

Acknowledgements

I would like to thank Allan Harris and Barry Atkinson for helping with the survey, Derek Parkinson and Bill Climie for the photographs, and Stuart Houston for references.

Literature Cited

- Allin, A.E.* 1949. Field notes from Canada. Thunder Bay Field Naturalists Newsletter 3(5):2-5.
- Escott, N.G.* 1977. Marathon bird notes. Thunder Bay Field Naturalists Newsletter 31(4):58.
- Houston, C.S.* 1981. History of Richardson's Merlin in Saskatchewan. The Blue Jay 39(1):30-37.
- Johnson, D.H.* 1982. Raptors of Minnesota—nesting distribution and population status. The Loon 54:73-104.

Oliphant, L.W. 1985. North American Merlin Breeding Survey. Raptor Research 19(2/3):37-41.

Oliphant, L.W. and E. Haug. 1985. Productivity, population density, and rate of increase of an expanding Merlin population. Raptor Research 19(2/3):56-59.

Peck, G.K. and R.D. James. 1983. Breeding Birds of Ontario. Nidology and Distribution. Volume I: Nonpasserines. Life Sciences Miscellaneous Publication, Royal Ontario Museum, Toronto. 321 pp.

Smith, A.R. 1978. The Merlins of Edmonton. Alberta Naturalist 8(4):188-191.

Are Red-eyed and Philadelphia Vireos Always Interspecifically Territorial?

by

Ross D. James and Mark K. Peck

After an extensive study of Philadelphia Vireos (*Vireo philadelphicus*) and Red-eyed Vireos (*V. olivaceus*) near Englehart, in Timiskaming District, Ontario, Rice (1978c) presented evidence that the two species used essentially identical habitat and would even occupy the same territorial area in successive years. But, he also provided clear

evidence that the two species maintained mutually exclusive territories in any particular year (Rice 1978a). Experimental and observational findings indicated that neither species was at a disadvantage in territorial disputes, so that despite size differences, each could exist adjacent to the other without overlapping territories. However, we made casual

Ross D. James and Mark K. Peck, Department of Ornithology, Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario M5S 2C6

observations during the summer of 1986 that suggested to us that interspecific territoriality is not always achieved or necessary.

Our observations were made 15 to 25 km south of Gogama in Sudbury District, only slightly south of the latitude of Englehart, but where Red-eyed Vireos were much more numerous than Philadelphia Vireos. In the first instance we heard a Philadelphia Vireo singing near our cook tent in an aspen grove, and on 25 May noted a pair building a nest. The birds gathered nest material right beside our tent and could be heard morning and evening as we were preparing and eating meals. The birds were incubating in early June, and after that time we scarcely ever heard the male sing. The nest was about 18 m high in the crown of an aspen. When the Philadelphia Vireos were incubating, however, we regularly heard Red-eyed Vireos singing in the same aspen grove, well below the Philadelphia Vireo nest. There was only one pair of Philadelphia Vireos detected in this location, but several pairs of Red-eyed Vireos were present.

In the second instance, on 10 June, after completing a transect census, RDJ returned to an aspen grove about 14 km east of our camp to verify the identity of the vireos heard singing on the count. Two Philadelphia Vireos were detected among much more numerous Red-eyed Vireos. For about 10 minutes I followed a bird that was singing continually, high in the aspens, trying to get a look at the bird to confirm that it was a

Philadelphia Vireo. As I stood watching and waiting, I noticed a female Red-eyed Vireo fly in with nest material and place it on the beginnings of a nest only about 3 m above the ground and almost directly below the singing bird. I thought immediately that I must have been wrong in my identification by song and that the bird singing above me was a Red-eyed Vireo. But within a few moments a male Red-eyed Vireo flew silently to the nest as the female left. When I eventually saw the bird singing above this nest it was indeed a Philadelphia Vireo. Why then, in either instance, if these two species maintain mutually exclusive territories as found by Rice (1978a), did one of the birds not chase the other from its territory?

In the first instance, although the Philadelphia Vireo may not have responded as strongly to the Red-eyed Vireo during incubation as at other times (Rice 1978b), and the Red-eyed Vireo likewise might not have responded strongly to what seemed to us to be an unusually quiet Philadelphia Vireo, there still appeared to be simultaneous occupation of at least part of the same territory by the two species.

In the second instance, although Red-eyed Vireos are supposed to respond strongly to Philadelphia Vireo song (Rice 1978a,b), the Red-eyed Vireo made no move to chase the apparent intruder from its territory complete with nest.

Although the observations were casual, the situation with Red-eyed and Philadelphia Vireos in the

Gogama area seemed similar to the vertical separation of vireos noted elsewhere, rather than one of interspecific territoriality. Yellow-throated Vireos (*V. flavifrons*) may occupy the upper parts of forests above Red-eyed Vireos (Hamilton 1962; Williamson 1971; James 1979); Red-eyed Vireos have been noted above White-eyed Vireos (*V. griseus*) (Hoiberg 1954) or Bell's Vireos (*V. bellii*) (Hamilton 1962); Warbling Vireos (*V. gilvus*) may be above Hutton's Vireos (*V. huttoni*) or Solitary Vireos (*V. solitarius*) (Hamilton 1962). There are no obvious habitat differences between the Gogama and Englehart study sites; both had groves of tall aspen (and birch) with an understory of shrubs. If anything, the Englehart site has older and taller aspens than at Gogama.

Does the interspecific territorial response of these species break down where one species is much more numerous than the other? If Red-eyed Vireos are continually concerned with intraspecific competition and the very few Philadelphia Vireos present are largely confined to a stratum of the forest above the Red-eyed Vireos, is there much reason for either species to engage in costly interspecific territorial disputes? At what population densities or in what circumstances are these two species induced to invoke interspecific territoriality? Clearly additional fieldwork is necessary to understand the relationships of these broadly sympatric species.

Literature Cited

- Hamilton, T.H. 1962. Species relationships and adaptations for sympatry in the avian genus *Vireo*. *Condor* 64:40-68.
- Hoiberg, A.J. 1954. Breeding-bird census: oak-pine stream bottomland. *Audubon Field Notes* 8:369.
- James, R.D. 1979. The comparative foraging behavior of Yellow-throated and Solitary Vireos: the effect of habitat and sympatry. In Dickson, J.G. *et al.*, *The Role of Insectivorous Birds in Forest Ecosystems*. Academic Press, New York, pp. 137-163.
- Rice, J.C. 1978a. Behavioural interactions of interspecifically territorial vireos. I. Song discrimination and natural interactions. *Animal Behaviour* 26:527-549.
- Rice, J.C. 1978b. Behavioural interactions of interspecifically territorial vireos. II. Seasonal variation in response intensity. *Animal Behaviour* 26:550-561.
- Rice, J.C. 1978c. Ecological relationships of two interspecifically territorial vireos. *Ecology* 59:526-538.
- Williamson, P. 1971. Feeding ecology of the Red-eyed Vireo (*Vireo olivaceus*) and associated foliage-gleaning birds. *Ecological Monographs* 41:129-152.