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NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Cairns Public School, Abbott Street, Cairns, usually on second Tuesday in alternate months, at 8 p.m.

NEXT MEETING, TUESDAY, 9th JANUARY, 1945.

MEETING OF CLUB

Annual General Meeting, Monday, 11th September, 1944. Officers elected: President, Dr. H. Flecker; Vice-Presidents, F. R. Morris, S. E. Stephens; Hon. Secretary and Treasurer, J. Wyer; Committee, Mr. H. S. Sullivan, and Miss Jean Devanny; Hon. Auditor, J. Gorton.

Election of Members: Capt. H. M. Sullivan, Sgt. M. F. Leask.

Tuesday, 14th November, 1944.
Election of Member: Pilot Officer S. R. White, R.A.A.F., R.A.O.U.

An address was given by Pilot Officer S R. White on Protection of Birds Through Education.

BOOK REVIEW

23. Marvels of the Great Barrier Reef, North Australia and New Guinea. By D. Tennant, 50 pages with many fine photographic illustrations. Although acknowledgement is made to the N.Q. Naturalists' Club and its members for material supplied, the latter are in no way responsible for the numerous serious errors and irregular presentation of the matter, as no opportunity was afforded to view the proofs.

SOCIAL BREEDING BIRDS.

(By M. S. R. SHARLAND, R.A.O.U.)

Australian ornithology offers unlimited scope for investigation. Hitherto the systematics of taxonomy, the reshuffling of genera and determination of specific distinctions, have chiefly exercised the minds of ornithologists, while research into life-histories and the very intriguing question of how birds actually live has not been given the attention that it deserves. Due to the lack of field observers largely, few complete records exist of the life-histories of Australian birds. Thus there are many species and groups, some quite familiar to observers, whose habits await fuller investigation and study.

Of particular interest for me are the social breeding birds—birds which either nest together in communities or aid one another in constructing nests and rearing the young. Excluding the sea birds, there are in Australia several species of totally unrelated genera which, instead of separating into pairs for breeding, in the orthodox fashion, retain the flock habit throughout the year and breed under conditions that are obviously social and harmonious.

These can be listed as follows:—Apostle Bird **(Struthidea cinerea)**, White-winged Chough **(Corcorax melanorhamphus)**, Shining Starling **(Aplonis metallica)**, the Babblers

(**Pomatostomus sp.**), Fairy Martin (**Hylochelidon ariel**), the Sitellas (**Neositta sp.**), Dusky Wood Swallow (**Artamus cyanopterus**). Further observation might result in additions being made to this number, as other species are suspected of possessing social breeding habits, chiefly among the **Malurus** group, but as yet the evidence is not convincing. In fact, little or no detailed study has been given to the community behaviour of any of the above-mentioned species.

Most perplexing of the group are **Struthidea** and **Corcorax**. The nesting behaviour of each follows much the same pattern, so let me take **Corcorax** as being typical. The hub of the flock is the substantial bowl-shaped mud nest, built on a horizontal limb at various heights, according to the type of vegetation among which the species lives, its life revolves about this nest, which is shared by the community. And a community, or flock, may consist of from eight to twenty birds.

My records of egg clutches extending over several years, in different parts of Australia, show that four is the average number laid; in one instance the birds were incubating only two eggs, and the largest recorded clutch is eight. There is only one nest to each flock. As there is no apparent difference in the appearance of the sexes it is not possible to determine the ratio of males to females in a flock, but in this respect equality is assumed. If this is so, then comes the difficulty of deciding whether eggs are laid by all the female members of the flock or by a limited number. A clutch of two eggs would indicate that the act of laying was confined to one individual; on the other hand, a clutch of four suggests that two birds shared the laying, while a clutch of eight definitely, I think, would point to the work of at least three different birds.

And the remainder of the flock what of these? Do they consist of unmated females whose maternal instinct is satisfied by sharing the work of incubation and feeding the young, are they mated but prevented from laying, or are they all males? Were the sexes clearly defined by exterior characters the answers would be simple. As it is, both in **Corcorax** and **Struthidea**; the sexes being alike superficially, the problem must remain unsolved until an anatomical examination is undertaken of each individual, which, of course, would involve extensive collecting of specimens.

That different individuals do share the work of nest construction, incubation, and tending of young, I have proved more than once from close observation. Practically all members of the flock, both in **Corcorax** and **Struthidea**, aid in building the grass-reinforced mud nest, and the same nest will be used in successive breeding seasons, with a little fresh mud added to the rim. When it comes to deposition of eggs, I consider that females with the strongest "personality" are able to obtain priority, and although the various individuals usually exist in complete harmony together, at this period it is the birds which are relatively the most pugnacious that succeed in laying. A bird in possession of the nest will counter the approach of another by raising its wings, snapping its beak, and creating a display of anger or resentment which is generally sufficient to drive the unwanted individual from the tree; but this same sitting bird will unhesitatingly give way to another member of the flock who will come, possibly to lay, or to take its share of incubation. Probably, here, a "pecking law" exists as in domestic fowls, individual birds possessing certain rights, according to age or temperament, which are acknowledged by inferiors.

Whatever may be the advantages of the social behaviour of these two mud-nest builders, it is obvious that it results in mortality among their offspring. In the case of **Corcorax** particularly, the nestlings would appear to suffer adversely from possessing an abundance of "foster-parents." Seldom are more than two young ones reared to maturity, although originally the nest may have contained six eggs, all being hatched. Frequently I have observed dead young in the nest and on the ground below, and out of one nest which contained five newly-hatched young a single bird only lived to leave it. Over-indulgent "parents" appear either to kill them with too much food or trample them under foot in the various change-overs made by

different birds desirous of mothering them. Thus it is that the breeding flocks from year to year generally remain numerically static. Both species are well distributed over the inland districts of Australia, and in places **Corcorax** comes close to the eastern coastline, but nowhere are they seen in large numbers during the breeding season.

Discussion of these two forms leaves little space for mention of the equally interesting habits of other sociable species which I have listed. So I shall outline them but briefly.

In North Queensland the commonest of these is the Shining Starling. In a group of three trees growing on the bank of the Russell River, near Babinda, I recently counted 76 nests of the species, roughly globular objects composed of dried grass, attached to the finer branches, often so close to each other as to be touching. In temperament there is a sharp contrast between this species and the mud-builders, already discussed. **Aplonis** is noisy, at times quarrelsome, and each pair owns a nest in the colony which it defends against intruders of its own species. As the birds sometimes have to travel a good distance to obtain suitable nesting material, individual members of the community have no compunction about saving themselves trouble by stealing from their neighbours. Hearing much agitation and chatter from birds about one group of nests I looked up to see a bird, poised on fluttering wings, pulling a loose strand of grass from the bottom wall of a nest, and though attacked by the owners who were noisely encouraged by others nearby, it flew off with the stolen article in its beak and hurriedly entered its own nest in another part of the tree. I have seen this thieving to occur in other colonies, much the same thing taking place in a colony under observation at Mossman.

The lives of various kinds of **Pomatostomus** (Babblers) also circulate about the nest, which, in this case, is a large bulky object, domed, and made of sticks, leaves and grass. The work of building is shared by members of the community, which may number up to eight or ten birds, and though only a single nest is built to accommodate the needs of a small flock, a large company may have three or four nests, in the same tree or in adjacent trees. Furthermore, the nest may also be used by a bird quite unrelated to the owners, for, occasionally, the Blue-faced Honeyeater (**Entomyzon cyanotis**) builds its open cup-shaped nest on top of the larger structure, using the Babblers' nest as a foundation for its own.

Of the other community species, the Sitellas (Tree-Runners) aid one another in building the nest, the assistants, I believe, being the young ones of the first brood or of the previous breeding season. The cryptic pattern of a Sitella's nest is such that the object is practically invisible to all but a well-trained human eye, situated as it is in a dead fork high in a tree, but curiously anomalous is the habit of the bird to fuss and twitter loudly whenever it visits it, a practice which at once reveals its position.

Hylochelidon ariel (Fairy Martin) employs a concerted effort to construct a group of nests, each small bird bringing a pellet of mud in its beak, to add to the nest of its neighbour in the colony if the building of its own is finished.

Although it is not a common practice for **Artamus cyanopterus** to share in the work of nest building, I have recorded instances where more than one pair of these birds has aided others to build the frail stick nursery. In other birds, if we had time to study them more closely, these principles of mutual help and co-operation would probably be proved to exist to a far greater extent than we suspected.

EDIBLE PLANTS OF NORTH QUEENSLAND.

By H. FLECKER.

Continued

ANACARDIACEAE:

81. **Semecarpus australiensis** Engl., Tar Tree.
Soft swollen peduncle supporting hard inedible fruit may be eaten raw or cooked.

82. **Pleiogynium Solandri** Engl., Tulip Plum.
Fruit very acid when fresh. If buried in sand for day or two is quite refreshing.

PORTULACACEAE :

83. **Portulaca oleracea** L., Purslane.
Whole plant eaten raw or cooked. Splendid substitute for spinach. Tap root tastes like radish.
84. **P. australis** Endl., Me-mama.
Rootstock roasted and eaten (Bailey).

AMARANTHACEAE :

85. **Amaranthus spinosus** L., Needle Burr.
Whole plant eaten as green vegetable.
86. **A. leptostachyus** Benth.
Young shoots make excellent greens when cooked.
87. **A. pallidoflorus** F. Muell.
Young shoots make excellent greens when cooked.
88. **A. Mitchellii** Benth.
Used as a vegetable.
89. **A. interruptus** R. Br., Native Amaranth.
Young shoots make excellent greens when cooked.
90. **A. viridis** L., Green Amaranth.
Young shoots make excellent greens when cooked.
91. **Achyranthes aspera** L., Chaff-flower.
In East Indies young leaves eaten.

CHENOPODIACEAE :

92. **Enchylaena tomentosa** R. Br.,
Fruit eaten raw.
93. **Suaeda maritima** (L.) Dumort. Sea Blite.
In East Indies young plants after boiling well, eaten.

AIZOACEAE :

94. **Susuvium portulacastrum** L., Seaside Purslane.
Whole plant after washing out excess salt, eaten raw or cooked.

NYCTAGINACEAE :

95. **Boerhaavia diffusa** L., Tah-vine.
Thickened leaves and somewhat fleshy stems cooked and eaten. Roots roasted and eaten. Mealy sweet taste (Palmer).
96. **Elaeagnus latifolius** L., Millai Millai.
Fruit eaten and said to be pleasant.

LEGUMINOSAE :

97. **Psoralea badocana** Benth., A-maga.
Roots scraped, roasted and eaten.
98. **Sesbania grandiflora** Pers., Large-flowered Sesbania Pea.
Young leaves, young pods, large flowers and flower buds cooked and eaten. (Do not eat mature seeds.)
99. **S. aegyptiaca** Pers., Ngean-jerry.
Green pods as well as seeds nutritious (T. Gulliver).
100. **Arachis hypogaea** L., Peanut.
Seeds eaten raw or cooked.
101. **Hardenbergia retusa** Benth., Kong-an.
Roots roasted and hammered on stone before being eaten (Roth).
102. **Erythrina vespertilio** Benth., Grey Corkwood.
Roots eaten raw. (Roth).
103. **Mucuna utilis** Wall ex Wight, Native of Tropics.
Dried ripe seeds eaten roasted.
104. **Phaseolus Mungo** L., Komin.
Roots after being baked, eaten (Thozet).
105. **Vigna vexillata** Benth.
Pods used as French beans.
106. **V. marina** (L.) Merr. Beach Bean.
Pods and seeds eaten.

(To be Continued)