

challenge is considered. But we have ahead of us a detailed consideration of Lorenz' several books, and his answer must wait for another issue. I might state, however, that for the first time I have seen some value in the childish space race for the moon.

"The Territorial Imperative" is a remarkable book and the author has achieved amazing research accomplishments. Yet, as I reached the last page I had the feeling that the final word had not been uttered. I had saved the review of the book by Loren Eiseley in the New York Times Sunday book review section, and now I reread it, recalling that the reviewer had held reservations.

Eiseley writes: "Mr. Ardrey has written an able, provocative book that mirrors and expresses the self-doubt of a hard and violent time. It should be read, but with an eye to life's infinite variety, dynamism, and, dare I say it, educability. For of this latter, in its true forms, man knows as yet but little ..."

"Men are the carriers of strange secrets. I believe these are partly the secrets of the evolutionary future. Man is not really visible or definable. He has to be encountered. I suspect in essence Ardrey would agree, for as well as being a skilled writer, he is a dramatist. True men are as yet an emerging species that may not survive. It is important that their seed be nurtured in all of us by the catharsis of great art. This is the communicative advantage of that ill-defined, shape-shifting creature whose proud name Homo sapiens, the wise, is in itself a projection, a dream directed toward an unknown future."

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ROTENONE FOR BIRD HOUSES
By Raymond P. Potter

During the 1964 season, 40 new nesting boxes were in operation on about 15 acres in the towns of Enfield and Lincoln, Maine. One box was used by Bluebirds (Sialia sialis), the other 39 were used by Tree Swallows (Iridoprocne bicolor). No care was taken of these nests until after the young had left, at which time, upon cleaning the boxes, some were found to contain dead young. At the bottom of the nests a great number

of pupae of Protocalliphora sialis were noticed. The sole food of the Protocalliphora larvae is blood sucked from nestlings, thus producing a heavy drain on the vitality of these young birds.

During the 1965 nesting season, two boxes were used by Bluebirds and 37 by Tree Swallows; one was not used. After the eggs were laid, the boxes were opened and the eggs and nest dusted with 1% rotenone; when the nestlings were about ten days old the nests were again dusted with rotenone. Three of the boxes containing swallows were used as controls and were untreated during the nesting season. The nesting success in the treated boxes was 100%, while that in the three used as controls was slightly less than 69%. The untreated boxes contained seed chalcids (family Eurytomidae), Tachinid flies, a great many flea larvae, and many Protocalliphora pupae. These pupae were placed in hatching cages and from many of them adult flies were hatched. It was noted that several of these pupae failed to hatch, having been parasitized by the chalcid, Mormoniella vitripennis.

Shortly before the birds arrived in 1966, about $\frac{1}{4}$ inch of rotenone was placed in the bottom of the nest boxes, the old nesting material having been removed and burned the previous fall. Again three boxes were used as controls, with only the old nesting material removed, and no rotenone used in them. There was no significant difference in the nesting results in 1966 from those of 1965, being 100% for treated boxes and 70% for controls.

During the 1966 season, several adult swallows were taken from the treated boxes during the incubating and brooding period and checked with Dri-Die for ectoparasites. None were found. Only one swallow could be captured from the nests used as controls: this bird when checked with Dri-Die was found to be carrying many small external parasites, probably Mallophaga.

The type of rotenone used was ordinary 1% garden mix that can be purchased at almost any seed store. (Ed. note: Care should be taken that none gets into local streams and ponds as it can kill aquatic life in low concentrations.)

From this short study, it would appear that one of the greatest deterrents to the nesting success of hole-using birds are the ectoparasites, and that the use of rotenone in nest boxes in the spring is of much value in their control.

Much credit for this study is due to Professor I.N. McDaniel of Orono, Maine, who identified some of the parasites, and to Dr. E.A. Brower of Augusta who mounted some specimens and sent them to Washington for positive identification.

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