

Western Australian Bird Notes

No. 5

Perth, W.A.

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Thirteenth Meeting - December, 1946

On December 13th, 1946, the general meeting of the Western Australian branch of the Royal Australasian Ornithologists' Union was held in the rooms of the Totally Disabled Soldiers' Association, 5th floor, Gledden Buildings, 731 Hay Street, Perth, the following members attending: Dr. D. L. Serventy (chairman), Miss O. Seymour, Messrs. T. S. Edmondson, R. Aitken, S. R. White, I. C. Carnaby, V. N. Serventy, C. B. Palmer, C. F. H. Jenkins, C. Eakins and A. H. Robinson.

DESPOLIATION OF KING'S PARK

A letter was received from the W.A. Naturalists' Club asking support for its protest at the proposal to establish a rose garden in King's Park. The grounds of objection were that the club was always opposed to the destruction of the native flora and fauna of the park; that any further development should be in the direction of replacing native flora destroyed in the past; that there were more suitable places for rose cultivation; that cultivated areas have been steadily encroaching on parklands and a halt had to be called and, finally, that the fame of King's Park rested on the natural fauna and flora existing in the heart of the metropolitan area, and therefore this aspect should be protected and strengthened. Major Whittell also wrote protesting against the proposal and suggested that a site for the rose garden might be chosen in connection with the layout for the new government buildings along the river front.

Mr. T. S. Edmondson said that the proposal to establish the rose garden was a misdirected one. The park with its sample of the native bushland as it existed before settlement of the Perth area would increase in worth to the community as the years went on and the neighbouring country altered under development. Encroachments on the native portion of the park had continually to be resisted as many interests were casting covetous eyes on the park. The citizens of Perth had to be ever-watchful as he seriously thought that otherwise the people might lose their King's Park.

It was decided to protest both to the King's Park Board and the Premier's Department. It was stated that among the other bodies which had done similarly were the Royal Society and the W.A. Division of the Australian Association of Scientific Workers.

GENETICS IN ORNITHOLOGY.

MR. C. B. PALMER gave an address on genetics in relation to birds. Apart from fluctuations due to the environment, he said, all variations, individual or specific, must be regarded as having a cytological basis. Very little has been done on the cytology of birds, and that mostly concerning domestic poultry. The chromosome number in fowls has been reported from 36 to 74, diploid; the uncertainty being due to the difficulty of counting. There are several pairs of large chromosomes and a greater number of small round ones, some of which may be fragments. Such an arrangement makes investigation difficult, and only about six linkage groups have so far been identified. These are probably on the large chromosomes, for it is reasonable to conclude that there is a correlation between the size of a chromosome and the number of genes it carries. The sex chromosomes in fowls are large, and many sex-linked characters have been found.

Mr. Palmer gave an outline of Mendelian inheritance and sex linkage, and the effect of multiple, epistatic, modifier, inhibitor and lethal genes. Regarding mutations, he pointed out that although large mutations having noticeable phenotypic effects are very rare, it is probable that smaller genic changes, particularly recessives, may be much more common. These small mutations may persist, and other complementary ones appear, so that a gene complex, better adapted to the particular environment, may be acquired. It is important also to recognize pleiotropic effects, when one gene influences several characters. Hence, a small difference, insignificant in itself, and having no survival value, may have a common origin and correlation with an invisible physiological mutation, which is definitely advantageous. The small noticeable difference may then serve as an indicator of the presence of the other factor.

It is often suggested that domestication, which includes an artificial environment and higher plane of nutrition, is instrumental in causing an increased mutation rate. This is difficult to prove, because selection and protection of abnormal types by breeders increases variability, and crossing individuals with different genetic constitutions leads to the production of numbers of Mendelian segregates. Budgerigars and canaries are notable examples of such diversity within species. Under domestication they need only to have viability (absence of lethal genes, at least in the homozygous state), but in the wild a higher survival value is demanded. It is generally accepted that sexual isolation is necessary for the production of a definitely distinct species. This can be achieved by geographical isolation, but other means, even psychological preferences, may be important.

Mr. Palmer considered that the real difference between species was more fundamental than such things as slight differences of plumage, which were often taken as marks of specific rank.

FIELD IDENTIFICATION OF DUCKS

A discussion on the problems attending the field identification of ducks was led by MR. ANGUS ROBINSON. He said that since it was first suggested to have the discussion, a paper on the subject had appeared in *The Emu* by Mr. J. Jones, of Melbourne. This was a helpful contribution to identification on the wing, but if we wished to study duck behaviour under natural conditions, we wanted to avoid putting the ducks to flight. Therefore it was essential to be able to identify the species on the water and to identify them quickly. This was much more difficult than in flight as the distinctive wing patterns were not usually seen. As an example, the White-eyed Duck is easily distinguished in flight but on the water he had seen it mistaken for the Chestnut Teal and also the Blue-billed Duck.

Mr. Robinson said that one could not take too much notice of the apparent size of the bird, except where the disparity was great, as size was often deceptive. The difference in size between a small Black Duck and a large Grey Teal might not be perceptible in the field. Individuals might also sit very high at times or very low, with varying degrees of submergence, with sometimes only the head and neck visible. The White-eyed Duck when low in the water, might not show any white on the flanks or under the tail, yet at other times these marks would be prominent. It therefore was evident that we had to find some prominent mark, easily identified at all times, when the bird was on the

water—and this distinguishing mark should preferably be on the neck or head. For this purpose the various species of ducks could first be divided into similar colour groups:

Grey-Brown Ducks

These comprised the Black Duck, Grey and Chestnut Teals, Blue-winged Shoveller and Freckled Duck. The Black Duck was so generally well-known that it could be taken as a standard for size. In both the Black Duck and the Grey Teal, the sexes were very similar and, he thought, indistinguishable in the field with any certainty. The chief difference between the two species was the striped head effect of the Black Duck, caused by the black stripe through the eye. This difference was noticeable even in the downy young. The Grey Teal had a plain head and was generally a smaller bird. He was unfamiliar with the Chestnut Teal but the female, in some cases, and the immature birds, were difficult to distinguish from the Grey Teal, though to an experienced observer they might be picked out by their darker plumage. Both Teal were readily distinguishable from other ducks when in flight by the white crescent-shaped patch in the upper wing. The female of the Blue-winged Shoveller might be mistaken for a Black Duck in general colour of the body, though the pattern was more distinct. The bill, however, was very different—the profile was almost a straight line from the crown of the head to the tip of the beak, not being turned as in other ducks. The male Shoveller had rich chestnut body plumage, with white flanks and light-grey head and neck during the breeding season, but also possessed an eclipse plumage similar to the female. The downy young and immature could be recognised by the bill characters. The speaker was unfamiliar with the Freckled Duck in life but it appeared that the point to look out for was the shape of the bill. This was concave and would seem, on paper, to be just as good a distinguishing mark as the shape of the bill in the Shoveller. The bill in the Freckled Duck had been described by some observers as bright red in the breeding season (vide North).

Uniformly-Brown Ducks

The Pink-eared Duck appeared a uniform buff-brown colour, without a pattern as in other ducks, though in close view the barrings would be perceptible. The distinguishing feature was the light head with the black patch around the eye. The bill was broadened at the tip like a Shoveller but the head and beak profile was like that of an ordinary duck. It had a whistling note both on the water and in flight. He had no field experience of either the Plumed or Whistling Tree Ducks, which would come in this category.

Chestnut-Brown or Chocolate Ducks

These were the White-eyed Duck, Blue-billed Duck, Chestnut Teal and Shoveller. Mr. Robinson said he could imagine the males of the White-eyed and Blue-billed Ducks and the male and in some cases the female Chestnut Teal causing some confusion, but the Shoveller should be easily distinguished by the bill and light grey neck and head. He had found the White-eyed and Blue-billed Ducks difficult to separate at times. The males of both species were similar in colour, with darker heads and necks and white eyes. The Blue-billed had a sleeker appearance but its distinguishing mark was the colour of the bill, which was a vivid light blue against the blackish bill with slaty tip of the White-eyed Duck. The female White-eyed was a shade lighter in body colour and had a dark eye. The female Blue-billed had more of a blackish-brown plumage with no blue bill and might be mistaken for a female White-eyed Duck if fine markings of plumage were not noticed. Ducklings of these two species were very dissimilar; that of the White-eyed Duck was notable for the amount of

yellow in the pattern, more than in any other duck species he had noticed. The Chestnut Teal again, though readily distinguished from the other species in flight, might be a problem on the water.

All-Black Ducks

The highly distinctive Musk Duck was the only one in this category. Like the Blue-billed Duck it would not take to the wing, but it had to be remembered that all immature ducks of any species could not be flushed.

Large Ducks

The Mountain Duck and the Maned Goose could be easily distinguished. The latter was notable for the fact that it often wandered some distance from water in its search for food, and the Mountain Duck was characterised by its preference for salt lakes and estuaries.

In conclusion Mr. Robinson said that the first point to note was the general colour of the bird, secondly the bill colour and shape and thirdly the markings of the head. Referring to Mr. Jones' field key, he criticised the illustrations of the White-eyed Duck and the Shoveller. That of the former gave the impression that a white bar between two darker bars was plainly visible. This was often not the case and in fact the wing more often appeared to have just a broad white tip. The markings of the Shoveller never appeared so clear-cut in the field as seen in the same illustrations. The blue in the wing was hard to detect in flight.

DR. D. L. SERVENTY agreed that the Chestnut Teal could be distinguished from the female Grey Teal by its darker plumage. It was generally of a richer brown and with a more pronounced rufous tone on the underparts. The female Grey Teal had a much more pronounced white throat and lacked any reddish tone on the underparts. He was puzzled by the significance of the occasional reports of female Chestnut Teals being shot which were in the bright plumage proper to the nuptial male. Could it be that in this species the females as they grew older assumed a similar livery as the male?

Fourteenth Meeting - January, 1947

On January 31, 1947, the general meeting of the branch was held at Gledden Buildings, Perth, the following members attending:—Dr. D. L. Serventy (chairman), Messrs. A. H. Robinson, S. R. White, R. Aitken, V. N. Serventy, A. Douglas, K. Buller, C. B. Palmer, J. Giles, F. G. Doepel and visitors, Misses W. Hall and Margaret Gowans and Master W. R. Serventy.

Holiday experiences were detailed by several members.

V. N. Serventy and S. R. White discussed the bird life of the Abrolhos and a paper on the subject will be prepared for *The Emu*.

K. G. Buller exhibited a live Crested Penguin (*Eudyptes cristatus*) which had been received from Major Whittell. The bird was found at Meelup, near Busselton, on January 29 and was in process of moulting. The chairman stated that an attempt would be made to rear the bird in captivity by adding iodine to the diet in an endeavour to avert the Aspergillosis infection of the respiratory passages which hitherto had killed off all penguins kept in the local zoo. Iodine deficiency was thought to be the cause of the trouble according to some work carried out in California.

A. H. Robinson said that Wood Sandpipers occurred fairly frequently at his Coolup swamp this summer. Two or three were to be seen usually and at times there were as many as five.

R. Aitken exhibited the head of a Pink-eared Duck shot at South Belmont during the month.

F. G. Doepel described the unusual behaviour of a Singing Honeyeater which he saw flying between the pickets of a wooden fence.

W. R. Serventy announced the finding of an additional nesting locality of the Wedge-tailed Shearwater (*Puffinus pacificus*) at Rottnest Island—he found the birds nesting at Green Island earlier in the month.

An Ornithological Collecting Trip

Dr. Serventy announced that arrangements had been made by the American Museum of Natural History to engage the services of Mr. K. G. Buller for a collecting trip in the North-West, between Shark's Bay and the Pilbarra country. The trip would take place beginning at the end of March. It was emphasised by the Museum that the objective was to obtain material for a study of geographical variation of the birds in the area and to that end Mr. Buller would concentrate on widespread, variable species which were usually quite common. Rare species, the delight of the old-time worker, were not to be sought for.

On the motion of Mr. S. R. White, the meeting commended the Museum for its enterprise and congratulated Mr. Buller on securing the appointment. He was wished good luck during his travels.

Fifteenth Meeting - June, 1947

On June 13, 1947, the general meeting of the branch was held at Arundale Hall, Museum Street, Perth, the following members attending:—Dr. D. L. Serventy (chairman), Messrs. A. H. Robinson, C. B. Palmer, T. S. Edmondson, V. N. Serventy, C. Eakins, F. G. Doepel and visitors, Mr. S. A. Prout and Master W. R. Serventy.

BIRD POPULATION STUDIES

Mr. V. N. SERVENTY presented a review of a recent publication by Dr. S. C. Kendeigh entitled "Bird Population Studies in the Coniferous Forest Biome during a Spruce Budworm Outbreak", and issued as Biological Bulletin No. 1, 1947, by the Department of Lands and Forests, Ontario, Canada. The investigation was conducted during the course of experiments in controlling the spruce budworm by aerial spraying with D.D.T. solutions and "because many people feared the effect of such sprays on wild life, especially birds, it was considered advisable to have a widely known independent biologist observe the effect of the spraying."

Mr. Serventy stated that the survey carried out by Dr. Kendeigh was of interest to ornithologists since there had been much speculation as to the effect of D.D.T. on bird populations. The conclusion reached was that the spraying of the area caused no appreciable effect on the bird community either directly or indirectly. Only a few cases of direct mortality were noted.

Apart from this very encouraging result, the method of the investigation was of interest to local workers, as well as some of the conclusions drawn as to the role of birds in combating insect pests. Briefly the method of working was as follows.

Four study plots were chosen, one of which was in an unsprayed area and so served as a control group of birds. Bird censuses were made by slowly traversing the whole plot backwards and forwards between two blazed lines. At the end of the season maps were made separately for each species and this revealed some interesting information in regard to territory areas. As the males were the most conspicuous their presence was taken to indicate breeding pairs.

A very high breeding density was found—319 pairs for every hundred acres—but this was probably due to the abnormal insect life in the area studied. Some interesting figures as to actual insect consumption are provided. During the breeding season the number of budworms eaten was roughly 16,000 per acre while the actual infestation was 376,000 per acre. Since the mortality of insects due to spraying was only 50 to 60 per cent, it could be seen that there was still plenty of food available to the birds. Dr. Kendeigh's conclusion was that birds could not bring the pest under control, but probably helped to increase the space of time between successive outbreaks.

Finally, Dr. Kendeigh gave some interesting generalisations on aspects of bird competition. Briefly he considered that the limiting factor on a bird population was competition between individuals of the same species. If a species over-saturated a particular area, then it tended to spread into other areas or else invaded habitats usually avoided. In these cases it might come into competition with rather similar species already occupying these niches. This might explain why in some areas, which appeared under-saturated with one species, might actually be saturated if we took into account inter species competition as well as competition within the same species. Normally the two species held their own in their particular niches as each would possess special adaptations fitting it for life in that type of environment. However, it is a point which students should bear in mind when watching birds. They should keep a lookout for any evidence of competition between different species.

INVESTIGATIONS ON THE TASMANIAN MUTTON-BIRD

Dr. D. L. SERVENTY gave an account of the investigations he was conducting on behalf of the C.S.I.R. and the Tasmanian Fauna Board on the biology of the Short-tailed Shearwater (*Puffinus tenuirostris*)—the mutton-bird of commerce.

He said that the commercial operations were centred on Flinders Island and the primary objective of the investigations was to determine whether or not the exploitation was excessive and to ascertain if any other factors were limiting the numbers of the birds. To provide data for a population study, about 700 young birds were banded last March, immediately prior to the opening of the catching season. The number of bands recovered by the "birders" during their subsequent operations would give an estimate of the escapement and, in conjunction with the figures for total catch, an estimate could be computed of the total population of the islands. In addition, counts were made in sample areas of a quarter-square chain to determine the density of burrows under various conditions.

Another aspect of the investigations was the study of the periodic, but very fluctuating, mortality among the returning migrants which occurred along the east Australian coast in the spring months. Widely varying explanations had been offered, but the cause appeared to be starvation due to the temporary absence of the normal food—principally a species of krill. There was a very interesting correlation with the abundance of pelagic fish at this time, particularly the southern bluefin tuna, which was scarce in heavy mortality years and plentiful in years of low bird mortality. Hence the number of dead mutton-birds along measured strips of beach, if enumerated annually, would provide a very good index of pelagic fish productivity each year.

OBSERVATIONS

Mr. Palmer produced two skins of a Black-heart Finch from the South Perth Zoological Gardens. The specimens possessed the long tail of *Poephila acuticauda*, being more rufous on the breast than that species, but had the tail all black as in *P. atropygialis*. As far as

could be ascertained the birds came from the Kimberley Division, and there were at least a dozen individuals in the Zoo collection.

Mr. Edmondson reported that whilst motoring along the Geraldton Road during the week he encountered about half a dozen Galahs 20 miles south of Moora—the furthest south he had yet seen that species. Mr. Doepel said he had seen a flock of 20-30 galahs at Leighton last September and Mr. Palmer said he had observed a pair at Bassendean as far back as 1928.

Mr. Eakins described cormorants fishing in company with "porpoises" in the Swan River estuary. The cormorants alighted just ahead of the "porpoises", where these would later rise.

OFFICE-BEARERS

It was decided to endorse the nomination of the following office-bearers as the branch's representatives on the Council:—Messrs. A. H. Robinson and E. H. Sedgwick (proposed by Messrs. Edmondson and Palmer) and Mr. C. F. H. Jenkins (proposed by Messrs. Eakins and Doepel). Mr. Serventy was renominated as State Secretary by Messrs. Robinson and Palmer.

IDENTIFICATION OF PRIONS

At the meeting of members on June 14, 1946, DR. D. L. SERVENTY gave an address on the problems surrounding the identification of Prions, but owing to pressure on space the report had to be excluded from our last number. Dr. Serventy said that five or six recognised species occur in seas off South-western Australia. After winter storms the remains of many are washed ashore on local beaches, but owing to their exceedingly close similarity the species are hard to distinguish. Except for one species, the Fairy Prion, they could be told apart only by bill characters and in most cases exact measurements of the width and length were essential.

The Fairy Prion, *Pachyptila turtur*, could be recognised at once by the wide black terminal tail band, which was about half the tail, and measured about 1½ inches in width. In all the other Prion species the terminal black tail band was narrow, measuring one inch or less in width. The Fairy Prion was a narrow-billed species, with a comparatively strong hook or dertrum at the end of the beak and very little interspace between the dertrum and the nasal tubes. It appeared to be the second rarest of Western Australian Prions.

The Thin-billed Prion, *Pachyptila belcheri*, was a not uncommon form and could be readily confused with the preceding. Apart from the matter of the tail there were important differences in the beak characters despite the fact that both species had narrow bills. In both, the width of the beak was from 8 to 12 millimetres, but the culmen was longer in the Thin-billed Prion (24 to 27 mm. as against 22 to 23 mm. in the Fairy), but a more striking difference was the separation of the dertrum by an appreciable space from the nasal tubes.

The commonest species washed up on the South-west beaches was the Dove Prion, *Pachyptila desolata*. It had a moderately wide bill, ranging from 11 to 14 mm. in width, and from 26 to 30 mm. in length. Thus there was some overlap between small-billed examples of the Dove Prion and wide-billed specimens of the Thin-billed Prion. Some of these apparent intermediates could be separated out when the beak ratio (length divided by width) was taken into account. In the Dove Prion the length of the beak averaged about twice the width, the ratio falling between the values of 1.8 and 2.3. In the case of the Thin-billed Prion, where the beak length was 2½ times the width, the ratio varied from 2.3 to 3.0. Even this method failed in some cases, how-

ever, and up to the present there was no way of allotting these to their proper species.

All of the preceding three species had straight beak margins when viewed from above and in the closed beak no lamellae were visible at the sides, between the cutting edges. In the remaining two Prion species, however, with wide bills, the margins were bowed and comb-like lamellae were clearly visible towards the gape when the beak was closed. The effect was not unlike that of a snarling dog baring its back teeth, as first pointed out by Gregory Mathews. Of the two species showing these characters the Medium-billed Prion, *Pachyptila salvini*, was by far the commoner in local waters, the other, the Broad-billed Prion, *Pachyptila vittata*, being perhaps our rarest Prion.

Distinction between these two species was best made on a balance of characters, thus the Medium-billed Prion had a beak width of 13.5 to 17 mm., a beak length of under 32 mm. and about twice the width, while the wing was usually less than 200 mm. The Broad-billed Prion had a beak width varying from 19 to 22 mm., quite frog-like in appearance. The beak length was 30 to 38 mm. and the ratio to width, 1.4 to 1.8. The wing was over 200 mm. in length.

No species of Prion had so far been found nesting in Western Australia. The Fairy Prion bred in south-eastern Australia, the nearest colony being at Lawrence Rocks, off Portland, Victoria. It is possible, but not proved, that our birds originate from there and not from some hitherto undiscovered nesting colony in the southern Indian Ocean, as believed by some ornithologists.

Specimens from the Serventy-Whittell Collection, and frequency distribution graphs of beak measurements, were used in illustration.

NEWS AND NOTES

Several of our teacher members have been transferred this year. Mr. S. R. White is now at Coorow with Mr. E. H. Sedgwick a neighbour across the sandplain nearly 30 miles off at Caron. Mr. C. S. Hamilton has left Carnarvon for Wongan Hills. Mr. H. O. Webster has gone to Rosa Brook.

Mr. V. N. Serventy has been transferred from the Northam High School to Perth Modern School.

Mr. L. J. McHugh has been appointed manager of the Bank of New South Wales at Wyalkatchem.

Mr. L. Glauert has been elected a Fellow of the Royal Zoological Society of N.S.W. and an honorary member of the W.A. Naturalists' Club.

Dr. D. L. Serventy was in the Eastern States during March, investigating the biological aspects of the Mutton-bird industry in the Furneaux Group, Bass Straits, on behalf of the C.S.I.R. and at the invitation of the Tasmanian Government.

The ornithological library of the late Mr. Justice T. P. Draper was disposed of by the executors to N. H. Seward Pty. Ltd., of Melbourne who have sold most of the choicer items. Some of the books have been purchased by local members.

Mr. K. G. Buller left Perth on May 18 for his collecting trip to the North-west on behalf of the American Museum of Natural History. He was featured in a newsreel at the Mayfair Theatre, Perth, during the first week of June.

Our veteran member, Mr. F. Lawson Whitlock, celebrated his 87th birthday on June 3.

Mr. Hugh Wilson has resigned his post as District Engineer at Kalgoorlie of the Goldfields Water Supply, and has left for Hobart, Tasmania, to become Designing Engineer with the Hydro-Electric Commission.