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*Finca "Los Cusingos"*

*Quizarrá de Pérez Zeledón*

*Costa Rica*

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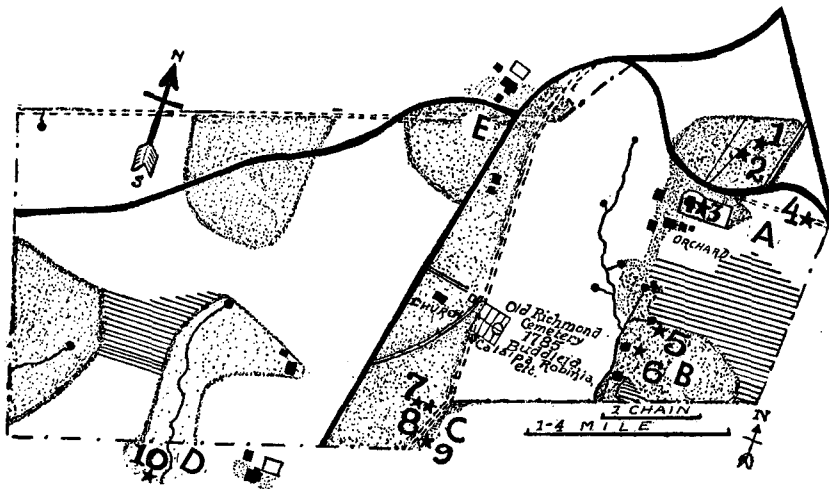
## SEASONAL TERRITORY STUDIES OF RUBY-THROATS

BY A. L. PICKENS

"Do you sleep on your dining table?" Answering question with question, like an ancient Greek, this query is a fitting answer to those who enquire if Ruby-throated Hummingbird (*Archilochus colubris*) nesting areas are not in tangles of gorgeous flowers. Personal records of bird-flowers supplemented by those of a helpful group of correspondents from New England to California; Neltje Blanchan's 'Nature's Garden,' of which many specialists apparently remain ignorant; Otto Porsch's 'Grellrot als Vogelblumenfarbe' in *Biologia Generalis*, Band VII; Aretas A. Saunders's 'Ecology of Birds of Quaker Run Valley'; and F. W. Pennell's monumental work on the Scrophulariaceae—all these note the attraction of red flowers for hummers and other birds. But a nesting bird is not seeking display but is courting concealment. Remembering this will enable one to see that this article is not in conflict with the findings of our bird-flower-census takers.

The farm on which Old Richmond, church of Revolutionary veterans, began its historic career, of all areas has furnished the largest share of Ruby-throat nests for the personal notes used in this article. For this vicinity a total of ten was recorded, and all but one were visited personally. They fall naturally into four areas, A, B, C, and D, with a fifth very strongly indicated, which is provisionally noted as E (see Text-figure 1). Of ten nests, all were in the licheniferous post-oak (*Quercus minor*) except No. 3 in a sugar plum, and Nos. 7 and 8 in one yellow pine (*Pinus echinata*) at different times. No one was immediately near or above any brilliantly flowering tree, vine, or plot. Flowers immediately near were not ornithophilic. In fact, the spring-blooming fire-pink (*Silene virginica*), columbine (*Aquilegia canadensis*), pink-root (*Spigelia marylandica*), and coral honeysuckle (*Phenianthus sempervirens*) were found on this farm, if at all, merely as ornamentals, artificially transplanted. Cross-vine (*Anisostichus*

*crucigera*) was more usual. All these are roughly synchronous in blooming with the Ruby-throats' spring arrival. The even more specialized trumpet-creeper (*Bignonia radicans*), appearing much later, is remembered as a sparse growth at only one spot on the farm, on the road immediately north of Area A. The highly specialized and ornithophilic jewel-weed (*Impatiens biflora*) and cardinal-flower (*Lobelia cardinalis*) while appearing in July or earlier, flourish chiefly as late summer and autumnal flowers. The non-ornithophilic tulip



TEXT-FIG. 1.—Key: Numbered stars, 1-10, show nest sites; letters, A-E, nesting areas. Broad-leaf forest is shown in stipple; pine forest in line; cleared lands in white. Public roads are shown in black; private roads by parallel lines; old abandoned roads in parallel broken lines. Straight, thin, unbroken lines show paths; if winding, streams. Multangular spots show land-owners' homes; rectangular spots, other buildings; circular spots, springs; enclosed white spaces, gardens with a floral attraction. Dot-dash line indicates where farm boundary does not follow a road. (Base-map by courtesy of R. W. Pickens.)

poplar (*Liriodendron tulipifera*) occurred near all nests! If this be anything more than mere coincidence, the short-seasoned, greenish, orange-banded flowers may be no more an attraction than the abundant aphids and the resultant honey-dew found on the leaves. Sourwood (*Oxydendron arboreum*) was found in or near almost all if not all these nesting areas. Its white clusters are evidently familiar sources of nectar, for such, when placed near feeding bottles, were quickly and familiarly visited, flower by flower. Japanese honeysuckle (*Ninтооја japonica*), easily available for both A and B, literally carpeted the forest floor about C, and was abundant near E. Smooth gooseberry (*Polycodium*) and tree huckleberry (*Batodendron arbor-*

eum), distinctly marked for A, occurred in or near a majority of the areas. A and B each had its own sap-leak such as we find in the bark of scarlet oak (*Quercus coccinea*). The birds drink escaping sap and eat the small insects that become trapped in its flow. Each area related itself rather distinctly to a farmhouse and garden where flowers are fairly a tradition, or, in the case of C, to the church and cemetery, until recent years a place of floral plantings, and bearing the only catalpa trees (*Catalpa catalpa*) in the community. The intervening garden was visited by both A and B. Each area was in a body of virgin broad-leaf, each about a quarter-mile from its neighbor, and more or less set off, if not entirely separated, by cleared land. Messrs. Henry Garrison, William Watson, and Joseph Martin aided in extending this list by three nests. The first, about a half-mile east of Old Richmond farm, was conventionally located in an oak in a grove; the next, a similar distance south, was in a dogwood (*Cynoxylon floridum*) after the flowering season; but the last was in a mimosa (*Albizzia julibrissin*) apparently during the flowering season. Some distance to the north in a mountain valley, a personal find was located in a scrub pine (*Pinus virginiana*). What was unusual, this pine grew in a pine grove (a very narrow one though) and the nesting tree was in the very edge of the grove, by a mill-pond and near a number of cottages, and an abundant growth of broad-leaf trees bordered much of the pond. So much for fourteen nests from the upper Piedmont and the lower mountains.

Mr. A. R. Heyward, of Columbia, South Carolina, was one of a group that located a large series of nests along the border between the lower Piedmont and the coastal plain. In this sandhill environment oaks are inclined to be scrubby. Five nests were in pines, one of these being in a pine in a pine forest, but not far from a cleared field to the west and a forested swamp that ran along a stream to the south. Two were in hickories; one was in an eighty-foot tulip poplar, forty feet from the ground; only one was found in an oak; while black gum (*Nyssa* sp.) yielded another, and perhaps the same species or a close relative was occupied by an eleventh. In contrast to the ample area about each Old Richmond nest, where no one area ever showed two occupied nests at the same time, Mr. Heyward on one day found two occupied nests about an acre-width apart. But a road, such a boundary as many breeding birds recognize, ran between the two, fifty yards from one nest to the east, and twenty from one to the west. Nests were not found at any time in the huge-coned long-leaf and loblolly or frankincense pines; smaller cones of course offer better camouflage when they are silhouetted against the sky, and one nest



holder of a magnificent stake sits calm and unruffled until a neighbor passes over a distinct break in the line of jewel-weed where rank *Polymnia* and *Falcata* smother out the desired flowers. A similar smothering-out downstream is guarded likewise. Thus it runs, until the last claimant on the brook below wages squeaky battle with the next neighbor upstream, not so much perhaps over two disputed clumps of flowers, as over its right to keep all invaders out of a spot beneath the favorite perch it has selected in an overshadowing mimosa tree. An animated spot indeed is such a glen until some morning, a vague touch of autumn in the air, we return to find most of the bickering claimants gone, and one or two loitering vagrants, wide-spaced and peaceful, gathering the nectar from a depleted number of the later flowers.

Along a flowering glen such as the one just described, even at the height of the season, keeping separate check-up on each individual is a comparatively easy matter. Each bird picks an observation perch immediately above the flower-bed from which it feeds. It descends now and again for nectar and habitually returns, not merely to the same tree, but actually to the same branch or twig, preferably a fairly or wholly bare one, which enables the occupant to survey at a sweeping glance the whole of its floral protectorate; for example, the bird that habitually occupied the particular mimosa branch just noticed. Upstream, another bird faithfully occupied a partially bare dogwood branch, sweeping down over its flower-bed, and still farther up one used the twigs of a rather bare if not dead limb as its private outlook. On such a claimant I could call with the assurance it would be at home, or would return within a few moments. Thus, in a short space of some five hundred feet in a rather open grove, and provided with a six-power field-glass, a fair degree of distinction between individuals is possible without the necessity of banding. Not only can one distinguish individuals; he even comes to recognize individual appetites, temperaments, and tempers.

Wide spacing between nesting areas, the distinctive note of the newly flying young—a shrill and far-reaching whisper, and the tendency to linger for some time in the vicinity of the abandoned nest, facilitate the keeping of separate notes on separate broods. Banding might demonstrate that such nesting areas are individual or even ancestral holdings from year to year, but such observations would require residence on or near the farm where the studies were made.

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