With but occasional breaks there was an almost continuous flight for more than an hour. Towards mid-day their numbers lessened. With fewer numbers passing it was possible to estimate how many birds passed a given spot. Between 12.10 p.m. and 12.25 p.m., for instance, the following count was made—flock of 56 travelling north, 20 north-east, 36 north, 50 north-east, 6 north, 5 north, 2 north, making a total of 175 birds for a period of fifteen minutes.

The next day, May 3, a thick fog blotted out the landscape until 9 a.m. When the fog lifted the flight was again in evidence. Between 9 a.m. and 9.30 a.m., many thousands of birds passed in flocks of up to two hundred or more. As on the previous day the number of birds (of both species) involved lessened considerably after the morning 'rushes.' Likewise, the direction of their flight was not so consistently north, but often to the north-east, and during the afternoon