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ECOLOGICAL NOTES ON COMMON BIRDS IN FIJI

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Second and Final Installment

COMPARATIVE SUMMARY OF BIRD ECOLOGIES

<u>Name</u>	<u>Habitat</u>	<u>Food</u>	<u>Aggre- gations</u>	<u>Calls</u>	<u>Active all day?</u>	<u>Present all year?</u>
Orange-breasted Honeyeater	Trees & garden	Nectar	1-2	Chirp	Yes	Yes
Wattled Honeyeater	Trees	Nectar	1-2 or 10-20	"kikau" & "tweets"	Yes	No
Collared Lory	Trees	Nectar	6-12	High squeak	Yes	No
Triller	Fences & fields	Insects	2	Harsh chirp	Yes	Yes
White-eye	Hedges & trees	Insects	6-12	"mewing" whistle	Yes	Yes
Broadbill	Trees & wires	Insects	2	Chirp & whistle	Yes	Yes
Wood-swallow	Wires	Insects	1-2	Twitter	No	Yes
Kingfisher	Wires	Insects etc.	1	"sa sa"	No	No
Parrot-Finch	Trees & fields	Buds & grass seeds	2-30	High trill	No	Yes
Strawberry Finch	Fields	Seeds	2-50 (to 300)	Sparrow- like	No	Yes
Java Sparrow	Fields	Seeds	2-50	Low twitter	No	No
Turtle Dove	Fields	Seeds	2-10	"cooing"	No	Yes

<u>Name</u>	<u>Habitat</u>	<u>Food</u>	<u>Aggre- gations</u>	<u>Calls</u>	<u>Active all day?</u>	<u>Present all year?</u>
Bulbul	Trees & gardens	Fruits etc.	2-50	Thrush- like	Yes	Yes
House Mynah	Fields	Insects etc.	2-15	Whistles & squawks	No	Yes
Field Mynah	Fields	Insects etc.	2-15 (to 40)	Whistles & squawks	No	Yes

DISCUSSION

COMPETITION BETWEEN SPECIES

For purposes of this discussion, competition is considered to occur when two or more species attempt to utilize the same food or space. This definition is used in testing two hypotheses:

1. That there is intense competition between closely related species, and
2. That introduced species displace indigenous species (see Stoner 1924, Mayr 1945, and Watson 1960).

The peaceful coexistence of the two mynahs would appear to cast doubt on the validity of the first hypothesis. Insects, seeds, fields, and perches are sufficiently abundant to support dense populations of both species at the K.R.S. There was considerable intraspecific squabbling but only one interspecific confrontation was observed, and that a vocal dispute between flocks near a drainpipe nesting site. To be sure, there are differences in distribution and aggregations which may serve to minimize competition.

With the two honeyeaters, one instance of conflict was observed when the larger Foulehaio disturbed Myzomela feeding on coconut nectar. Generally, however, the Myzomela was able to utilize a wider range of flowers for longer periods during the year and did not compete with the Foulehaio. Myzomela was undisturbed by other birds and gave one striking display of territorial defence by driving away a Kingfisher. Simultaneous feeding by Foulehaio and Phigys on African Tulip trees at the K.R.S., and coconut palms elsewhere, was noted.

The three weaver-finches were rarely active in the same place at the same time. However, separate flocks of the Parrot-Finch and the Strawberry Finch sometimes fed on the same plot of maturing rice or grass. The Java Sparrow would be more apt to compete with the Malay Turtle Dove than with other weaver-finches, since both the Sparrow and the Dove fed on dry seeds.

Most of the species which subsisted primarily on insects were so specialized that competition would be unexpected. The only overlap observed was in the foraging zones of the Triller and the two mynahs. Even then, the Triller was most apt to feed at the edge of a pasture while the mynahs were near cattle in the center of the field.

In short, it would appear that, owing to distributional segregation and food specialization, little competition occurred between species in the same families (Sturnidae, Ploceidae, and Meliphagidae), certainly no more than that which occurred between species in different families (Psittacidae-Meliphagidae; Ploceidae-Columbidae; or Sturnidae-Campephagidae).

This brings us to the possible displacement of indigenous species by introduced exotics. During the period of study, there was very little evidence that the introduced species were adversely affecting those native to Fiji. The mynahs are noisy and aggressive, but the only species they were seen to disturb was the Bulbul. Furthermore, the mynahs, the Bulbul, and the introduced seed-eaters apparently filled niches only

partly utilized by native species. Of course, it may be argued that displacement occurred when the exotics were first established. It is conceivable that the Bulbul drove fruit-eating rails, parrots, and pigeons away from the lowlands. However, predation by rats, cats, pigs, and the mongoose on these slow-breeding species, many of them ground-nesters, would offer a more likely explanation of such disappearances. Incidentally, there is no record of native species in Fiji being reduced by introduced avian diseases as happened in Hawaii.

It seems probable that certain native species have actually increased since the lowlands of Fiji were brought under cultivation. The Parrot-Finch has adapted its diet to include rice and introduced grasses. The honeyeaters and the lory utilize flowers in ornamental plantings. Even certain of the native insect eaters may have benefited by the availability of perches along roads and insects in fields.

ECONOMIC IMPORTANCE OF SPECIES

Of those birds which are agricultural pests, the Bulbul is probably most important. It was observed eating chili peppers, grain sorghum, ripe bananas, and sweet potato flowers, and reported to be a pest of cabbages, beans, tomatoes, and apples. Those birds which can eat dry rice seeds, the Java Sparrow and the Turtle Dove, are also quite troublesome. They feed in seedbeds, in drilled fields, and on lodged rice. Finally, there are the two smaller weaver-finches, Erythrura and Estrilda, which eat "milky" rice. All these pests of rice are most damaging on isolated or winter plantings.

The nectar eating birds, Phigys, Foulehaio, and Myzomela, may knock off some flowers but they also contribute to cross-fertilization and are reported (Ward 1940) to feed their young on insects.

When mynahs nest in the eaves of a house, there is often an annoying invasion of the bird mite, Ornithonyssus bursa. The mynahs have also been accused of spreading weed seeds (Stoner 1924). However, they do eat many harmful insects and are the only birds in Fiji which have the habit of flocking to heavy infestations of caterpillars.

Similarly, the Kingfisher and the Wood-Swallow have good and bad habits. Both may eat certain large insect pests but the Kingfisher also consumes young birds and insect-eating lizards while the Wood-Swallow devours bees and dragonflies.

In Fiji, the Triller, White-eye, and Broadbill are almost entirely beneficial. The bugs, moths, and flies which they consume are generally pests. However, none of these beneficial species is sufficiently abundant to check outbreaks of pests. Birds can be said to do more harm than good at the K.R.S., since the beneficial habits of the insect eaters do not outweigh the damage done by the fruit and seed eaters.

In conclusion, I would like to recommend that further ecological work be done in Fiji. There are many opportunities for research in both basic and applied ornithology. A study of the birds in the forested hills would be particularly interesting.

SUMMARY

These notes were taken at the Koronivia Research Station in Fiji between August 1960 and June 1962. Food, habitats, calls, and aggregations were recorded. Fifteen common species were studied: 9 indigenous, the Orange-breasted and the Wattled honeyeaters, the Collared Lory, the Triller, the Gray-backed White-eye, the Vanikoro Broadbill, the Wood-Swallow, the Kingfisher, and the Parrot-Finch; and 6 introduced, the Strawberry Finch, the Java Sparrow, the Turtle Dove, the Bulbul, the House Mynah, and the Field Mynah. In a discussion of competition, it was concluded that little competition occurred either between closely related species or between indigenous and introduced species. In an assessment of economic importance, it was considered that the damage done by fruit and seed eaters outweighed the benefits afforded by insect eaters.

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FIELD NOTES from Ronald L. Walker, District Wildlife Biologist, Hilo, Hawaii

The following field notes may be of interest to your readers:

July 23, 1962 - A light phased Hawaiian hawk (Buteo solitarius) was seen within the city limits of Hilo flying along the edge of a cane field bordering the grounds of the Hilo County Jail. The bird seemed to be hunting.

August 17, 1962 - In Kainaliu, Kona, a wedge-tailed shearwater (Puffinus pacificus cuneatus) hit a power line along the main highway and was recovered by a citizen who turned it over to the local game warden. The bird was put in a box to recover, but escaped during the night.

September 2, 1962 - A Hawaiian owl (Asio flammeus sandwichensis) was noted near the State Division of Forestry tree nursery in a densely populated and wooded area of Hilo. It perched high in a coniferous tree after a sailing flight over a residence.

Letter from Chester Fennell from Seoul, Korea, September 22, 1962:

"... Our glorious fall season has finally arrived with cool, refreshing nights and warm, sunny days. A wonderful time of the year just to be alive in Korea. In some respects I like it better than the spring with all its hustle and bustle of new life, sprouting greenery, and rapid change. (Is this preference a sign of increasing years? Perhaps.)

"The shorebird migration is rapidly drawing to a close and I must say it's been one of the most interesting and productive I've yet witnessed in the Far East. The really OUTSTANDING observation of the season was the sight of no less than 30 Nordmann Greenshank (Tringa guttifer) on the salt flats along the coast of the Yellow Sea approx. 25 mi. WSW of Seoul on 15 September. This is the very first time in my whole life that I have seen the species, which is, as perhaps you know, one of the rarest shorebirds in the world. It is very similar to the regular Greenshank (Tringa nebularia) but has shorter legs, a stouter bill and a quite different call note. It nests in NE Siberia and Sakhalin but very little has been recorded of its habits. I am presently writing to all the leading Museums in the States & Europe inquiring as to material they may have on hand of the species and any reference records available. No doubt the Russians have done most of the research on the species. Too darned bad their publications are so difficult to obtain or to even learn of.

"I am seriously considering a birding trip to Siberia early next summer in hopes of finding many of the shorebirds on their nesting grounds and presently trying to learn of a Russian ornithologist or two who might be in that region who would be willing

to guide me to such spots. The local command here appears to have no objection to such a visit and will willingly cut orders provided one works out his own entry and transportation. The Japan Travel Bureau is most helpful in such matters and I'm banking strongly on them to make the necessary travel and diplomatic arrangements. No doubt Vladivostok will serve as the port of entry from some port in Hokkaido such as Hakodate. What a thrilling experience this should prove - if it works.

"I shall make sincere efforts to keep in touch with you in the future and not let the years ride by in silence as has been my habit in the past. After all, the Islands and what few good friends like you I have left there shall always retain a very warm spot in my aging heart and I often, often think of you all in spite of apparent neglect letter-wise. ..."

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EDITOR'S NOTE:

On September 5th, Hiroyuki Morioka, a friend of Dr. Chester Fennell, was a visitor from Kyoto. He was on his way to the University of Illinois at Bloomington, where he will study for his doctorate in ornithology.

LARUS ARGENTATUS VEGAE COLLECTED ON MIDWAY ISLANDS

A specimen of gull was found dead on the beach at Sand Island, Midway Islands, in April, 1961. Through the kindness of Mrs. J.B. Burke, wife of Captain Burke, Island Commandant, this bird was preserved in refrigeration and brought down to Bishop Museum by Mr. R.F. Stockstad, May 1, 1961. It was skinned, and sent to the American Museum of Natural History for identification in March, 1962. Dr. Dean Amadon wrote that, since it was an immature bird, there had been delay in arriving at its identification; the ornithologists not being sure whether it was Larus argentatus or Larus Vegae. They submitted it for study to Dr. A.L. Rand, of the Chicago Natural History Museum, who called it Larus argentatus vegae, and returned it to New York. The American Museum of Natural History returned it to Bishop Museum, where it arrived on August 2, 1962. The author of this species appears to be Palmer, although Larus vegae is also credited to Stejneger. Bishop Museum contains a skin collected by W.A. Bryan on Marcus Island (No. 2069) and P.E.H. Bompke, who worked for Hackfeld and Co. at the guano diggings, collected a specimen of Larus argentatus smithsonianus Coues (No. 4539) in April, 1906.

E.H. Bryan, Jr.

NOVEMBER ACTIVITIES:

- November 6 - Board meeting at the Auditorium of the Honolulu Aquarium at 7:30 p.m. Members are always welcome.
- November 11 - Field trip to see shore birds, led by Mike Ord. Meet at the Library of Hawaii at 8:00 a.m.
- November 19 - General meeting at the Auditorium of the Honolulu Aquarium, 7:30 p.m. The evening will be devoted to a discussion by John Bowles and Mike Ord of the new bird book which is now ready for printing. Slides of the bird pictures included will be shown.

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