



In this issue we are to consider the second and very recent book of Robert Ardrey's entitled "The Territorial Imperative". It was a Book-of-the-Month Club selection last autumn and is published by the New York Atheneum Press. Clifton Fadiman writes of it: "One of the most intellectually exciting books of humanized science we have ever recommended in the Club's long history, a fascinating inquiry into the nature of the human animal, and an invaluable, as well as beautifully written, treatise on recent extensions of the boundaries of the biological sciences". It is nicely illustrated with black and white drawings by Berdine Ardrey, the author's wife.

What more can anyone ask? Well, it isn't out in paperback yet. If you hesitate at paying the hard cover price, borrow or steal it. Don't wait.

In his foreword, which he calls "A Preliminary Meditation", the author writes in his inimitable style: "Many a conclusion which I recorded in 'African Genesis', only five years ago, today lies a victim of biology's ruthless, incessant raids. I shall acknowledge my losses. And with equal truth, many of contemporary thought's most sacred convictions are being pressed toward oblivion by the biological onslaught. I shall point to their corpses along our way, if I do not in all mercy shoot them down myself".

"This book," he claims, "must do several things at once: it must collect and organize a fair sample of science's observations of territorial behavior in animals. It must record all that is salient concerning the history, the interpretations, and the scientific controversies bearing on the concept. And it must attempt to derive from biology's conclusions whatever illumination may exist concerning ourselves." In the end he shows exactly what he thinks we, at the top of the evolutionary ladder, are; and makes out a very convincing case for his thesis.

The first chapter asks: "Is Homo sapiens a territorial species? Do we stake out property, chase off trespassers, defend our countries because we are sapient, or because we are animals? Because we choose, or because we must?" He states further: "A bird does not fly because it has

wings; it has wings because it flies." This leads to the inference that man doesn't think because he has brains; he has brains because he thinks. "What truly leads the evolutionary procession is behavior".

In the chapter called "Arena Behavior" there are descriptions of fantastic avian behavior, particularly of bower birds. In "To Have and To Hold" you will read how the British Forestry Commission was stymied by the fact that roe deer were multiplying faster than trees could be grown to provide them with food. Then an observing young man discovered how to divert the deers' addiction toward territorial defense into an instrument of forest conservation. In "The Voyage of the Animals", descriptions of the amazing life cycle of eels, and of the homing of salmon, seals, and other species, are climaxed by accounts of the most recent experiments with the homing abilities of birds. There is also a miscellany of studies and observations on avian orientation with which the lowliest ornithologist should be familiar.

A chapter called "The Noyau" contains fascinating accounts of animal behavior along with provocative conclusions. There is reference to an article in a 1952 issue of "The Auk" by Frank Fraser Darling titled "Social Behavior and Survival". The author claims first that "to attain full potential, most animals need the stimulation of others of their kind", and further that "the breeding territory ... is a place with two focal points, the nest site and the periphery". Ardrey adds a third need, that of identity.

James Fisher wrote in 1954: "The effect (of avian population) is to create 'neighborhoods' of individuals who while masters of their own definite and limited properties are bound firmly and socially to their next-door neighbors by what in human terms would be described as a dear-enemy or rival-friend situation, but which in bird terms should more safely be described as mutual stimulation." It is this neighborhood of territorial proprietors bound together by a dear-enemy relationship that Ardrey calls the noyau, using a French word because there is no word for it in English.

Characteristic of creatures, and particularly of birds, is the concept of "individual distance", as well as the concept of "displacement activity". You learned about the latter from "The Herring Gull's World" by N. Tinbergen which we surveyed last summer. By way of illustrations there are, among others, descriptions of more incredible exploits of bower birds.

The chapter called "The Nation" defines the biological nation as a "social group containing at least two mature males which holds as an exclusive possession a continuous area of space, which isolates itself from others of its kind through outward antagonism, and which through joint defense of its social territory achieves leadership, cooperation, and a capacity for concerted action. Whether or not we are considering the true

lemur, the howling monkey, the smooth-billed ani, the Bushman band, the Greek city-state, or the United States of America, the social principle remains the same."

Ardrey proceeds to demolish two widely believed assumptions: first, "that the primate is obsessed with sex and that it is sexual attraction which holds primate groups together", and second, that fascism and communism are possible. It is a great relief to find substantial arguments to the effect that totalitarianism won't work in the long run.

This chapter winds up with two pronouncements: "There is not a species defending territory which is in the least danger of extinction. And there is not a species gaining outward antagonism through territorial defense which gains inward cooperation through compulsion." The author admits that dominance and subordination characterize all animal societies, and mentions the pecking order of barnyard fowl. But he adds: "territorial societies tend toward the equalitarian, exhibit the lowest gradients of dominance, present the fewest examples of physical conflict or punishment, and while attaining a maximum of social solidarity and cooperation, sacrifice a minimum of what a human being would call personal freedom."

Before continuing with the final chapters, we should note the delightful comments Ardrey makes about the life and research of Eliot Howard. It was almost two years ago that space in this section was devoted to "Territory in Bird Life" by Howard. Ardrey has dedicated his survey of territory to Howard, and includes fascinating glimpses of the man. Eliot Howard was a business man who commuted every day to work, but he always rose before dawn and went afield with his binoculars until breakfast at eight. He returned from work at teatime and played tennis, or chess, or discussed Plato with his five children.

It is characteristic of the thoroughness that Ardrey brings to his research that he tracked down the Howard family Nanny who was still living at an advanced age. "She recalls a startling night when the silent man came into the nursery and sat down and stared at her ... and said to her, out of nothing, 'Nanny! it's territory. That's what everything's all about. Territory. Territory.' It gave her quite a turn."

Incidentally, all the leading contemporary ethologists are mentioned in the course of the narrative, thus providing the reader with a "Who's Who" in the field of behavior studies. The particular research findings of each authority are mentioned, and enough intriguing titles of books are included to counteract boredom for anyone marooned on a desert island.

The last chapters are more concerned with man than with lesser forms of animal life, though studies of the latter are still referred to by way of persuasion. The author comes to a realization that without war there are too few behavioral outlets which satisfy man's three needs: stimulation, security and identity. Then the answer of Konrad Lorenz to this

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