

female carrying the material but always accompanied by the male. The nest, situated 28 feet from the ground in a black spruce, was left undisturbed until June 22 when it was collected. It was found to be placed close to the trunk some six or seven feet from the top of the tree and almost entirely hidden by dense foliage. It contained four slightly incubated eggs.

On June 21 a second nest was discovered 30 feet 5 inches up in a balsam. Like the first, it was invisible from the ground and was situated close to the trunk, six or seven feet from the top. It contained three eggs on the date mentioned. This nest was left undisturbed until July 6. It was then found to contain three partially fledged young. One, taken for a specimen, proved to be a male. The stomach contents consisted largely of comminuted vegetable matter. Fragments of cherry pip, insect fragments and two pieces of gravel were revealed by gross examination. The remaining two young left the nest on July 8.

The female of this latter nesting pair possessed an aluminum band on her left tarsus, the type of band normally used in bird-banding studies. However, we were unable to find out more about it. Judging by the dullness of the band, she had worn it for some time. The male did not possess a band. On July 6, in late afternoon, a male was captured at our banding station two miles away. Next day, July 7, the male at this second nest possessed a shiny new band on its left leg. Subsequently, part of the number was read through a high-powered telescope and it fitted the series we were using, proving almost conclusively that this bird had flown two miles from the nesting site to obtain salt which we used as bait at the banding station.

A point of interest concerning the structure of the two nests found is that from seventy-five to ninety per cent of the materials used consisted of rootlets such as were exposed in the newly made road. Oddly enough, the taking up of nesting territories adjacent to the road coincided with the exposure of unlimited nesting material.—C. E. HOPE, *Division of Birds, Royal Ontario Museum of Zoology, Toronto, Ontario.*

**Random notes of bird life under shell fire.**—My personal observations lead me to believe that the avifauna of Europe suffered least of all animal life from the effects of concentrated shell fire. My observations covered an area roughly bounded by the Vosges Mountains on the south, the Meuse River on the west, the Rhine-Dortmund Canal on the north, and the Saur Mountains on the east. This area had practically all of the various terrain features of Europe, and contained most of the various forms of bird life that are to be found in that continent. High wooded mountains, broad plains, open forests, and river valleys were all included in this area. Both spring and fall migration, as well as summer and winter residents, were under observation. A detailed study could not be made, but rather a general picture could be drawn.

Shell fire has two effects—blast and shrapnel. The first is deadly at close range, killing and maiming by blast alone. The second effect, shrapnel, is dangerous to a great range, as the flying bits of jagged iron carry to a considerable distance.

**MORTALITY:** I was unable to go into this very deeply, due to obvious facts. A battle field is not the correct place to gather specimens and dissect them to determine just what killed the birds. However I did have the opportunity to go over some of the areas after a heavy shelling and note the effect upon the bird life.

**BLAST** seemed to have very little destructive power on bird life, either wild or domestic. It was not uncommon to see cattle and horses lying dead with no marks upon them. This was especially true in barns, the roofs of which had been hit with a heavy projectile. Chickens, pigeons, and geese in the same farmyard were moving

about as if nothing had happened, yet dirt was driven into their feathers from the blast. At no time did I find a bird that one could definitely claim the blast had killed.

SHRAPNEL destroyed some bird life, but in a very small percentage. Only upon the banks of the Rhine did I notice any number at one time. However this was due to the habit of some varieties of alighting in the night on the river bars. Mortar rounds were fired into flocks of sleeping Lapwings. The birds moving around in the dark created enough noise to draw attention to them, and were subjected to a short concentration of fire. These bursts in a closely packed flock of birds ought to have slain them in great numbers, but in the morning very few were noted in the area. These birds were gathered and in all cases shrapnel had caused their death. It is my belief that the light comparative weight and small size saved the bird life from both blast and shrapnel, while mammal life near by, with a greater comparative weight and size, took the full force of the blast and created a larger target for the flying iron.

FOOD: This item seemed to be paramount. Often birds flocked to an area that had been, and still was, under a concentration of fire. I will try to divide this into two phases—the wooded areas and the agricultural areas. However, the feeding characteristics differ, and the effect of bursts differ in the two types of areas.

In the heavy woods, a great proportion of the shells burst on limbs or in tree tops. This created havoc with the trees, as blasts tore them apart and the iron gouged pieces of bark and wood from them. Close to St. Vith, in Belgium, we were dug in on a thickly wooded hillside. A heavy concentration of artillery fire was wrecking the forest about us. On both sides of this area the woods thinned out to brush, and it was from this brushy area that birds were flocking into the woods. Goldcrests (*Regulus r. regulus*) and Great Tits (*Parus m. major*) were identified in the horde of birds that descended into this woods. The tiny mites gave no evidence of fear as they cavorted in the broken trees. They seemed to congregate upon every shell burst, busily feeding upon insects exposed on the torn wood. The birds seemed to utilize the bursts in their search for food. A short time after the shelling ceased the birds thinned out. At no time during the several days spent in the area, did I locate a bird that had been killed.

In the open fields and orchards the majority of the shells burst on the ground. This blasted a hole, spreading the dirt about. During the summer, spring, and fall, no undue congregation of birds was noticed. However, utilization of the shell fire to expose food was again established. When winter with its snows arrived the situation immediately changed. Snow covered almost everything except the base of straw stacks and manure heaps. Here the birds could be found in great numbers. When shells screamed into a near-by orchard or field, however, the birds would immediately leave the straw stack and descend in mass upon the exposed ground. A great many grain and potato fields, as well as truck gardens, had been left and covered with a blanket of snow. The only way of uncovering this abundance of food was by shell fire, so all of the bird life took advantage of it.

FEAR: At no time was fear noted. As cited in the above paragraphs, the birds would dive into an area that was erupting with smoke and flame. The creatures would disappear in a burst and in a few minutes would be seen industriously feeding in the debris. The only time that sound seemed to affect bird life was when Nebelwerfers (Screaming Meemies) passed overhead. The terrific and terrifying sound would cause all of the bird life in the immediate area to become silent and motionless. Upon the impact of these rockets the flocks would immediately fly towards the point hit.

**SHELTER:** Some forms lost a portion of their natural cover, but in most cases the problem was reversed, with ample or added winter roosts. The forest dwellers had a portion of their area destroyed, but in Europe dead trees suitable for Tits and Woodpeckers are not found. These birds used nest boxes put in various places. They immediately moved into destroyed towns and villages. The hedge-dwelling varieties suffered, as hedges were methodically destroyed because snipers and tanks could use these hedges for concealment.

A great many forms took advantage of partially destroyed buildings during the winter months. It was no uncommon sight to see several birds perching on the dangling electrical fixtures in a windowless house. Picture frames and mantles were also frequently used. The accumulated droppings gave ample evidence that these perches had been used for some time.

**MIGRATION:** While we were on the Rhine in March, 1945, several flocks of migrating waterfowl were fired upon by both enemy and Allied anti-aircraft batteries. On several patrols at that time, mortar fire was called down upon suspicious noise that later proved to be migrating birds, as referred to in an earlier paragraph. In general, shell fire had little effect upon bird life. However, in the fall and early winter the effect was in reverse. Varieties that should have left remained in considerable numbers. Goldfinches (*Carduelis c. carduelis*) and Chaffinches (*Fringilla c. coelebs*) were present all winter in larger numbers than usual. I was not familiar with the migration in this area and had to take the word of the local inhabitants for this, but it seems reasonable, due to the extra amount of food that was exposed from the snow by the shells.

**BREEDING:** Adult birds remained on their nests and with their broods even when high-velocity shells were tearing their nesting trees apart. At Polsum, Westphalia, Germany, I noted three nests of some variety of *Corvus* in trees along both sides of a highway. PZVI tanks were firing up the highway, scoring tree bursts all along. One nest was cut out of its tree during the fighting. After the shooting was over I noted that the adult bird of this nest was still in the immediate vicinity and the other two brooding birds were more interested in the men below than in the burning building near by. This was the only case where nestling birds were noted in shell fire.

#### SUMMARY

This study is general and not on specific forms or areas. Data indicate that bird life is almost immune to blast and shrapnel. The relative small size reduces the chances of a shrapnel hit, but further study could be carried on as to the lack of blast effect. Shell fire aided bird life in securing food, especially during the winter months while snow covered the ground. In general the bird life benefited by concentrated artillery fire.—ROBERT R. TALMADGE, *Eureka, California*.

**An unorthodox nest of the Rose-throated Becard.**—While observing birds on the outskirts of Linares, Nuevo León, México, on June 13, 1946, the writers were attracted by the sharp call note of a nestling bird. Investigating further for the source of the note they were led to a bulky, nondescript nest in a small orange tree. The nest was approximately four feet from the ground with one end against the trunk of the tree and the bulk of the nest extending out along a main horizontal branch. A mass of dead leaves, grasses and even a few strands of small hemp rope constituted the nest, a structure measuring approximately two feet horizontally across the front, one foot high, and one foot from front to rear. The entrance was a hole near the center of the long side of the nest and was littered with droppings. Below on the leaves and ground other droppings were noticed.