

1926.—*M. trivirgata* R.A.O.U. Check-list (2nd ed.), p. 62.

The localities and sex of the skins figured in the coloured plate are *Monarcha trivirgata gouldi*, No. O.23018 ♂, Wide Bay, Queensland. *M.t.albiventris*, No. O.17115 ♂, Cape York, Queensland. The specimens were kindly lent by the Australian Museum, Sydney.

Scientific Collecting

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Scientific collecting, or collecting with a scientific object in view, is to my mind a necessity if our knowledge of animals and plants is to advance, or even hold its present ground. But there are many aspects of life which can be studied scientifically without requiring any collecting of specimens. That rare individual, the born naturalist, is almost inevitably a collector, and will take infinite trouble over his pursuit. From the scientific standpoint he is priceless, one to be fostered and helped to the utmost of our power. The half-hearted individual, the seed that has fallen on stony ground, he who endures but for a day and then turns to some other quest, equally brief, is to be condemned as emphatically. Let us apply these remarks and others following thereon to ornithology in a series of dicta:—

(1) Collecting in ornithology may apply to the birds themselves, to their eggs or their nests, or to all of these.

(2) The fullest possible use must be made of any specimen collected which has necessitated the taking of life.

(3) There must be an adequate scientific purpose underlying the taking of such life.

(4) To ensure that sufficient thought is given to (3), the collector should be required on his honour and as far as possible, to make a skin of any bird shot, however injured the specimen may be. Since this entails laborious and careful work of from half to one and a half hours' duration, no collector can, with this proviso, take any appreciable toll of bird life.

(5) To reduce the taking of life still further, the collector should be required to skin, just as if they had been deliberately shot by him, all dead birds (within reason) that he may be able to obtain. It is astonishing what additions may be made in this way. Birds are frequently picked up dead. On our beaches many and valuable finds may be made.

(6) Commercial collecting should be prohibited. Unless to a museum, or under exceptional circumstances, the sale of bird skins or of eggs should be stopped.

(7) The toll on bird life by the scientific collector has been greatly exaggerated or grossly distorted. It is very doubtful whether all the scientific collecting that has been carried out in Australia since its settlement has affected in the slightest degree at the present time the number of any species, even the rarest. This statement is based on the following points:—

- (a) The average life of a bird is probably short,* though Cockatoos may live perhaps to a hundred years. Large birds probably live longer than small ones. Most small birds in a state of nature probably do not survive for ten years. A bird that rears two young a year has a natural expectation of life of one year under natural conditions, *i.e.*, when in zoological equilibrium. A Chestnut-eared Finch, laying five or six eggs, if breeding once a year, would have an expectation of life of four or five months, or if breeding twice, half that amount. And so on. Birds that have large clutches are subject to correspondingly large risks, either when young (*e.g.*, Ducks), or when adult. It may be said then that we greatly under-estimate the natural annual death-rate of our birds if we say that one-tenth of all of them under natural conditions would die each year. Compared with this, we may apply the legal maxim, *De minimis non curat lex*, to the toll on bird life exercised by the scientific collector.
- (b) A single bushfire of moderate extent must destroy a number of native birds much greater than that due to all the scientific collecting so far in this century.
- (c) A drought is equally disastrous.
- (d) A few feral cats may destroy annually more birds than any collector. The fox also exacts a heavy toll.

(8) Permits to collect can safely be granted by the constituted authorities to reliable persons, who should be required to undertake that no bird-life or eggs would be taken unnecessarily or in undue quantity; that the utmost scientific use would be made of the material; that unless with permission, or to a State Museum, there would be no sale of specimens, and that a skin would be made (unless exceptional circumstances or the scientific requirements prevent this) of every bird shot.

*Prof. Cleland has suggested that it would be of interest to invite records of the ages of birds that have been kept in captivity, and if they are reliable, of individual birds in a state of nature.—Ed.