

THE SIGNIFICANCE AND LIMITATIONS OF FIELD NOTES

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The notes that birdwatchers make form the building blocks from which ornithological knowledge is constructed, and it is true to say that without good field notes there can be little, if any, documented ornithological knowledge.

Before an attempt is made to discuss in detail some of the factors that affect the significance and limitations of field notes it must be stressed that in all research, including ornithology, a basic and most important quality for any research worker is integrity.

This has been well expressed by Lack (1960):

'Integrity is as essential for the simplest as for the most difficult research. Probably all scientists start as the servants of truth, but not all end there. The desire to be the first to publish a new theory, or to complete a book by the contracted date, or to come in from the cold, or to fill in more Nest Record Cards than anyone else, can easily lead to hurried, unchecked and slipshod observations, though none of them need do so. A particularly difficult phase comes when one has enough observations to think one's idea is right but twice as many are needed to prove it. At this stage it is often best to try to catch oneself out rather than to confirm one's idea. Charles Darwin always noted with special care the observations pointing against his views, because he found it was these that he tended to forget. Faulty observations may, of course, be detected by a later worker, but the real reason for accuracy is not that you may be found out, but that you may not. Your paper may remain the last work on its subject for many years and be constantly quoted. Even a careless mistake in writing down one ring-number may result in a recovery being reported for the wrong species, and so may lead to distortion in another worker's views on migration. One further temptation, the desire to see the unusual, does not afflict the research worker nearly so much as it does the rarity-hunter, who is always biased against the probable. For in research a 'new' observation has normally to be repeated before it is of value.'

In this paper it is not intended to discuss methods of recording field notes. These vary with personal preferences and objectives, and a detailed discussion of the advantages and disadvantages of various methods would need to be a separate paper. But no matter what method is used, whether notebooks, printed forms or cards, tape-recorders or any other, it must be ensured that the notes are accurate and supply adequate data to fulfil the requirements for which they have been recorded. If inaccurate or inadequate data are recorded the future value of the field notes is doubtful because they will only mislead and confuse other ornithologists. The value of field notes becomes even more limited if they are collected but neither analysed nor published.

INACCURATE RECORDING OF DATA

Inaccurate recording of data is often because the observer 'guesses' when writing his field notes. One example of this is the attempt by birdwatchers to identify subspecies (or races as they are frequently called). Usually these cannot be recognized with confidence in the field and to say that one has been observing a particular subspecies is frequently nothing more than a guess based on the geographical distribution of the subspecies as given by standard books of reference.

Attempts by birdwatchers to identify subspecies have been encouraged by the allocation of vernacular names to subspecies as well as to species. One of the dangers of this is that it leads many birdwatchers, especially those who normally use only vernacular names, into thinking that these subspecies are equal in rank to species and are more important and clear-cut entities than they really are. This is far from being true because the species is a fundamental taxon that can usually be defined in biological terms, but the subspecies is only a subdivision of the species. Although these subdivisions differ morphologically and may occur in areas separate from other subdivisions of the same species, the differences are often so slight that they can rarely be discerned by field observation alone.

The attachment of a subspecific name to a bird based only on the known geographical range of the subspecies may in fact be erroneous because the bird being observed might be an immigrant from another area and consequently of an entirely different subspecies. The failure to attach a subspecific name to the bird being observed does not make the observation any less valuable or 'scientific'. A Little Bronze Cuckoo is a Little Bronze Cuckoo whether or not it is *Chrysococcyx minutillus minutillus* or *C. minutillus russatus* and, as was pointed out by Tucker (1949) when discussing the same matter in regard to Blue Tits *Parus caeruleus*, its essential attributes, as they concern the field worker, are the same in either race.

Anyone wishing to understand fully the principles and implications of nomenclature, with particular regard to the problems facing field workers, should read Tucker (1949), Scrventy (1950) and Whistler (1931). The following quotation from Tucker's article puts the matter clearly:

'The practice of distinguishing and naming subspecies was developed to facilitate the intensive study of geographical

variation, which is the task of museum workers, and the vast majority of subspecies cannot possibly be distinguished in the field by even the most skilled observers. In the majority of cases, therefore, the attachment of a trinomial name to a field observation is either at worst a mere guess or at best a pure assumption based on geographical considerations and adds nothing to the value of the record.'

Another example of 'guessing', leading to the recording of inaccurate data, may occur when the term 'adult' is used to denote the age of a bird. It is difficult to define exactly what is an adult bird, but in practice it is used to denote a bird that has reached its fullest development, the usual criterion being that the bird is capable of breeding. In many species this is indicated by the attainment of a breeding plumage. In others there is no such plumage and, unless the bird is engaged in an activity associated with breeding, it is not possible to tell by any morphological characters (if one excludes examination of the cloaca or brood-patch during the breeding season) whether or not it is of breeding age. Therefore, unless there is supporting evidence to show that these 'adult' birds are of breeding age, it is better to use a term such as 'free-flying' or none at all, and admit an inability to determine the age of the bird, rather than to use the term 'adult' because this may mislead other ornithologists into believing that the bird was breeding or was capable of breeding.

Inaccurate data are often to be found in the recording of localities. This applies in particular to the localities recorded on data sheets and cards, bird-banding schedules and museum labels. All too often the localities shown are inexact, e.g. a locality which is 25 km south-west of Canberra may be recorded simply as 'Canberra'. This could be extremely misleading to people who later use the data in connexion with distribution and occurrence because, among other things, the topography of the locality shown (e.g. 'Canberra', which is essentially suburban) may be entirely different to that of the locality from where the specimen or data was actually collected (e.g. '25 km south-west of Canberra', which is mountainous country covered by wet sclerophyll forest).

Once inaccurate data have been published they cannot be erased and consequently are very difficult to correct. The following example of this has been brought to my attention by S. Marchant (pers. comm.):

In a paper on the birds of Owerri Province, in southern Nigeria, Marchant (1942) reported that a small heron, *Ardeirallus sturmii*, occurred in the area. Later, after becoming convinced that his identification was incorrect, and that the bird concerned was probably *Butorides striatus*, he took the opportunity to have a statement to this effect published in

a paper on the birds of eastern Nigeria (Serle 1957). Despite this attempt to rectify the situation, Marchant's original record was used recently as evidence for the occurrence of *Ardeirallus sturmii* in the Owerri Province in a paper on the migration of African bird species in Nigeria (Elgood *et al.* 1973).

There is also a problem when original data, which may have otherwise been accurate, are misquoted. All too often one experiences occasions when 'possibly' has been quoted as 'probably' and then as a fact. Thus what was originally recorded as a speculation becomes in time an accepted fact. Another cause of inaccuracy is the progressively vague rendition of the details of the locality at which the observation was made or the specimen collected, e.g. '142 km west of Canberra' becomes 'west of Canberra' then 'the district of Canberra' and finally nothing more than 'Canberra'. Unless one has access to the original records it is difficult to correct misquoted data and so it is accepted. As a consequence it not only misleads anyone who is undertaking detailed work on the distribution and occurrence of birds, but also misleads the ordinary birdwatcher.

INADEQUATE RECORDING OF DATA

The inadequate recording of data is very apparent in the compilation of bird lists. Many of these are compiled simply by 'ticking' or listing the birds seen by the observer and no attempt is made to indicate either the numerical or, when there is good evidence to show that the birds are nesting, the breeding status of the birds concerned. Consequently, the rare and the common, and the breeding and the non-breeding, are reduced to a common denominator—a tick or name in a list. Many people do not even record the habitat in which the birds were seen.

Most of us, including the author, are probably guilty, to a greater or lesser degree, of this ornithological 'stamp-collecting'. Although it undoubtedly supplies a great deal of personal satisfaction (which, it will be argued by some people, is the principal reason why people watch birds) it does not contribute much to ornithological knowledge. Lists of birds that record that certain species occur in certain areas, but give little or no additional information about their numerical or breeding status, are of little value in later years because it is impossible to gauge whether the species contained on the lists are declining or expanding.

The use of such generalities as 'common', 'few', 'numerous', 'large numbers', etc., is not recommended because they provide little information unless their meaning, in numerical terms, is also given. If someone had recorded that a 'few' Wedge-tailed Shearwaters *Puffinus pacificus* and 'numerous' Little Penguins *Eudyptula minor* were breeding on a particular island and the following year you visited the island

and found 20 pairs of Wedge-tailed Shearwaters and 283 pairs of Little Penguins nesting there, did you see more, or less, than he did? Although it often requires much more effort to count the birds that you see, it is more useful to do this whenever possible because your observation can then be compared with those of others or indeed with your own subsequent observations.

Another example of the inadequate recording of data is the lack of supporting evidence given for some of the statements which appear in published papers, particularly some of the papers which report the sighting or collecting of new or rare species. Many of these papers contain only a brief description of the bird, or occasionally none at all, and it appears that the reader is expected to accept the author's identification of the species concerned. This undoubtedly derives from the tedium which some observers encounter in writing detailed field notes or from the observer's conviction that he has correctly identified the species.

In Britain, the editors of *British Birds* sponsored, in 1959, the formation of a Rarities Committee to overcome this problem (Pyman 1960). The committee consists of ten ornithologists of wide experience who, with the co-operation of regional organizations, assess at a national level the validity of the observations of birds that rarely occur in the country. This ensures that the observations are assessed uniformly and not by the inevitably various standards of the different county reports alone. Before the formation of the Rarities Committee it was left to the editors of the various ornithological journals and county reports to assess the validity of the records that they published, as now happens in Australia. This placed a great burden of responsibility on the editors, who, as individuals, did not always have the knowledge or opportunity to decide whether or not a particular record was valid. As a consequence, they were probably frequently forced to accept or reject records on nothing more than pious hopes. The formation of the Rarities Committee removed this responsibility from the editors and, equally important, it brought together in the one place all the well-authenticated records of new or rare birds so that a general picture could emerge.

Until such time as we have a Rarities Committee or similar body, it is important that papers reporting the occurrence of new or rare species should contain full details of the diagnostic characteristics by which the bird was identified. These should be noted at the time the bird was observed or handled and should be included in the published report. This should apply whether or not a specimen has been lodged in a museum because it may not always be easy or convenient for others to gain access to the collection in order to inspect the specimen. Moreover

the specimen may be lost or become so damaged as to be unrecognizable. The paper should also include details of the author's own supporting research into the validity of his claim. Unless full attention is given to these matters the value of such records is limited because the identification will always be open to doubt and the record may not be accepted in the future.

An example of how easy it is for the most competent of observers to misidentify a species, especially if they have no previous experience of the species concerned, and for their misidentification to be accepted into the literature, is the affair in Britain of the 'Berkhamsted Grey Shrike' (Ferguson-Les 1960). This single shrike was regularly watched by experienced observers in March and April 1940, and again in the winters of 1940-41 and 1941-42, and was identified by all concerned as a Lesser Grey Shrike *Lanius minor* and reported as such in the literature (Oldham 1940; Rutherford 1941). Lesser Grey Shrikes are rare vagrants to Britain and the occurrence of one at Berkhamsted created a great deal of interest amongst birdwatchers. However, in February 1942 it was intensively and closely observed by B. W. Tucker, and H. G. and W. B. Alexander, and shown by them to be without any doubt merely an aberrant and probably rather small Great Grey Shrike *L. excubitor*—a less rare winter visitor (Tucker 1942).

The warning given by this affair should be heeded by birdwatchers in Australia; for, it shows that even the most competent of observers can make mistakes. No one whose identification of a bird is questioned should take offence. Not only will such questioning help to prevent erroneous records from being published in ornithological journals, but also it may save the person making the claim from being embarrassed in the future. It may also encourage the person to re-examine his data and so produce evidence supporting his claim.

At this stage it is perhaps appropriate to quote the points made by Nicholson (1952) when discussing the recording of sight-records of rare birds. These were based on recommendations made earlier by Witherby (1930) and Alexander (1944):

'... do not record a bird as seen unless you have taken down on the spot its characteristics before consulting a work on ornithology. It is entirely unsatisfactory to view a bird in the field, taking insufficient notes, and then, finding its supposed portrait or description in a book, even a short time afterwards, to proceed to work out an account or sketch of what was seen.

Field-notes should state:

1. Distance of bird from you, whether you were using glasses or not, and nature and direction of light.
2. Nature of ground it was on and what other birds (if any) it was associating with.
3. Whether you saw it from different angles; whether at rest or in flight; whether from above or below.

- (The more varied the conditions of observation the better.)
4. What were its actions and what was the character of its flight compared with other birds.
 5. Its general form as compared with other birds, and how it differed from other birds at all like it which are known to you.
 6. Its size, provided it could be compared with that of another bird of a known species seen close to it. (Otherwise estimates of size are very unreliable.)
 7. Particular points in structure as compared with other birds, such as size and shape of bill, length of legs and feet, shape of wing, length of tail.
 8. Colour of bill, legs and feet; any distinctive white or colour patches or markings, and their exact position. (Some general anatomy should be learnt so that you can give the colour of wing-coverts, under tail-coverts, nape, throat, chin, or other parts of the plumage accurately.)
 9. So far as possible, an exact description of the whole plumage of the bird, not only the parts that you think may help in identifying it.
 10. Any calls or notes, indicating especially the quality of the sound (harsh, rattling, shrill, hoarse, liquid, etc.) and comparison with notes of other species if this assists the description.

Although most of these recommendations were first proposed over forty years ago, they are equally true today and should be carefully noted by all observers. If these recommendations are carried out they will help to eliminate erroneous and doubtful records.

Good examples from Australia of the compiling of meticulous field notes and subsequent reporting in the literature of sight-records of rarities are the first Tasmanian records of the Dunlin *Calidris alpina*, Large Sand Dotterel *Charadrius leschenaultii*, Oriental Dotterel *C. veredus*, and Red-kneed Dotterel *Erythronyx cinctus* (Thomas 1969), and what is probably the first sight-record in Australia of a Buller's Albatross *Diomedea bulleri* (Rogers 1969). The field notes and supporting research supplied in each of these papers leave us in little doubt as to the identification of the species and the validity of the authors' claims.

Recent examples from Britain, which show the high standard now expected of observers there, are the sightings in Kent of the Pallas's Sandgrouse *Syrhaptes paradoxus* (Davenport, Davenport and Wheeler 1967) and the Royal Tern *Sterna maxima* (Davenport and Hollier 1968).

THE USE OF DATA

The question of how to gain access to, and make the best possible use of, observations contained in the notebooks of ornithologists in Australia is one which should be of concern to everyone interested in furthering ornithological knowledge. Many valuable field notes lie unpublished in notebooks which eventually will finish up in the local rubbish dump. A few ornithologists undoubtedly have a rather possessive attitude towards their data and are unwilling to share

them with others, but most do not know what to do with the data they have collected or have too little to analyse and to publish. Many of these data are of little significance themselves, but collectively they can amount to something of substance.

The total value of observations by a large number of ornithologists would be considerably enhanced if they were collected according to certain categories. This would facilitate the collation of the observations, and their analysis by those who want to use the data. An example of this approach in Australia can be seen in the operation of the RAOU Nest Record Scheme (Thomas 1971; Marchant 1973). Much of the data being collated by the Nest Record Scheme consists of single observations which by themselves have little or no value, but when they are examined collectively with all the other single observations they do become valuable. For example, an individual may think that the record of the nest of a Willie Wagtail *Rhipidura leucophrys* in his garden is so ordinary and trivial that it can interest no one; indeed, looked on as an isolated record it has little value at all, but if it can be used as part of the record of the breeding of the species throughout its range it then becomes valuable. The use that may be made of data of this type is exemplified in a recent paper by Courtney and Marchant (1971) which supplied details of the laying routine, clutch-size, length of incubation and nestling periods for eighteen species of birds breeding in south-eastern Australia.

The value of 'co-ordinated research' of this type, both in Australia and overseas, has been discussed in detail in two articles in this issue by Davies (1973) and Ridpath (1973) and so nothing further needs to be said by me on this subject.

Perhaps the main thing to remember is that no matter how accurate and plentiful are the data that have been collected they are of little use to Australian ornithology unless they are eventually published. It makes no difference whether the data are collected and published by an individual or collected and published as part of a co-operative research project; the main thing is to ensure that they are published so that the time and effort put into their collection are not wasted.

REFERENCES

- ALEXANDER, H. G. 1944. On field identification of birds. *Br. Birds* 38: 89-93.
- COURTNEY, J., and S. MARCHANT. 1971. Breeding details of some common birds in south-eastern Australia. *Emu* 71: 121-133.
- DAVENPORT, D. L., L. J. DAVENPORT and C. E. WHEELER. 1967. Pallas's Sandgrouse in Kent. *Br. Birds* 60: 416-419.
- DAVENPORT, M., and J. N. HOLLYER. 1968. Royal Tern in Kent. *Br. Birds* 61: 559-561.
- DAVIES, S. J. J. F. 1973. Application of co-ordinated research on birds to Australian conditions. *Emu* 73: 217-221.

- ELGOOD, J. H., C. H. FRY and R. J. DOWSETT. 1973. African migrants in Nigeria. *Ibis* 115: 1-45.
- FERGUSON-LEES, I. J. 1960. Studies of less familiar birds. 106. Lesser Grey Shrike. *Br. Birds* 53: 397-402.
- LACK, D. 1960. Hints on research for bird-watchers. *Bird Study* 7: 9-20.
- MARCHANT, S. 1942. Some birds of the Owerri Province, S. Nigeria. *Ibis* 84: 137-196.
- . 1973. Seventh and eighth annual reports of the RAOU Nest Record Scheme. *Emu* 73: 34-36.
- NICHOLSON, E. M. 1952. Editorial: sight-records of rare birds. *Br. Birds* 45: 1-2.
- OLDHAM, C. 1940. Lesser Grey Shrike in Hertfordshire. *Br. Birds* 34: 17.
- PYMAN, G. A. 1960. Report on rare birds in Great Britain and Ireland in 1958. *Br. Birds* 53: 153-173.
- RIDPATH, M. G. 1973. Co-ordinated research overseas. *Emu* 73: 213-216.
- ROGERS, A. E. F. 1969. Further occurrences of Buller's Albatross in Australia. *Emu* 69: 175-178.
- RUTHERFORD, P. 1941. Lesser Grey Shrike in Hertfordshire. *Br. Birds* 34: 178.
- SERLE, W. 1957. A contribution to the ornithology of the eastern region of Nigeria. *Ibis* 99: 371-418, 628-685.
- SERVENTY, D. L. 1950. Taxonomic trends in Australian ornithology—with special reference to the work of Gregory Mathew. President's Address to the Annual Congress, Hobart, 1949. *Emu* 49: 257-267.
- THOMAS, D. G. 1969. First records of waders in Tasmania. *Emu* 69: 131-136.
- . 1971. Sixth Annual Report of the RAOU Nest Record Scheme. *Emu* 71: 97-98.
- TUCKER, B. W. 1942. The Berkhamsted Grey Shrike. *Br. Birds* 36: 51-53.
- . 1949. Species and subspecies: review for general ornithologists. *Br. Birds* 42: 129-134, 161-174, 193-205.
- WHISTLER, H. 1931. An open letter to the editors. *Bombay nat. Hist. Soc. J.* 35: 189-195.
- WITHERBY, H. F. 1930. Editorial comment in 'Letters'. *Br. Birds* 23: 343-344.

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