



For Better Camouflage

**D**EFENDERS of Britain are learning from animals how to protect possible bomb targets by making them invisible to Nazi raiders. Biologists, with their knowledge of the highly successful principles that animals use in concealing themselves from would-be devourers, are aiding physicists, engineers and others in this work. As a result, the camouflaging of buildings, storage tanks and such objects has become more and more of a scientific job.

The principles known to biologists as general resemblance, special resemblance, disruptive pattern, deflection and mimicry are all now at the disposal of camouflage artists, to be used as the situation dictates.

General resemblance is more commonly employed in military camouflage in the field, where mobile objects are colored so as to be as inconspicuous as possible against any background on which they stop. Special resemblance to particular natural objects is often extremely ingenious. Admirable methods of counterfeiting grass are now available, and artificial woods with "sapless foliage," but

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permanent greenery spring up where required.

The biological principle of mimicry is reversed in the new camouflage. In nature, harmless creatures are often disguised as dangerous or poisonous species, presumably to frighten off their enemies. In military mimicry, dangerous objects like gun positions are made to look like harmless cottages or haystacks.

In biological deflection, attention of a possible devourer is drawn away from the vitally important individual or part and to something that can be lost without particular harm. Replaceable tails of certain lizards, which can be left in the attacker's possession while the animal itself escapes, offer a good example. The same principle is used in deflecting the attention of air raiders from important parts of a known target to non-vital elements, like empty sheds.

Disrupted pattern, the use of zigzag lines and splotches of color, is perhaps the most widely used of all camouflage methods. Biological examples are the stripes of zebras and tigers, the spots of leopards, the splotchy pattern of the giraffe's skin. Closer study of nature has enabled camouflage specialists to correct the errors of much of their earlier work.

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that remove the surplus population, and heavy weed growth in the ponds, are important contributing factors to this ill state of affairs. As remedies they recommended clearing out the weeds, stocking with large-mouth bass, fertilizing the water to increase the food supply, and thinning out the crowded population by a heavier take of fish.

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## TVA Fish Studies

**N**EW LAKES behind the lower dams in the TVA region have shown some interesting ups and downs in their fish population as the waters rose in them, Clarence M. Tarzwell of the TVA Biological Readjustment Division reported. During the first year, the catch of game fish is generally lower. It goes up during the second season, but during the third there is a tendency for panfish, and especially for coarse fish like carp, to overtake the game species in numbers. Apparently there needs to be some additional protection for bass and other game fish, and possibly legalization of netting for carp, to maintain a desirable balance.

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## Won't Stop Conservation

**A**MERICA'S defense needs will not run counter to the interests of conservation, whatever the present emergency may bring, Rep. Ross A. Collins of Mississippi assured the sixth North American Wildlife Conference.

Mr. Collins, chairman of a special House Subcommittee on Defense Appropriations, declared that conditions now are entirely different from what they were in 1917-18, when timber was recklessly cut to provide parts for airplanes, rangeland plowed up to increase wheat acreage, and fisheries exploited far more intensively than they could bear without long-lasting damage.

"Fighter and bomber planes are of all metal construction now," Mr. Collins said. "If anybody puts up a plea that spruce has to be cut wholesale for warplane construction, look carefully to see if he hasn't some interest in raiding our forests to get cheap lumber for non-defense purposes.

"The same thing goes in the case of farm and fisheries product. Our surpluses in basic foods and fibers are still so heavy that we are still seeking ways to reduce cotton acreage, and to dispose of stocks of corn and wheat now on hand. So there is no need to plow fields that have been reclaimed from dust bowls or destructive gullying."

Defense programs have given the U. S. Department of Agriculture some new problems in transplanting farmers, H. W. Hochbaum, of the U. S. Department of Agriculture's Extension Service, told the conference.

Great tracts have been purchased for cantonments, maneuvering grounds and artillery and bombing ranges. Naturally, these have been acquired as far as possible in thinly populated, low value areas, so as to dislocate as few farmers as possible. However, thousands of farm families must find new homes and it is one of the cares of the Department of Agriculture to make the re-location with a minimum of dislocation.

Another problem has been the settling of rich lands along the Mississippi made available for secure farming as the result of the great flood control programs of recent years. Hitherto these lands have been swamps and shallow lakes, or at best have been subject to so frequent flooding that farming was impossible. Now they are valuable additions to the nation's good land capital.

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