

authoritative work on that family. Mr Chisholm is a retired journalist and one-time staff member of the publishing firm of Angus and Robinson, of Sydney. He was a past president of the Royal Australian Historical Society and was Editor-in-Chief of the Australian Encyclopaedia. Dr D.L. Serventy, Principal Research Officer of the Division of Wildlife Research, C.S.I.R.O., will take the distinguished visitors on an extended tour which will include, as its highlight, a visit to Albany and Two People Bay to view the habitat of the Noisy Scrub-bird.

Mr J.D. Macdonald, keeper of the Birds Department of the British Museum (Natural History) of South Kensington, U.K., will disembark his collecting expedition at Fremantle on November 18. Mr Macdonald will spend some time in Perth as the guest of Dr D.L. Serventy, before proceeding overland to the eastern States where the Museum's collecting expedition will get under way. The trip across Australia will be used as a shake-down journey.

CORRIGENDA

We regret that it is necessary to correct two of the figures shown in the table headed "W.A. FISHERIES PRODUCTION" and published on page 144 of the previous issue. The 1961 production of Australian Salmon should have read 2,697,115 lb. and consequently, the actual overall total for that year should have read 28,655,688 lb.

STATE FISHERIES ACT

The table on page 168 sets out details of the licenses issued and value of the boats and equipment registered at each of the licensing stations in the State. It should be noted that, particularly in respect of the Fremantle, Perth, Geraldton and Shark Bay areas, the figures do not represent the actual number of men and boats engaged in fishing in those districts.

AUSTRALIAN FAUNA AUTHORITIES CONFERENCE

The biennial conference of fauna authorities in Australia will be held in Tasmania in the first week of this month. As reported elsewhere, the Director and the Fauna Protection Officer will represent this State. With delegates from all other States, the Northern Territory

STATE FISHERIES ACT.Licenses issued and value of Boats
and Equipment by Districts - 1961.

District	Professional Fishermen	Amateur Fishermen	Fishing Boats	Value of Boats	Value of Equipment
				£	£
Albany	105	47	79	69,488	34,460
Broome	11	-	2	6,000	300
Bunbury	84	127	74	68,780	32,810
Carnarvon	-	3	-	-	-
Esperance	5	3	2	9,000	-
Fremantle	977	135	402	1,770,525	498,425
Geraldton	515	24	287	810,220	184,505
Mandurah	96	75	90	29,730	29,395
Onslow	2	1	1	260	-
Perth	168	506	118	76,015	50,480
Port Hedland	8	-	3	910	-
Port Samson	19	-	6	3,030	250
Shark Bay	49	4	52	31,365	4,930
Total	2,039	925	1,116	£2,875,323	£835,555

Total Value of Boats and Gear - £3,710,878

and Australian Capital Territory, together with representatives from the Commonwealth Departments of Primary Industry, and Customs, they will assemble in Launceston on Sunday, September 2, and go overland to Hobart the next day, where the formal sessions will be held. The full agenda includes about thirty items, a number of which indicate new approaches or attitudes to the overall problem of conservation. Included among them are four which we have had listed for discussion and in respect of which background papers have been submitted. As they summarise current thought and policy in this State, these papers are reproduced here in full.

(a) Training of Fauna Field Officers

Although until recently relatively few fauna field officers had been appointed by the different States, they are now playing an increasingly important role in the administration of the fauna laws. Their chief duty is to police the legislation and to supervise measures designed to conserve and protect fauna. In the course of duty they are called on to investigate and report upon the desirability of initiating conservation measures. They are asked to make crude ecological surveys of areas set aside, or proposed to be set aside, as sanctuaries. They are required to carry out public relations functions, to attend and address meetings of local governing authorities and bodies with rural and other interests. In short, they are the eyes and ears, and often also the mouthpiece, of the administration.

So far as is known, no formal training is available for prospective fauna field officers, and one is compelled to be guided very largely by instinct when selecting men for vacancies. Training in some form or other is consequently essential after appointment.

In many respects fauna officers' duties are comparable with those of fisheries field officers. It is now acknowledged, by Commonwealth and State authorities alike, that the task of a fisheries field officer is of sufficient importance to warrant the establishment of annual schools of instruction, but no move has hitherto been made to provide similar training for fauna field officers. It is true, of course, distributed among the States there are between 120 and 150 fisheries field officers, whereas the total number of full-time fauna field officers probably does not exceed 15 or 20. Nevertheless, in their particular field they carry out duties equal in value to those performed by their co-workers in fisheries.

The fisheries field officers school, inaugurated in 1961 and repeated this year as a co-operative venture on the part of State and Commonwealth administrations (including C.S.I.R.O.), will, it is hoped, become an annual feature. Initially it is being held at the headquarters of the Division of Fisheries and Oceanography, C.S.I.R.O., at Cronulla, N.S.W. That Division has provided the principal of the school and lecturers in certain subjects, and the Commonwealth Fisheries Office and certain of the States are making lecturers available.

The syllabus comprises lectures, demonstrations, practical work, tutorials, as well as a visit to a fishing port. The first school was of a fortnight's duration, but the 1962 school was extended to three weeks. This will probably be the length of succeeding schools.

The purpose of the school is the elucidation for field officers (this term includes both inspectors and technical officers) the meaning and the application of fisheries science. Its function is to fill the gaps in training which the State Departments themselves are unable to fill. Accordingly the syllabus is devoted principally to teaching the various aspects of fisheries science, although some attention must necessarily be paid to administration and technology.

Each State is free to send as many of its officers as desired to the school. At the 1961 school 19 students were present. Six of these came from New South Wales, 4 each from Victoria and South Australia, 2 each from Queensland and Western Australia and 1 from Tasmania. Each State is required to pay the travel and sustenance costs of its own students.

It is proposed that conference consider the desirability of establishing a similar school for fauna field officers. Perhaps it could express an opinion as to whether schools of the nature indicated are feasible or necessary, and, if so, to set up a small ad hoc committee to prepare recommendations for submission to the participating instrumentalities through the conference secretariat. Without being too specific, the subjects which could be embraced by the proposed school are administrative and regulatory procedures, report writing, legal aspects, reserve management, interpretation and recording of field conditions, habitat changes, etc., field recognition of fauna, elementary ecology and zoogeography. Schools would not at the outset be held annually, having regard to the paucity of candidates, but perhaps every three or four years.

(b) The Menace of Acclimatization

Reference was made at the previous conference to the desirability of the States obtaining legislative authority to control (a) the keeping of exotic species in captivity, and (b) their movement between the States (vide Resolution 10). It is noted that provisional agenda item 5c provides for the discussion of Resolution 10, but we believe that the question needs much wider consideration and discussion than it had previously. We hold that fauna authorities should be vested with absolute power to prevent, in respect to vertebrate animals at least, their introduction, movement and acclimatization into or around the continent.

We urge that Conference establish the principle that there must be no introduction of exotics of any description except for approved scientific or agricultural purposes. Before the introduction of any exotic fauna is allowed, the likelihood of its becoming acclimatized and its possible effect on the native biota should be studied by competent biologists and ecologists. Admittedly there are Commonwealth regulations restricting the introduction of animals into Australia, but a number of species, particularly of birds, are already here. Other species again could find their way into the country without the approval of any State, either by being smuggled in, or by carelessness or ignorance on the part of the administration. Additionally, all birds, with the exception of parrots, may freely be introduced into Australia from New Zealand. Such imports are certainly subject to certain provisos, but while these are satisfactory so far as they apply, they do not go far enough. The fact also remains that the States still need complete authority over the exotics already within their own boundaries. They require adequate powers to deal summarily with unauthorised attempts to introduce or acclimatize exotics, and they require power to police any introductions made with the necessary approvals.

These matters need to be dealt with on an Australia-wide basis because the political divisions, with the possible exception of Tasmania, do not form discrete zoogeographical regions. Reports of recent attempts said to have been made to acclimatize grouse in South Australia, coupled with what appears to be a continuing demand to acclimatize other game birds, including waterfowl, illustrate the pressing need for early decision. Accordingly we ask conference to recommend that appropriate complementary legislation be introduced in each State and Territory to prohibit any acclimatization of exotics,

except by the approval of all States and Territories. The consent of all States and Territories to any introduction is essential, for although certain species of fauna might not have thrived in one State or Territory, or become a pest there, it does not necessarily follow that in an entirely different environment they will not become well established and assume pest proportions elsewhere in the Commonwealth.

We also recommend that a pamphlet be prepared for release by all authorities setting out the dangers of acclimatizations and the need to consider all their possible side-effects on a continental basis.

(c) Mammalian Conservation and Research

At the 1960 Brisbane conference, several references were made to the gaps in our knowledge of mammals, including our extraordinary marsupials. In the report on the proceedings of the conference (p.20) a general survey of marsupial abundance and status was said to be in hand, but it was not detailed. Under Item 15, the need for the preparation of a checklist was discussed and it was recorded (p.56) that a "revised checklist of mammals could be considered as getting near the first draft". Resolution 11 of the conference sought to enlist the co-operation of the Australian Mammal Society in the preparation of such a list.

One of the other papers tabled at that conference was titled "Australia's Threatened Mammals", by J.H. Calaby and F.N. Ratcliffe. It drew attention to the paucity of basic data on our mammals and said that "with a few exceptions, information on the habits and biology of Australian mammals is sadly lacking". It included a list of those mammals which, on the evidence then offering, seemed most endangered by the processes of civilisation. Included among them was the Mardo (Antechinus flavipes leucogaster), which was described as probably extinct. Since then specimens have been collected fortuitously from three or four different localities in the South-West Land Division of Western Australia. The creature was presumed extinct apparently because no specimens had been received for some years at the Western Australian Museum. Similarly, the Western Ring-tailed Possum and the Woilie were listed as rare, but in the last twelve months or so reports of their occurrence in the South-West have come to hand. Both may in fact be more common than was thought, particularly the Ring-tailed Possum. There is a faint hope that another Western

Australian mammal on the list, the Marl (Perameles myosura), which has been described for many years as extinct, still survives in country along the south coast, similar to that at Two People Bay, where the Noisy Scrub-bird was re-discovered last December, and where a number of other rare birds have been found subsequently. A report of the occurrence of the Marl is entirely unverified, and unless some evidence is brought to light we must presume that a mis-identification has occurred. It is not desired to criticise the authors of the paper concerned. It was prepared with utmost care from the information then available. It is the intention merely to illustrate how little is really known.

A good deal of the south coast vegetation is soon to fall before the bulldozer as development progresses. We fully realise it should be surveyed thoroughly as soon as possible and reserves created where necessary. Unfortunately the strength of the arguments for the setting aside of permanent reserves is weakened by our inexact, if not total lack of, knowledge of the distribution of our fauna, especially of the lesser-known ones. We feel that there is an urgent need for a survey on an Australia-wide basis to establish authoritatively what species still exist, the broad limits of their range and the priorities to be allotted to each in conservation work. Once this has been done more detailed surveys could be commenced to ascertain their ecological relationships and what are the critical factors necessary for their survival.

The administrator charged with responsibility for the conservation of native fauna requires definite information. As a farmer cannot hope to manage his herds unless he knows what they comprise and where they are, so we must have similar basic data to conserve fauna. The literature on the present-day distribution and occurrence of native mammals needs to be brought up to date, and in this respect the survey carried out by Marlow on marsupials in New South Wales seems a good starting point.

(d) Protection of Reptiles

As they are an integral part of the natural Australian scene, reptiles are as worthy of protection as are other classes of indigenous fauna. In Western Australia they have had, or certain species have had, protection for more than a decade and the need for protection is generally accepted. It would assist conservation and protection in our State, however, if other States and

Territories exercised similar or complementary controls.

While definite knowledge is lacking, it does appear that reptiles are suffering less from the pressures of civilisation than are other classes. However, in Western Australia there are two species in respect of which protection appears absolutely necessary. They are the Johnston's Freshwater Crocodile and the Short-necked Tortoise. In respect of the former, protection appears necessary to ward off increasing commercial exploitation which could cause a drastic diminution in numbers. The tortoise, on the other hand, appears to be limited to such a small area that protection is absolutely essential.

In Volume 29, part 4, of the Transactions of the Zoological Society of London (April, 1961), Dr Hugh B. Cott, of the University Museum of Zoology, Cambridge, presented the results of a scientific inquiry he had conducted into the ecology and economic status of the Nile Crocodile (Crocodilus niloticus) in Uganda and Northern Rhodesia. Among other things the inquiry dealt with the exploitation and decline of the species. Cott concluded that the inroads being made into the population provided a classic example of exploitation and mismanagement of a valuable resource. Referring to the scientific status of the order generally, the writer said, "Crocodylians also merit protection in their own right. Crocodiles essentially like the modern species existed in Jurassic times and were contemporaries of the dinosaurs. As the only remaining members of the archosaurian stock which have survived the age of reptiles, they are of quite exceptional scientific importance, not least from the indirect light which studies of anatomy, physiology, ecology and behaviour can throw upon the biology of ancestors long extinct. It would be a grave loss to science and research, and to posterity, if these saurians - which have survived for over a hundred million years - were now to be sacrificed to the demands of uninformed public opinion, and subordinated to a passing fashion in leather goods".

The Johnston's Crocodile, which is closely related to the Nile species, appears to be quite common in the Kimberley Division of Western Australia. Long regarded as harmless and timid, it has, according to crocodile hunters, suddenly assumed plague proportions. It is now said to prey heavily on native fishes, such as barramundi. There have been allusions to its ferocity and suggestions that it would attack man at almost every opportunity. These remarkable changes in its feeding habits and general behaviour coincide with technological advances in the preparation of the skin for market and with a reported

diminution in the numbers of the saltwater crocodile. We consider the animal worthy of protection and in need of conservation.

With controls over export exercised at ports, the legal protection afforded the creature can be enforced with some measure of efficiency. However, we are somewhat embarrassed by claims that consignments of skins have been brought into this State from animals taken in the Northern Territory. We are concerned too that consignments could easily be transported from this State to the Northern Territory or Queensland for shipment from ports outside our control. It would be of considerable help if the Northern Territory and Queensland were to bring in complementary measures in their areas - if only in relation to control over imports and exports - so that there could be co-operation in respect to the policing of illegal trading in this State. The Commonwealth, too, could assist by refusing permission to export until the State authority granted an export permit similar to that issued for other fauna.

We in Western Australia have so far been able to resist attempts by traders to bring freshwater tortoises into Western Australia for sale. As delegates might recall, the fad of keeping immature specimens of those creatures in bottles flared up some time ago, and branches of chain-stores in Perth sought to bring in large numbers. Fearing that their owners would tire of them and release them in lakes and streams, we gave short shrift to the proposal to introduce the fad and the animals into this State. Too little was known of the life history of our Short-necked Tortoise (Pseudemydura umbrina) to say whether the eastern States animal (Emydura macquarii) would be a competitor in the same ecological niche. However, the risk that it could be so was not worth taking. The provisions of section 92 of the Constitution loom as a threat to local protection laws, particularly when there are no complementary ones in other States. It would, therefore, be of considerable assistance to Western Australia if the other States and the Territories would take power to exercise control over reptiles, so that we could secure their co-operation in these matters.