

BIOLOGY—MILITARY SCIENCE

# NATURE RAMBLINGS

by Frank Thone



### Camouflage in Nature

► NATURALISTS used to be regarded as the most harmless and unwarlike of persons. Their preoccupation was with interesting but unimportant phenomena—how plants and animals lived and adapted themselves to their environments. The way a bittern looks like a tuft of dried grass or reeds, standing there motionless with its dun stripings; the clever concealment of a spider within a rolled-up leaf; the astonishing resemblance of the green head and shoulders of a frog to a bubbly lump of green pond-scum—all these are pleasant enough to know, and they help to make conversation as you hike through the woods and fields. But a practical-minded man might challenge them all with a sophisticated, “So what?”

But now the mild-mannered naturalist might, if he liked, glance a bit sharply at you through his spectacles and give answer: “So it’ll keep you from getting shot by a German or a Jap sniper, if you’re not above learning from bitterns and frogs.”

Camouflage is a relatively new military term. Although soldiers have used it in a haphazard sort of way for centuries, it did not become a distinct branch of the military art, with a specialist corps of its own, until the first World War. But it has been universally employed by animals of all kinds for ages. Since Darwin popularized the concept of a struggle for survival, a couple of generations ago, scientists have been using such terms as protective patterns and concealing coloration, which after all mean almost exactly the same thing, in the endless, “for-keeps” game of hide-and-seek that goes on wherever hungry predators seek food and their shy prey seek to remain alive.

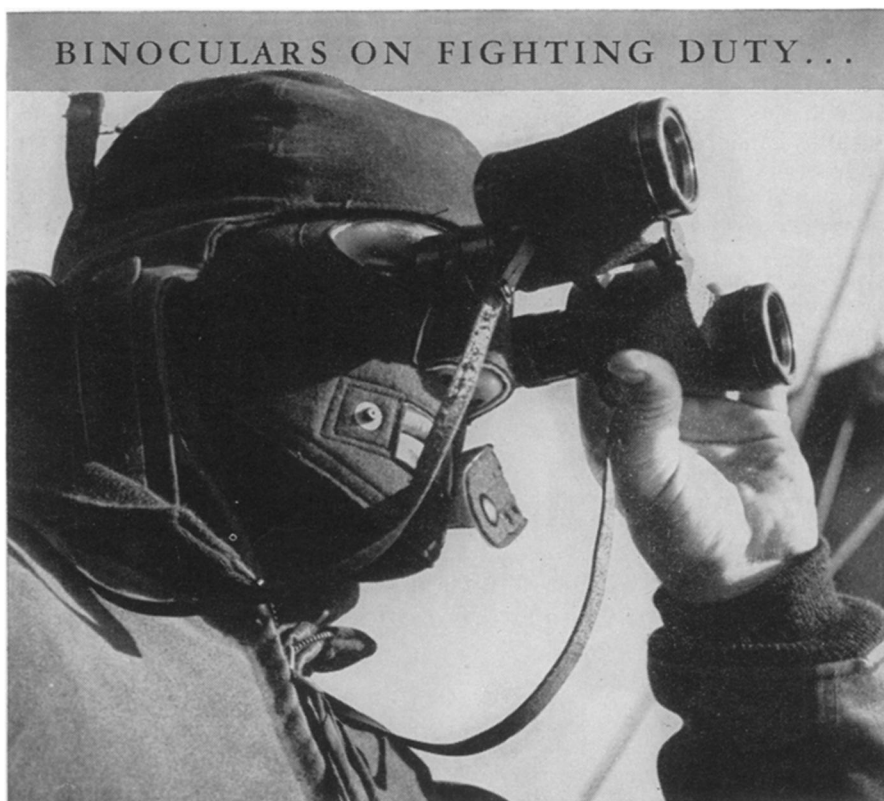
During the previous war, camouflage was largely turned over to artists. Now, however, field biologists have also been called into consultation, and they have contributed some of the ideas that have made present-day camouflage so much better than the rather splotchy, dauby efforts of 25 years ago.

Very notable, in nature-like adaptation, has been the coloration adopted for airplanes: light underneath, where they are seen against blue sky and white clouds; earth- or forest-color above, for

the bafflement of fighter planes at still higher levels. You can even tell, if you are well instructed in geography, on which front a returned bomber has been serving. Have you, for example, ever caught sight of a Fortress or a Liberator with a definite pinkish tinge in the brown of its upper surface? Does this tell you where it has been?

*Science News Letter, July 17, 1943*

Approximately 70% of all known animal species are *insects*.



### “Conning Tower! Broad on the Starboard Beam”



Pete Manning, ship's lookout, knows that sharp, brightly illuminated image means a Jap sub—preparing to attack his precious cargo of war materials. Now the entire convoy goes into action to fend off this steel shark—warned in time—because a man's trained eyes can reach miles across the water and sight a shaft of steel above the waves.

Producing binoculars, the world's finest in performance, is only one of the wartime jobs at Bausch & Lomb. Because this war is so clearly an “optical” war, the other

sighting instruments—range finders, anti-aircraft height finders and gun telescopes—are also pouring out of the Bausch & Lomb factories in tremendous quantities. Today on many fronts Bausch & Lomb is devoting the “know how” learned through years of precise optical production to the preservation of American freedom.

**BAUSCH & LOMB**  
OPTICAL CO. ROCHESTER, N. Y.  
ESTABLISHED 1853

AN AMERICAN SCIENTIFIC INSTITUTION PRODUCING OPTICAL GLASS AND INSTRUMENTS FOR MILITARY USE, EDUCATION, RESEARCH, INDUSTRY AND EYESIGHT CORRECTION