

## THE BRITISH COLUMBIA NEST RECORDS SCHEME

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In 1955 the Department of Zoology at the University of British Columbia in Vancouver instituted a scheme for the collecting, at a suitable repository, of information on the breeding biology of birds gathered by amateur ornithologists in the province of British Columbia.

The amount of information collected during the summers of 1955 and 1956 indicates that the scheme has wide application, and the interest shown in it by ornithologists in the states of the Pacific Coast and in Alaska suggests that if the scheme were better known more individuals might wish to cooperate in its studies. Therefore this short explanation of the method is presented.

The scheme is based on a similar organization in Great Britain run by the British Trust for Ornithology. Since 1939 that group has amassed some 60,000 nest records, each on a printed card distributed to members of the Trust. Currently some 10,000 cards are returned to the central office each year. It is understood that in North America the only similar schemes are one that has been in operation in Michigan for some years, one at San Jose State College, California, and one in Ontario that was started in 1956 by the Royal Ontario Museum.

The purpose of the scheme is to collect information on birds' nests that ornithologists and bird-watchers find, but which would otherwise go unrecorded or are recorded but left idle in personal field notebooks or diaries. The main items of avian biology that can be analyzed by this scheme are as follows:

1. The timing of the breeding season, the succession of clutches in species which lay more than one, and the variations in laying time from place to place and from year to year.
2. The size of the clutch and how this varies with latitude, altitude and climate.
3. The degree of success that birds have in hatching and rearing their young.
4. The essentials of habitat preference and variation in habitat throughout the range of a species; these data are provided by records of locality, vegetation type, and nest location for each nest found.

It is known that in most species the first three of these features vary from year to year, from month to month, with weather, and from individual bird to individual bird. As regards the fourth item, there is a lack of knowledge of habitat preferences in the Pacific Northwest. Our handbooks and local guides rely in most cases on information collected in some restricted part of the total breeding range. It is vital for faunistic, zoogeographical and ecological studies that we gather basic information about the variations of habitat preference and the effects of various habitats, as breeding places, upon the biology of clutch size and nesting success in the Pacific Northwest. The marked geographical distributions of the major habitat types (biomes, or life-zones, whichever classification we use) suggest a study of latitudinal trends in breeding in relation to habitat. On the other hand, as one passes from the humid coastal region through the various belts of the more arid interior to the Rocky Mountain chain, ecological and altitudinal trends may be important.

Studies of habitat differences, already made, point to the influence of habitat upon such matters as actual breeding time and full clutch size. For instance, field studies on the European Blackbird (*Turdus merula*) revealed that the average clutch size in this bird is 0.5 egg higher in the deciduous woodland than in the garden habitat (Snow, Bird Study, 2, 1955:72-84). It was also found by Coulson (Bird Study, 3, 1956:119-132)

that egg-laying in the Meadow Pipit (*Anthus pratensis*) is delayed one day for every 130 feet of altitude and that the clutch size and nest mortality are diminished with increasing altitude in this species. For such reasons we decided to emphasize habitat data in designing the British Columbian nest record card. As already pointed out such information seems to be just as important in breeding biology as the numerical data.

For the study of individual variations an extensive field program using marked birds is usually set up by some institution equipped to study such problems. But for all other purposes the data provided by amateur observers can be of considerable help. For exam-

YEAR 19		NAME OF OBSERVER				A.O.U. NUMBER	SPECIES	
NUMBER OF EGGS OR YOUNG						LATIN NAME		
SINGLE NEST VISITED REPEATEDLY			DATE			SINGLE VISIT TO UNIFORM COLONY		LOCALITY OR DISTRICT AS PRECISELY AS POSSIBLE
DATE Month; Day	EGGS	YOUNG	TIME (P.S.T.)	NEST NUMBER	EGGS	YOUNG	REMARKS	
:				1				
:				2				
:				3				
:				4				
:				5				
:				6				
:				7				
:				8				
:				9				
:				10				
:				11				
:				12				
IF MORE THAN 12 VISITS ARE PAID TO A SINGLE NEST FURTHER VISITS MAY BE RECORDED IN THE "COLONY" BLOCK.						VEGETATION TYPE OF AREA (note 7)		CONDITION WHEN FOUND (delete whichever inapplicable) BUILDING EGGS INCUBATING YOUNG
						NEST MATERIAL		
						ALTITUDE		FOR OFFICE USE ONLY
						IF ON SLOPE DIRECTION THIS FACES		FIRST EGG LAID
						POSITION OF NEST		LAST EGG LAID
						TYPE OF PLANT		FIRST YOUNG HATCHED
						HEIGHT OF NEST FROM GROUND OR CLIFF-FOOT... FT.		LAST YOUNG HATCHED
								FIRST YOUNG LEFT NEST
								LAST YOUNG LEFT NEST
								FULL CLUTCH SIZE
								NUMBER HATCHED
								NUMBER LEFT NEST
								REF. NO.

Fig. 1. Face-side of card (reduced) used in the British Columbia Nest Records Scheme.

ple, it is physically impossible for a student of chickadees or warblers to find 500 nests of each species in each of three different regions or biomes during one summer. Individual bird-watchers, however, during their annual nest-hunting, can find an approximation to such a number, and by their scattered distribution can overcome, for the professional, the impossibility of being in three places at the same time. That regional differences in breeding occur is known, but the fundamental significance of these variations and of the differences in breeding ecology between closely related species is not well understood. Statistical analysis is necessary, and personal bias needs to be eradicated. This can only be done by the use of large samples, and for any large analysis perhaps 1000 nest records per species per year are necessary. Of course, this goal can only be reached for the commoner birds, or for colonially nesting species. But the records of rarer species, in smaller numbers, are equally of value. This does mean, however, that for such a scheme as this to be a success, a much larger number of cooperators is needed in the Pacific coast states and in British Columbia. We hope that they will come forward when they have been able to judge the results of the first two seasons' work.

The files of the British Columbia Nest Records Scheme contained 1682 cards (see fig. 1) on December 31, 1956. These covered information on 2722 nests or broods of

139 species. Most were single cards covering one nest each, but a few were composite cards recording information (on one card) from a colony of gulls or cormorants, or from a number of broods of ducks.

In 1955, 26 persons contributed cards to the files. In 1956 this number increased to 60 for British Columbia. In addition three persons sent in records from Alaska and four sent in cards from the state of Washington. There were also a few miscellaneous records from beyond the Pacific region. In 1956, 1003 cards were returned and these covered 1606 nests or broods. Particular mention should be made of the 120 nests of Glaucous-winged Gulls (*Larus glaucescens*) which Mr. Gordon C. Odlum watched on Race Rocks, off the southern end of Vancouver Island. He was able to study them from the pre-egg stage through to hatching, and his observations are an example of the most valuable types of nest-record returns. It is seldom that sufficient nests are watched right through from the start until they either fail or their young fledge successfully. Experience in England indicates that the individuals who most often succeed in this are school children in their early 'teens, since they have greater persistence and more time, and it is found that if they are taking the trouble to watch nests scientifically at all, they take adequate precautions to prevent their activities from increasing the likelihood of nest failure. It is therefore as much for its educational uses as for its scientific value that this scheme should be promoted, and it is hoped that school natural history societies as well as other such clubs or societies will be interested in cooperating.

Already some use has been made of the records, and M. T. Myres has accordingly prepared a short account of the breeding activities of Cliff Swallows (*Petrochelidon pyrrhonota*) for publication at the same time as this report (pp. 311-316).

#### SUMMARY

A cooperative scheme for the assembling of data on the breeding biology of birds was organized in British Columbia in 1955. The aims of this scheme are outlined, and it is suggested that observers over the whole Pacific coastal region might eventually cooperate in the scheme. Already 1600 cards covering 2700 nests or broods of 139 species have been collected and are available for consultation.

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