

study of birds and the aims and objects of the Society by the Secretary, three short communications were made, one on the nesting activities of a pair of blackbirds (I.T.), one on a detailed study of the development of blackbird nestlings (L.G.) and one on the annual periodicity of singing of the bellbird, grey warbler and fantail (B.J.M.). Mr. Richdale also spoke on the activities of the Society and showed a film of his field work at Stewart Island. There were also a number of exhibits, including some of the historical MSS. in the possession of the Society, a set of nests constructed by one pair of blackbirds in one season (I.T.), a map showing the starling and sparrow roosts of Dunedin (O.U. Biol. Soc.) and a home-made mechanism for recording on a smoked drum, rotated by a clock, the movements of a perch (B.J.M.). Subsequently this mechanism has been set up at a blackbird's nest and is at present making a record of the times at which the bird enters and leaves the nest during incubation.

REVIEW.

The *Emu*, Vol. XLII., pt. 1, July, 1942. This number does not contain any papers from New Zealand, but one, "Photography in the Swamps—The Marsh Crake," by C. E. Bryant, deals with a bird which is found in this country also. A paper, "Petrel Notes from Western Australia" by F. L. Whitlock and H. M. Whittell, dealing with the bodies of petrels cast up on the beaches, will be of interest to members who have a chance to pursue this line of study. It is to be hoped that all members who find specimens in this way will endeavour to identify and measure them.

5.

(instructions will be sent on request), and if at all unusual to send them in to one of the museums for expert examination. Another paper of interest is "The Winter flocking of the Pied Currawong" by N. J. Roberts. This deals with an Australian species, but as an account of flocking habits it will be useful to anyone interested in this aspect of bird life.

PHOTOPERIODICITY INVESTIGATION.

The following remarks may give to the members of our Society a more adequate picture of the proposed study of photoperiodicity in New Zealand birds, than the short note published in the Second Annual Report of 1941.

For many years the close relation of the sexual activities of birds and of the amount of light, i.e., the length of the day, has been known to poultry-breeders. An investigation, published in 1930 by a member of the staff of the School of Agriculture, University of Cambridge, gives us an enlightening survey of the changes in maximum and minimum egg production in poultry in different countries of both hemispheres according to the changing length of daylight. Poultry-breeders have made many attempts in the past to obtain a higher yield in eggs, especially in winter months by introducing artificial light.

Due to the work of two American scientists, Professor Rowan, of the University of Alberta, Canada, and Dr. T. H. Bissonnette, of Trinity College, Hartford, Conn., many facts of the greatest interest for ornithologists have been made known. By a prolongation of a quarter of an hour daily, by means of an adequate electric light, they were able to produce a significant change in the size of the testicles in different birds, and later even in some mammals such as the ferret. In experiments performed in severe climatic conditions of the North American winter, they were able to obtain there as early as January, testicles of a size normally found at the end of April or in May. Later, Rowan found similar conditions in London starlings roosting in the city on account of the street lighting having the same effect as prolonged daylight. These phenomena are explained as follows:—The light acts through the eyes on the anterior lobe of the pituitary, thus inducing the latter to produce the gonad stimulating hormones.

Simultaneously, Dr. Pontus Palmgren, an ornithologist of Helsingfors, Finland, was able to make the following very interesting observations on

some birds of his country which is situated between 60 and 70 degrees of North latitude. Watching the activities of several birds according to a specially elaborated method, both at Helsingfors (60° 9 mins. of Northern latitude) and at Petsamo (69° 25 mins. of Northern latitude) in the arctic north, where the daylight lasts almost 24 hours over a period of more than a fortnight, he found interesting differences in their behaviour; in the latter place the birds were singing for nearly 24 hours, with only a short interval of rest of one to two hours in the afternoon. The tremendous amount of light during the Polar day thus reduced the normal rest per night to one or two hours. It was also stated by Rowan, Bissonnette and Palmgren that the factor of light, playing such an important part on the fertility, may also have some effect on the migration of birds.

6.

In his letter to me of September, 1941, Professor Bissonnette made the following remarks:—"Of course there (i.e. in New Zealand) is much work to be done regarding photoperiodicity in birds and mammals. Each species should have its type of reaction known so that a broad view of the causes behind the correlation of cycles with seasons can be known, and normal cycles of gonadal activity must be known first. So I feel there is much you can do in this matter even if experimental work is impossible at first." In another letter he said, "I was greatly interested in your letter of December 17th and the outline of observations for your collaborating with field observers. The plan is very inclusive and will furnish much-needed data on any species. Is any bird banding done over there to learn of possible migrations of native or introduced birds? Apparently we have two different strains of Starlings in America now, just as they do in England, a migratory or visiting population and a fairly stationary or local strain. They are said to differ in amount of body-fat during winter . . . and perhaps the two strains may be with you. . . ."

It is obvious that this country, owing to the long shape and similar climate of the two islands, is especially suitable for this investigation.

This investigation consists of field observations on three species, the White-eye (*Zosterops lateralis*), the Blackbird (*Turdus merula*) and the Thrush (*T. ericetorum*). It would be most desirable to have field observations simultaneously from Auckland or north of Auckland, Wellington, Christchurch and Otago or Southland districts on all these species. Observations on the same lines on any other native or introduced birds will also be welcomed.

Any members who would like to assist Mr. C. A. Fleming and the undersigned in this investigation, are asked to write to the latter. Address: Care Consulate General of Poland, Wellington, when they will be supplied with further information and the necessary simple forms for field observations.

K. A. WODZICKI.

DAILY NOTE TAKING, by J. M. Cunningham.

J. M. Cunningham, R. H. D. Stidolph and S. B. Yelverton are carrying out a system of classified note taking which has much to commend it. It provides, at the expenditure of 2 or 3 minutes daily, a complete check on any regular habits which are of any interest, and has already disclosed information of great interest. It is the presence of and song of birds in relation to the weather and season which is the object of the study, and from the form of the notes it is easy to say, for example, when the first and last seasonal songs of each bird were, etc. Many members no doubt note the occasion of the first song but it is rather difficult to do so in the case of the last, unless one notes each day a song is heard. That is our principle. The desire to get full results also helps to sharpen one's perception, and not let any small event pass and after a time listening and watching while outside, becomes an involuntary habit.

A fair sized sheet is used with $\frac{3}{4}$ in. squares printed on—35 horizontally, one for each day of the month and one for each of 4 weekly