

## CAMOUFLAGE FOR DEFENSE IN THE BIRD WORLD

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CURATOR OF BIRDS

**A**N EXHIBIT in Boardman Conover Hall (Hall 21) deals with the manner in which color and pattern are useful to birds in concealing them from their enemies and from their prey.

The first point brought out in the exhibit is that the color we see is only partly the result of the color of the object at which we

group of three little killdeer crouched amongst the pebbles. The killdeer partly standing is easily seen, but it takes sharp scrutiny to make out the others.

The pattern of the background of dead leaves and grass is sometimes reproduced in the plumage of a ground-inhabiting bird. The bird's back is in effect a picture of the background. A brooding bob-white quail is used to show how well the bird and its

wary birds of the open country do not need concealing color. Their habits and their ability to look after themselves are such that concealing coloration would be of no importance, and the magpie shown in our exhibit is an example.

There are other uses of color in the bird world—in courtship displays to the female and as threat and intimidation displays in fighting—but these are reserved for later treatment in another exhibit. This exhibit was planned in the Division of Birds and executed by Assistant Taxidermist Carl W. Cotton, with the aid of Leon R. Aboulafia, special student from Tel Aviv, Israel.

### ALBERT H. WETTEN 1869-1953

Through the death on September 3 of Albert H. Wetten the Museum has lost a distinguished member of its Board of Trustees and an enthusiastic supporter of the institution's endeavors for public service and the advancement of science. Mr. Wetten, who had reached the age of 84, first became associated with the Museum in 1926 as an Associate Member. He was elected to the Board of Trustees in 1939 and simultaneously became a Corporate Member. Mr. Wetten as a member of the Board devoted his time, thought, and energy lavishly to the interests of the Museum. From 1942 until his death he was chairman of the important Building Committee. He was also a member of the Executive Committee and the Finance Committee from 1945 on. In 1948, in recognition of his generous gift that made possible the color plates for the Museum publication by Dr. Ch'eng-chao Liu, *Amphibians of Western China*, Mr. Wetten's name was inscribed in perpetuity on the roll of Contributors.



Albert H. Wetten

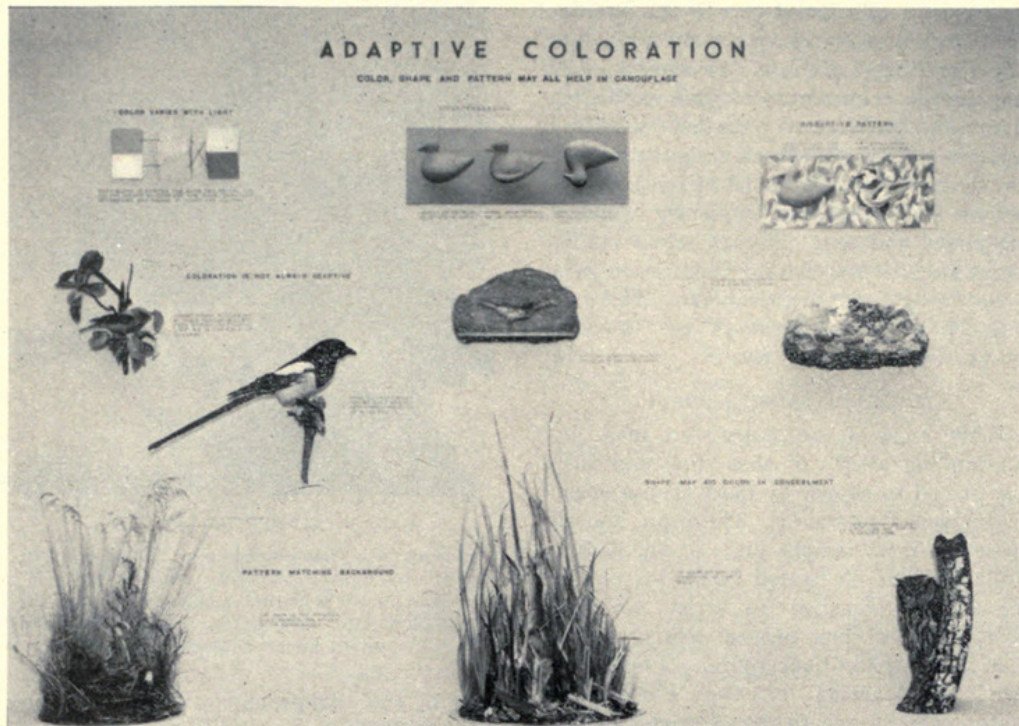
Mr. Wetten was well known for other civic activities and for a notable career in Chicago business circles where he was a leader in the real-estate field.

### Daily Guide-Lectures

Free guide-lecture tours are offered at 2 P.M. daily except Sundays under the title "Highlights of the Exhibits." These tours are designed to give a general idea of the entire Museum and its scope of activities.

Special tours on subjects within the range of the Museum exhibits are available Mondays through Fridays for parties of ten or more persons. Requests for such service must be made at least one week in advance.

Although there are no tours on Sundays, the Museum is open to visitors as usual.



### COLOR FOR PROTECTION

With birds, shape and pattern, as well as color, aid in concealment.

are looking; it is influenced by lighting. Two triangular blocks, each having one face painted white and one blue-gray, illustrate this. The block with the blue-gray side to the light and the white in darkness appears almost uniform in color; the block with the white to the light and the blue-gray in shadow appears sharply black and white.

This use of a pale color to eliminate shadows and make objects less conspicuous is called counter-shading and is shown by models. One model is uniform in color, but it appears dark below from shadow and is conspicuous. The central model, with the shadowed part painted pale, appears uniform in color and is less conspicuous. To demonstrate that this is really because of the distribution of the colors, a model, painted like the central one, is inverted, with the result that it is glaringly conspicuous and stands out boldly from the background.

A boldly patterned object may be relatively inconspicuous against a patterned background where a plain-colored object is more easily seen. Models illustrate this, but it is even more effectively portrayed by the

environment blend together to conceal the bird.

Shape as well as color may be an aid in concealment. The exhibit shows the least bittern standing upright amongst some reeds. Not only do its colors match those of the reeds against which it is seen but its slender neck and long pointed bill also mimic the very shape of the reeds, adding to the effectiveness of the camouflage. The screech owl, sitting on the lower of two broken-off stubs, repeats the gray and black pattern of the stubs on its breast. But further, the shape of the owl in its upright pose makes it appear but a continuation of the stub, and its ear tufts simulate the jagged broken-off end of the stub.

Not all colors are adaptive, of course. Apparently some birds that live in forests amongst the leaves and branches where they gather their food of insects or fruit are sufficiently protected from their enemies by the nature of their environment and have no need of concealment in seeking their food. Birds such as these may have bright colors in their plumage, and the tanagers, represented in our exhibit by the scarlet tanager, are good examples of this. Many





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