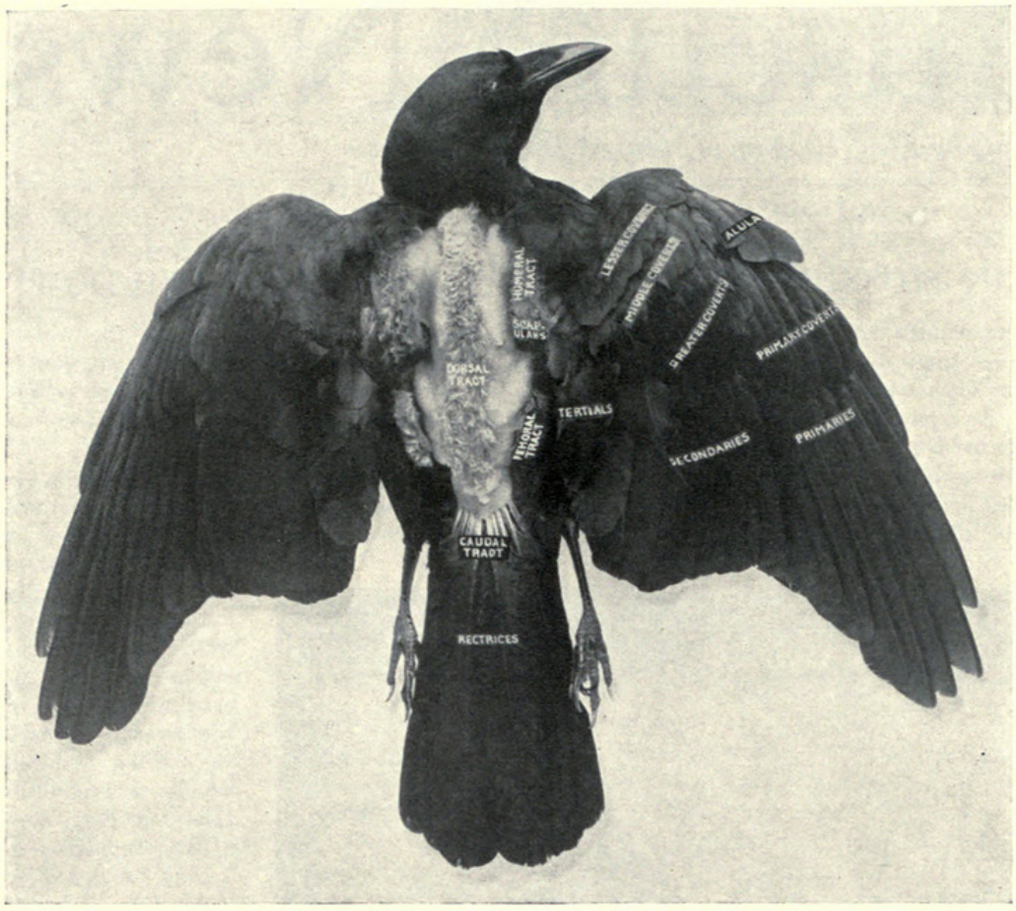

The Feather Tracts of a Crow

One of many items in the "What is a Bird?" exhibit. Its purpose is to illustrate the following facts: A bird's feathers grow from definite areas in its skin and the spaces between are unfeathered. Since the body, in order to be strong yet light, is very irregularly shaped, this intermittent arrangement smooths off the surface, compensating for hollows and bumps so that the bird is efficiently streamlined for flight. At the same time dead air pockets are created next to the skin which protect the body from intense cold and conserve its heat. Many of these principles, so ingeniously worked out in Nature, have been discovered by man and applied to mechanical products of his invention.

tells a much longer and more interesting story and although its great success is usually attributed to its surpassing beauty and its attractive features of purely entertaining character, it is not unlikely that its essential virtue lies in its departure from objectivity.

Entertainment is doubtless one of a museum's functions, but the tendency is to combine it not only with instruction but also with service. This is seen not only in organized work with schools, colleges, and other cohesive groups but also in didactic exhibits and in close general public relations. To meet the demands of a public that enthusiastically receives "Information Please" and "The Quiz Kids," it is increasingly evident that ideas and facts, as well as objects, are necessary.

Plans for subjective exhibits at Field Museum have been maturing for a number of years and not a few such exhibits have been introduced here and there. One of these, perhaps the most important, so far, has just been completed under the direction of Mr. Rudyerd Boulton, Curator of Birds. In it, his effort has been not to show any particular bird or any group of birds but to furnish an introduction to the subject of ornithology under the title "What is a Bird?" How this has been accomplished may best be stated in this ornithologist's own words, as follows:

"The exhibits of birds in Field Museum, as a result of collecting specimens in all corners of the earth and of painstaking preparation in the laboratories for the past twenty years present a complete and unusually attractive survey of the kinds of birds that exist. Naturally there are gaps of minor importance yet to fill, but the goal is well in sight.

"In this day, when the interpretation of natural phenomena, zoological as well as social, is of consuming interest, the demand has grown among the visitors to Field Museum for an analysis and discussion of 'what makes a bird tick.' As a result, the present exhibit at the entrance to the Bird Hall (Hall 21) has been installed, and it may serve as an introduction to the other exhibits based on the subjective point of view.

WHAT MAKES AN EXHIBIT "CLICK"

"To be successful such an exhibit must conform as nearly as possible to certain fundamental specifications. It must be of such size that it can be seen completely from one point of view. All non-essentials must be eliminated as well as abstruse scientific terminology in order that the thoughtful layman whose time is limited may grasp the point as quickly as possible. It must be explicit, clear and brief, yet it should be comprehensive and the materials that are shown must be exact in detail.

"In competition with shop windows, magazine covers, and advertising layouts that vie with each other for the attention of the casual observer, the exhibit must be attractive in design, both of form and color. The materials and specimens should tell their own story as far as possible with labels only as guides to point out essential features. Lastly it should arouse curiosity, provoke the observer to think beyond the limitations of the exhibit, stimulate him to correlate observations that he has already made and enable him better to interpret his future contacts with related facts.

"It is only possible adequately to describe an object in terms of some other object. One thing is similar to some other thing or it is dissimilar in such and such a way. For this reason, approximately two-thirds of the exhibit is devoted to showing what a bird is in comparison with its four other vertebrate relatives—fish, reptile, amphibian, and mammal. Structural comparisons are shown or suggested among the five groups—modifications of the skin covering, limbs, heart, breathing apparatus, skull, and embryos. Contrasts in the function of major systems are drawn for blood circulation, conservation of heat, temperature control, body temperature, rate of heart beat, respiration and metabolism. Fundamental differences in behavior of the five groups are touched on with respect to selection of environment, activity, migration, social organization, and family life.

FUNCTIONAL ANALYSIS OF BIRD'S PARTS

"Many of the most important adaptations of birds have been towards their evolution as flying machines. The exhibit shows that a pelican's upper wing bone is the same size as a man's upper arm, yet only one-sixth as heavy, and that a pigeon's bones weigh less than its feathers. Since it is mainly as a result of the evolution of feathers from the scales of reptiles that a bird "has become a bird," the microscopic structure of a feather with its intricate interlocking parts is shown by a model enlarged five hundred diameters. It then becomes somewhat easier to comprehend how feathers serve three major purposes: (1) to insulate and to conserve heat, (2) to maintain a stream-lined form, (3) to produce efficient flight. The unique temperature control device of birds, the air sac "radiator" system, is correlated with insulation by feathers and with development of the four-chambered heart, similar to that of mammals though independently evolved. This combination of three separate functions permits the life processes of a bird—metabolism, temperature, pulse, and breathing to go on at a rate higher than that of another animal.

"The models in the exhibit were made by Miss Nellie Starkson, Artist-Preparator of the Department of Zoology."