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DEPARTMENT OF PARKS AND WILDLIFE

SERVICE BULLETIN

Greetings for Christmas and New Year



from the Director and Staff

DECEMBER, 1966
VOL. XV, No. 12

DEPARTMENT OF FISHERIES AND FAUNA
108 Adelaide Terrace, Perth, Western Australia

DEPARTMENT OF FISHERIES & FAUNA
ANNUAL CONFERENCE

The annual conference for officers of the Department of Fisheries and Fauna was held in very pleasant surroundings in the new government offices building in Kings Park Road during the week commencing Monday November 7th.

The itinerary for the five day conference included addresses by the Minister for Fisheries and Fauna, Administrative Officer J.B. Crookes from the Public Service Commissioner's office, the Director, Mr. A.J. Fraser, Dr. G. Chittleborough C.S.I.R.O., Mr. N. Smyth, Crown Law Department and branch heads of the Department.

Syndicate discussions were held on topics submitted by officers of the department and a consensus of the decisions of the syndicates are printed hereunder. The outcome of these will be discussed by a joint committee of branch heads and the results will be published in this bulletin at a future date.

The conference was attended by all field staff of the department and a majority of staff from head office. There had been a substantial change and increase in numbers in staff of the department with a total of 21 new faces since the conference the previous year. New members introduced themselves and following this older members were named. Later in the conference, in his address, the administrative officer, Mr. B. Saville, touched on the changes in personnel and pointed out that though there had been a substantial change in staff, he had, in the past, found that the majority of officers who left the department sought to return not long after. As the Minister, Mr. G.C. MacKinnon, said in his opening address the departmental officers had an onerous task.

During the conference several films on Japanese and Australian fisheries were screened. Viewers were impressed by the methods and scope of Japanese fisheries.

Mr. J. Robins, Research Officer (Development), in his address outlined the proposed tuna surveys to be commenced late in November, and members of the research section outlined their work.

Inspecting staff and field officers presented their reports. Mr. H.B. Shugg, Fauna Officer, gave a talk outlining his study tour of Europe earlier this year and screened some of the slides taken on his tour. The slides

proved to be most engrossing.

Senior Research Officer, B. K. Bowen, gave a very interesting talk on his attendance at the Australian Staff College in the Eastern States, and outlined the nature of the training given at this school.

One of the highlights of the conference was the instructional talk given by Mr. N. Smyth of the Crown Law Department who outlined the requirements, and the pitfalls, on the prosecution procedure. As he pointed out, with the substantial penalties now provided by the Act, the courts were apt to take a stricter line with prosecutions under the Fisheries Act. It is hoped that the contents of his talk can be reduced into a booklet for issue to all field officers.

The Minister's address is presented below.

Mr. G. C. MacKinnon M.L.A., Minister for Fisheries and Fauna

It is not very difficult to be interested in something that, in itself, is very interesting, and I must admit that I have found my duties as Minister for Fisheries and Fauna very absorbing.

Over the past few years there have been quite a number of changes and we are very well equipped, from the legislative point of view, to be able to handle the situation. Last year we had not been able to work under the new Act and I said at the time that a tremendous amount of discretion was required to properly handle the powers contained in the Act.

This applies, of course, to any field in which we have more powers, but, no matter what legislative power is given us, we must be careful how we use it. It is one of the saving graces of a democracy that if we are not careful we find our powers will be whittled away. There are always a number of people willing to hop on the "band wagon", and say we've got too much power and are too dictatorial.

The powers we have now are powers of responsibility and they are adequate for the job in hand. With a few minor amendments that have been passed this year we have things pretty much under control.

On the fauna side there is still, however, much to be done. Mr. Shugg, our fauna officer, has just returned from a study tour overseas and as a result will have quite a few good ideas that can be incorporated in the Act when it is amended next

year. This will lay the foundations for another step forward in fauna conservation.

As a result of our achievements lately we have been able to reduce the trafficking in undersized crays by 75%. But the 25% left is going to be really tough. The "opposition" is constantly reorganising and streamlining its activities and I think this balance is going to require all your ingenuity and adaptability to track them down and cope with them.

What the ensuing season will bring remains to be seen; the prices may be a bit difficult and this may entice people to add to their catch with undersize crayfish.

You all know that whether you are fair or unfair it reflects on you immediately because of the way news spreads up and down the coast like wildfire. Strangely one ever has to be careful in being kind, because kindness can result in the man being considered a bit of a "cream puff". A great deal of discretion is required.

It would be very nice for the fisherman if he could make big money for a couple of years but this would not pay the interest on the capital expenditure required by him, and would not pay for the development of the other sections of the industry, in prawns and other fishing.

Western Australia is currently earning more than the rest of Australia put together in exports in the fishing industry. From an international point of view, then, it is a very important industry. Ten years from now, irrespective of what the other states do, we should be so far in front that they will probably want to put a fish under the black swan.

But we can't develop our potential without the crayfish. Crayfish, of course, will take up the bulk of our time. Not only the economics, but the social attitude and happiness of those working in the industry depends on us.

You have to use your own judgement, your own ingenuity, your own imagination and, indeed, even some of the tricks that are being used against us. You have to stay one jump ahead.

Some of the problems of the industry are not easy to solve but we have to face up to them. We are part of a rapidly growing State and have an important part to play.

In case I don't see some of you before then, I wish you all a happy Christmas. I hope the conference will be a success and have pleasure in now declaring it officially open.

SYNDICATES

A consensus of the answers given to questions submitted to syndicates, at the Staff Conference, are listed below. These will be discussed by a committee of branch heads and the outcome will be published as soon as they are available.

The answers shown are as near as can be given as the overall opinion of all groups.

Question 1 What should be done to resolve the conflicts between power boat operators and fishermen in relation to the effect speedboats have upon estuarine fisheries?

Answer: A better liaison with the Harbour and Light Department is necessary and a programme of public education appears necessary. Zones may need to be set aside.

Question 2 Should field officers be permitted to exercise their discretion in policing the Acts and Regulation? If so to what extent?

Answer: Yes, but within the limits of Departmental policy and common sense.

Question 3 In what particular aspect of their work do field officers mainly require training?

Answer: The consensus of opinion was that comprehensive training was desirable, and that officers should be kept abreast with activities of all sections. Public relations were prominent in the answers given.

Question 4 Should field officers continue to gain experience in all sections of the department or has the time come when they should specialise in one departmental function e.g., Fisheries Inspector, Fauna Warden, Technical Officer, Seagoing Duties.

Answer: An all round knowledge was desirable with some degree of specialization at senior levels.

Question 5 Should license renewal reminders be sent to amateur fishermen?

Answer: No, but good publicity should be given in all newspapers.

Question 6: Should changes be made to section 56 of the Fisheries Act which states that the Act does not apply to aboriginals under certain conditions?

Answer: The consensus was that the sociological aspects of the aboriginal should be considered. Some modification was desirable.

Question 7: Should a standard of dress be prescribed for field staff, as opposed to a uniform?

Answer: Yes.

Question 8: Should the one mile closure for the taking of crayfish be extended north of the 30th parallel?

Answer: The research section should look into this and make a suggestion on it.

Question 9: Should haul netting for salmon, mullet and herring be permitted during the winter months, for twenty-four hours a day, between Rous Head and the Cable Station at Cottesloe?

Answer: The area should be open, but further evidence should be obtained before a fixed policy is established.

Question 10: Should the Inspector-in-Charge at Albany be responsible for licensing, collection of returns, etc. at Esperance?

Answer: Some degree of supervision, with perhaps an occasional patrol, was desirable, but not direct control.

Question 11: What action could be taken by administration to provide you with a greater interest and satisfaction in your job?

Answer: A closer understanding and more positive attitude toward field staff, with training programs and job rotation provided.

Question 12: Should restrictions be placed on amateur fishermen in relation to the quantity of crabs they may take? Should there be a reduction in the legal size for taking crabs?

Answer: No. Additional policing would be required and there were sufficient crabs to satisfy those who wanted to catch them.

Question 13: What action should be taken where there is evidence of wilful damage to the carapace of a crayfish, which has the effect of increasing its measurement to legal size?

Answer: Legislation should be passed to prevent this and any instances found should be reported to Head Office.

Question 14: Would the use of a crayfish gauge of 2-15/16", which would extend from the front of the ridge in front of the horns, rest on the back edge of the carapace, be of greater value than using the present gauge of 3", which must fit over the ridge and back edge of the carapace?

Answer: No. Present gauge of 3" and method of measurement is more satisfactory.

Question 15: Should the Southern Crayfish (Jasus lalandii) be included on the second schedule?

Answer: The majority decision was yes, and that the size should be as in South Australia. The dissenting group maintained that there were insufficient of them to worry about.

Question 16: What are the main dissatisfactions that result in officers leaving the department?

Answer: General working conditions.
Not enough consideration from Administration.
Allowances need review.
Restricted off-time movement.
Isolation.

Question 17: Should the wilful concealing of registration numbers of fishing vessels be construed as obstruction?

Answer: Yes, but proof would be difficult.

Question 18 Should a toilet and a shower be made available for use with departmental caravans? If so, what form should they take?

Answer: Portable units should be made available and permanent blocks built at commonly visited sites.

AUSTRALIAN FISHERIES SCHOOL

Three officers from this Department attended the Australian Fisheries School course for field officers during September. Those who attended were E.J. Little, G. Clifford and W.M. Mahoney.

The course covered a three week period and students from W.A., N.S.W., Victoria, Queensland, New Guinea, New Zealand and one from the Department of Primary Industry, Canberra, attended.

Subjects covered by the course were principles of fisheries science, stock management and field methods. The course involved lectures, group discussions and practical lessons. Each student was required to give a lecture on some particular aspect of the Industry in his own State.

The results of the course were:-

Distinction (in order of merit)

Equal (T.F. Meany, Primary Industry
(O.J. Thomas, Victoria
J.H. Davidson, Victoria.

Pass (in alphabetical order).

N.H. Hopkins, N.S.W.
W.M. Mahoney, W.A.
J. Warn, New Zealand.

Credit (in order of merit)

Equal (G.J. Daniel, Queensland.
(R. Hayes, N.S.W.

Equal (K.E. Janes, Queensland.
(E.J. Little, W.A.
L.F. Malcolmson, T.P.N.G.

Equal (E.W. Beckham, Tasmania
(R.W. Budd, N.S.W.
K.J. Veal, Victoria.
G. Clifford, W.A.

CRAYFISH - ROCK LOBSTER ANNUAL DINNER

Senior members of the staff attended the Annual Dinner of the Crayfish - Rock Lobster Development Association on Friday, November 11th.

Those attending were A.J. Fraser, B.R. Saville, B.K. Bowen, R.J. Slack-Smith, J.P. Robins and J.E. Bramley. They accompanied the Minister for Fisheries, Mr. G.C. MacKinnon.

In his speech Mr. MacKinnon said that it was difficult to establish the world production of crayfish and lobsters. The last edition of the World Year Book of fisheries production available does not clearly disclose the figures. All crustaceans are lumped together. Australia's production of tails for that year, 1964, was 4,900 metric tons, representing just under $\frac{1}{4}$ of the total world production. Western Australia's share of the Australian catch was 70%, Mr. MacKinnon said, and therefore this State was responsible for perhaps one-sixth of the world production. The nations next in order of importance were South Africa, South-West Africa and Brazil.

Mr. MacKinnon further stated that recently we had reached the peak of production - some $21\frac{1}{2}$ million lbs. - but in the following years there occurred a cataclysmic fall to the order of 16 million lb. Everybody, he said, fishermen, processors, brokers, and administrators knew that something must be done to arrest the outgoing tide. Immediate steps were introduced - the number of boats was restricted - replacement of boats was placed under strict control - the number of craypots restricted - escape gaps introduced and penalties substantially increased. Scientific studies were accelerated. Not always, he pointed out, had these new measures met with whole-hearted support of industry.

The Department of Fisheries and Fauna and CSIRO, between them, spend \$80,000 annually on crayfish research; shortly additional staff would be appointed.

Mr. MacKinnon said that a year or two ago a preliminary estimate of annual production was given as 16 million lbs. and the production for the year ended June 1966 was $17\frac{3}{4}$ million lbs. It seemed that our policy was paying off.

He pointed out that there had been much criticism of the Department's policies in relation to refusal to allow fishermen to acquire bigger and more efficient vessels. This

policy would be reviewed next year and until then, when the investigations into the industry were complete, he would not, save in the most exceptional circumstances, vary this policy.

The people of Western Australia, he concluded, have, through their parliamentary representatives, given us the responsibility of protecting this fishery, and he did not want people to think that he or the Departmental heads had shut themselves off from the facts. This fishery belongs not to any one fisherman but to the population as a whole, and although it might appear that hardship is being done in a few cases, we must always keep in mind the need to do the greatest good for the greatest number.

FAUNA BULLETIN

The bulletin for Honorary Wardens of Fauna in Western Australia which has not been published for several years will be recommenced next month.

The first issue which is based largely on Fauna articles taken from this bulletin will be distributed early in January. The Fauna Bulletin will be published each quarter thereafter and will be based on information sent in by Honorary Wardens.

Each Honorary Warden is obliged to submit a quarterly report on fauna observed by him, or other information of value. By using this information as the basis of the bulletin, wardens will be able to keep abreast with fauna movements in all parts of the State.

There are nearly 500 honorary Wardens of Fauna in the state and they are made up of people from all walks of life; from farmers to pharmacists.

Some are very active and we have printed (on page 142) in this bulletin some of the good work that one of these enthusiasts has been able to perform. Others are perhaps not as active, but are continually observing fauna movements and are able to give us some information in their quarterly reports.

With a state so large, and with such remote areas, we have a difficult task in keeping up with fauna in all districts. It is only through the efforts of honorary Wardens that we are able to do so.

CRAYFISH INDUSTRY ADVISORY COMMITTEE

The members of this committee travelled to all major crayfishing centres during the period October 17th - 26th, holding meetings at Dongara, Geraldton, Jurien Bay, Lancelin and Fremantle.

A delegation from the Fishermens association at Geraldton was received by the Committee and a number of individual fishermen brought information forward. The majority of fishermen appeared satisfied with the current situation in the industry.

The Committee members inspected harbours and facilities for fishermen and processing factories in these centres. The fishermen were well occupied, preparing for the season which opened on November 15th.

RESEARCH VESSEL "SETTLER"

A crew has been sent to Brisbane to take delivery of the Departments new research vessel, the "Settler".

The "Settler" is a raised foc'sle, sharpie trawler and was launched in August 1965. The craft is 60 ft. long and has a beam of 16'8". The G.M. V8 marine diesel installed in her gives a cruising speed of 8-9 knots.

The vessel will be refitted at Fremantle before being put into service.

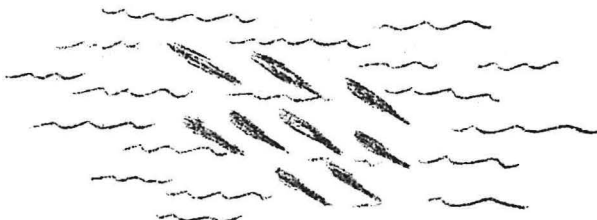
ALBANY ANCHORAGE.

The Under Secretary for Works, Mr. J. McConnell has advised this Department that active consideration was now being given to the provision of an additional mooring area north of the existing facilities at Albany.

TUNA SURVEY COMMENCES

Senior Research Officer (Development) Mr. J. Robins has commenced a comprehensive tuna survey of the coast.

The survey is being done from twin engined aircraft which will follow a zig-zag course up the coast, so that the whole of the coastal waters will be covered by each run.



FUR FEATHERS AND OIL

Reference was made to the cohabitation of West Australian Petroleum Pty. Ltd. oil men and fauna on the Barrow Island reserve in the September issue of the Petroleum Gazette. It reported on this subject being mentioned at an international conference in Switzerland, which was attended by Fauna Officer H.B. Shugg.

W.A.P.E.T. has brought in productive wells on Barrow Island and, by maintaining a strict set of rules, the Company is achieving its objectives without disturbing the fauna. The Company's activities are confined to a small section of the island.

The Department has received letters from many interested people who have expressed concern for the safety of the Wildlife, but we have been able to assure them that the fauna is being well cared for.

CAPE RICHE DUCKS

Honorary Fauna Warden, D.J. Moir, of Cape Riche, has advised that due to the high water level in swamps in the district, the black duck population is higher than it has been for some years. The abundance of water in the swamps has been caused by heavy winter rains.

BIRDS AT SEA

The P.V. Pelsart, while on patrol early in November, called at Lancelin Island to check on the bird population.

"We saw hundreds of bridal terns, many of which appeared to be paired off, but we saw no signs of nesting. Crested terns, caspean terns, as well as the usual numbers of silver gulls and pied cormorants were seen. Another bird sighted, but which we were unable to positively identify, was not unlike a wedge tailed eagle. This intruder appeared to be causing a great deal of consternation among the smaller birds.

Later we stopped at Wedge Island and sighted a sooty oyster catcher, curlew, common sandpiper and apart from a few silver gulls and crested terns, bird life on the island was relatively scarce. We did, however notice a sea eagle's nest but this did not appear to have been occupied recently."

WHAT YOU CAN DO FOR FAUNA

A report submitted by Mr. Rob Breeden of Busselton, as required under the terms of his Fauna License contained considerable detail of his activities and shows just how much care and assistance he has been able to give to fauna in his district. An extract of his report is printed below.

"No fauna was shot or killed for scientific study. Several species of animals were caught alive (mainly possums) and liberated elsewhere, as they were causing a nuisance to householders.

Including all species of birds, reptiles and animals, either caught personally, or brought in by bulldozer operators and others, the fauna disposed of was as follows.

1. Childrens python sent to the Zoo
2. Four tiger snakes, 3 dugites, 2 whip snakes and several worm snakes sent to the museum.
3. Two legless lizards and other types of lizards were sent to the museum.
4. A number of ringtail and grey possums which were trapped in and around houses by myself and others were released locally.
5. Eight pigny possums were caught, 5 released and 3 sent to the Museum.
6. Two dead honey possums sent to the Museum.
7. Four dunnarts were sent to the museum.
8. A number of dead Wambengers, caught by farmers cats etc, were sent to the Museum.
9. A large number of dead quendas killed by motor vehicles were brought in by motorists. Several live ones were released and a few babies obtained from dead females were hand fed.
10. A quokka was sent to the museum.
11. A dead water rat was sent to the museum and a live one released.
12. A number of Native Cats run down by vehicles were brought in.
13. A large number of sick or injured birds, including swans, stilts, owls, owlet nightjars, native hens, sea birds etc were brought in and cared for until recovered."

There are a number of people in Western Australia who have a deep and genuine interest in our fauna. They render very valuable assistance to the State and the receipt of reports of this nature is very refreshing.

KANGAROO FARM

Over the past few years a number of people have suggested, or proposed, the establishment of Kangaroo farms in Western Australia.

Indeed, it is not really a new idea, but one that is being given more serious thought as time passes. With the inroads being made into the grey kangaroo population and with the farming development, resulting in vast clearing operations, it is inevitable that the Kangaroo will become a rare sight in the closer farming areas.

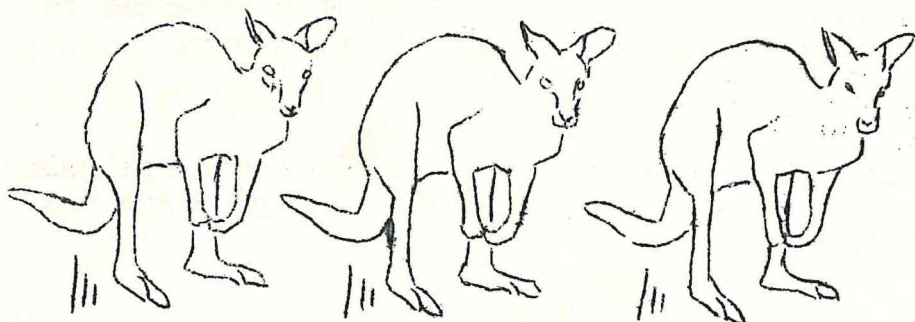
Even now, farmers, who in the past have been outspoken against the kangaroo, are beginning to realise that they are, in fact, becoming a rare sight in some parts of the South West. Only recently one family drove 800 miles through the South West on all types of roads, to see only one kangaroo.

As the kangaroo becomes less plentiful a number of people can see some economic possibilities in farming them.

Fauna Officer, Harry Shugg, recently investigated one such proposal and has reported favourably on it.

The man involved, who has had some veterinary experience has available 1000 acres of largely virgin country in the Jarrah forest area. He proposes to fence it to keep the kangaroo in, and other animals out, and with proper animal husbandry and pasture improvement hopes to be able to build up a stock over an initial period of several years.

Quite apart from the economic benefits that may arise from the farming of the 'roos, I have no doubt that the farm, provided it is in striking distance of Perth, would become a unique tourist attraction enabling visitors, and local people, to have a good look at a large number of these animals, in near natural conditions.



BOODIES FROM BERNIER ISLAND

In 1959 several boodies were taken from Bernier Island, at North West Cape, by the C.S.I.R.O. for study purposes.

An article has been published by Eleanor Stoddart, of the Division of Wildlife Research, on the behaviour of these marsupials in an enclosure.

The *Bettongia lesueuri*, the boodie, is one of the Australian native marsupials that have apparently suffered the advent of the white man, his domestic stock, and the rabbit. Although it once was widespread on the mainland, it is now confined to several islands, and possibly in central Australia. Very little is known about this animal.

Eight boodies, 6 females and 2 males, were placed in an enclosure of $\frac{3}{8}$ acre and were observed from a hide over a period of time. The enclosure supported oats and pasture when rainfall was heavy, and an abundant supply of apples, carrots, enriched dog biscuits and hoppers of oat grain were provided. There was a continuous water supply in one trough.

The author presented her article on the boodies under a series of headings, the main points of which are set out hereunder.

Locomotion.

Their movement was always bipedal, the hindfeet being always used in unison. The forelegs were only used for support when gathering hay. The tail was never used for support.

Resting

They sometimes rested on the surface but often retired to the shelters provided, or down the burrows in the evening. In the shelters they curled up with the tail forward and head down. Before settling they arranged the hay under them by scratching with their forelegs.

Grooming

Extensive grooming was done in the nests following or preceding a rest, but occasionally some grooming was done in the open.

Feeding

Forepaws were used to pick up food and they sometimes took food from one another, starting squabbles. They were not seen to drink.

Digging

The boodies did not dig any new burrows, but used the old rabbit burrows that were in the enclosure. Modifications made to the existing burrows were one new entrance and the excavation of a channel as deep as the burrow, and up to several feet long, away from the entrance.

Nest Making

Nests were made in the boxes provided and in the burrows where they spent the day. Hay was collected in their mouths, but carried by the curled tail, as shown in the sketch. A bundle of hay about half the size of their body was collected.

Males

The males were aggressive toward one another and frequently chased one another, with occasional scuffles. They fought by laying on their sides and lashing out with their hindfeet. The chases were apt to end abruptly, for no apparent reason.

The males actively defended their females.

Females

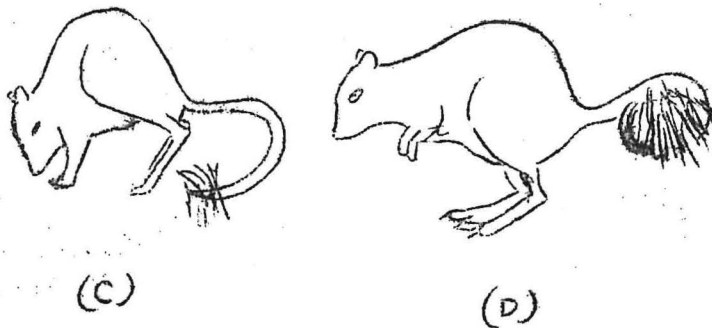
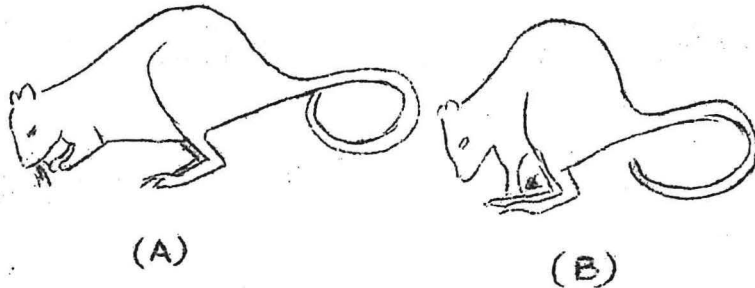
The females, generally, were communal and few chases were recorded, usually caused by one particularly aggressive female.

Conclusion

The conclusions that were drawn from the observations were :--

1. The boodies are gregarious
2. The males are aggressive
3. The females sociable and peaceful
4. The males defended their females rather than a territory in the enclosure.
5. The sexual behaviour can be compared with that of other macropod marsupials.

6. The method of locomotion contrasts with that of the large kangaroos, which use forelegs and tail for support when moving slowly.
7. The boodie carries its nesting material, hay, in a bundle by using its tail.



The above sketches show how the *B. lesueuri* gathers hay for its nest.

- (A) Picking up strands of hay in its mouth.
- (B) Pushing hay backwards with the forefeet.
- (C) Pushing it over the curled tail with the hindfeet.
- (D) Carrying the full bundle, after gathering several mouthfuls.

SWAN RIVER NOTES

Swan river fishermen have apparently been having a field day catching yellowtail.

Reports indicate that they are plentiful all along the river and have been described as almost plague proportion.

* * * * *

Has any officer of the department seen any dolphins along the river of late?

At one time they were a common visitor up the river and in the past have been sighted as far up as Janning Bridge. There have been no reported sightings for some time.

* * * * *

Mullet fishermen have been bringing in some fair sized crabs in their nets lately.

Does this indicate that the once plentiful crabs are returning?

* * * * *

SHORT-NECKED TORTOISE TAKES TO THE AIR

Twelve short-necked tortoises should now be on the air broadcasting continuously.

Mr. A.A. Burbidge, of the University of Western Australia, in his six monthly report, has advised that twelve more of these reptiles have been released, fitted with radio transmitters so that research workers can keep a track of them during the summer.

During the last six months Mr. Burbidge has been able to catch a total of 74 tortoises, including 6 which were recaptured from previous years.

All the tortoises captured were released onto the reserve, with the exception of 6 hatchlings that are being kept at the Zoology Department of the University for feeding trials.

Searches were made at Mogumber and near the coast, but without success. Mr. Burbidge believes that the tortoise may exist near Mogumber.

STAFF NOTES

Leith Beal, licensing clerk has been transferred to Mines Department Records Office. He commenced duty there on November 14th.

Kurt Ammerer left on November 24th for the Eastern States for several weeks annual leave. He will be returning via the Department's latest vessel, the M.V. Settler.

The Annual Social Dance of the Department of Fisheries and Fauna was held at Wembley Lodge on Friday, November 11, the closing day of the Staff Conference.

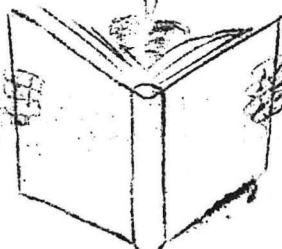
Unfortunately the date clashed with the Lobster Fishermens Annual Dinner and senior departmental heads were unable to attend until later in the evening.

The dance was very well attended and the staff members and their guests very obviously enjoyed themselves.

One of the highlights of the evening was a Pride of Erin dance in which a senior departmental officer partnered Miss Marlene Clayton. Ignoring all warnings from the Minister for Fisheries, Mr. G.C. MacKinnon, "Uncle Ben" showed all present how to do the "Pride of Erin" and really enjoy yourself at the same time.

The month of November is a bad month for some people because of the condition that strikes a number of departmental officers. Those affected by "examination fever" in head office were Pat Mahoney who hopes that at the end of next year he will have completed his Associateship in Public Administration.

Kurt Ammerer is also studying toward the same qualification. Bob Baker sat for two subjects in accountancy. Jeff Galbraith sat for some leaving standard subjects.



S.A. FISHING COMPANY LEADS WORLD ON PACKING
MEAL IN POLYETHYLENE

A new technique in fish meal packaging which offers significant economies in space and labour as well as other advantages has now been perfected by the Saldanha Bay Canning Company, working in conjunction with the Fishing Industry Research Institute and a firm of packaging specialists.

Test marketed in four countries with the co-operation of the South African Fish Meal Producers Association, it has been favourably received and has already drawn enquiries from the world's biggest fish meal producing nation, Peru.

Avoids oxydation

What sets the new method apart from those in use all over the world is that the new Saldanha Bay Canning Company pack is made of polyethylene plastic. The standard fish meal container is a hessian bag - which, because of its porosity, allows free contact between its contents and the surrounding air.

With newly produced fish meal, this gives rise to oxydation of the oil content and the consequent temperature rise can lead to spontaneous combustion if the sacks are stacked closely together.

This risk is countered by stacking the new fish meal loosely for a curing period of at least 48 hours - which allows the heat to dissipate safely as it is generated.

When experiments were initiated several years ago it was realised that if the fish meal could be successfully packed in a sealed plastic bag, the oxydising process would be deferred until the bag was subsequently opened in the hands of the customer.

Normally, it would then be mixed in a ration of about 1:14 with other substances, but in any case, since the bags would not normally be opened together then restacked in a concentrated mass, the problem of combustion would not arise.

With the oxydation prevented by the adoption of a sealed and impervious container, the fish meal producer gains some valuable advantages;

- * the storage space previously required for loose stacking while curing is freed for other purposes;

- * the labour for double stacking - once loosely and then densely, is about halved.
- * further storage space is saved because the fish meal is packed in a waterproof bag and can be stacked outside in the rain;
- * another important factor is that the plastic container prevents the characteristic fish meal odour from escaping in transit or in storage - which avoids any possible tainting of other commodities.

In practice, it has been found that the meal can be stored either inside or outside in concentrated stacks of up to 500 tons immediately after production.

The successful experiments and test marketing by the Saldanha Bay Canning Company comes as the culmination of association with the inshore industry over the past four years. Dr. R.J. Nachenius, the Institute's chief research officer, was responsible for directing experiments with a variety of plastic materials using different techniques for bag closure and under a variety of environmental conditions. The first test shipments were marketed from the factories of the Hout Bay Canning Company (1920) Ltd. and the St. Helena Bay Fishing Industries Ltd. and a number of interim reports were issued by F.I.R.I. as the work progressed.

Willem Barendsz project

Saldanha Bay Canning Company decided to experiment with plastic packaging of fish meal because of their interest in the Willem Barendsz factory ship (which will be described in the next issue of S.A. Shipping news and Fishing Industry Review). The possible savings in space and labour were vitally important in a factory ship and tests began with the co-operation of F.I.R.I. at their Saldanha Bay factory last October.

The first experiments were made with plastic bags which were closed after filling by a line of stitches. This system failed because the stitches allowed the air to enter the bag after closure, setting up the unwanted oxydation.

The next method of closure was by heat sealing, in which the lips of the bag are welded together by the application of heat and pressure. This technique works well with many products but was found to be unsuitable for fish meal because of the characteristic dust which is given off

by the meal and which prevented a perfect seal from being formed.

The answer to the sealing problem was found through a series of tests in conjunction with Van Leer Packaging Pty. Ltd. with valve filled bags. The valve entry system which was eventually adopted - and which has been proved successful under production conditions - is an adaptation of a simple flap mechanism which has been used for other purposes for several years.

The bag is filled by machine via a thin plastic tube of about three inches diameter which is attached to the top of the bag, a little below the upper edge which is heat sealed during manufacture. When full, the entry tube is flattened and folded back beneath an attached flap in a manner similar to the "tuck under" technique used with some envelopes. The bag is then inverted, so that the weight of the fish meal applies pressure to the underside of the valve and maintains an effective air-tight seal.

A St. Regis filling machine supplied through Amalgamated Packaging Industries was found to be a satisfactory unit for use in conjunction with the valve filler and the machine now installed at Saldanha Bay factory can handle up to 200 100 lb. bags an hour.

Large shipments of plastic-packed fish meal from Saldanha Bay Canning Company have since been marketed through the S.A. Fish Meal Producers Association in the United Kingdom, Japan, Germany and Australia. The plastic bag, complete with valve filler, costs some 5c less than the hessian equivalent and is manufactured from South African materials, whereas the hessian has to be imported from Pakistan. On the other hand, the hessian bags have a certain re-use value which is not available with the plastic container.

On balance, this factor is more than absorbed by the resultant economies and the new system is likely to spread rapidly in the industry.

THE WET DESERTS

President Johnson's program's for anti-pollution and clean streams were junked by the U.S. Senate which replaced them with a much more comprehensive scheme. They also recommended an expenditure of 6 billion dollars toward it.

People in the United States are determined to clean up the water ways that have been polluted and spoilt for fishing and other water activity.

Big Companies are finding that they can easily and economically dispose of wastes without pumping into streams and lakes, and indeed Kaiser Steel, International Harvester and others are finding closed circuit water systems just as satisfactory. Where outflows are essential, solids are being cut by 90%.

Wisconsin Steel has spent \$1,950,000 in support of this proposal in modification of old plant and in redesign for a new plant, to maintain a pure water policy.

In Switzerland, in the face of objections from the public, a 300,000 KW oil burning power station was resited from the banks of the Rhone near Lake Geneva to a nearby mountain top.

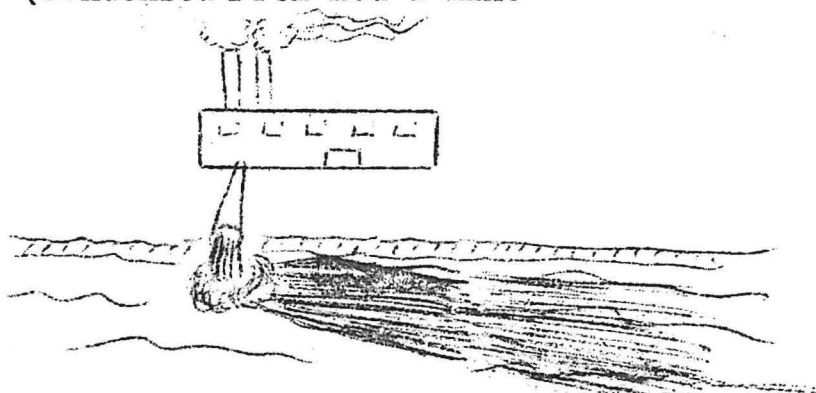
The restricted space of the new site forced the designers to be extremely economical with water and they adopted a closed water system that required to make up only evaporation losses.

Sydney Harbour is described as being, at times, fetid and fish life unattractive. A ferry that ran aground churned up mud from the bottom, the sight and smell of which spoilt the day for the passengers.

Unfortunately we do not have in Australia the sums of money available in America but it is not too late for us to prevent the vast pollution that has occurred in the U.S.A.

(Condensed from Rod & Line

October 1966)



AUSTRALIANS HARVEST BED OF KELP

One of Australia's most unusual industries, the processing of kelp, at Louisville, Tasmania, is expected to be able to meet Australian demand for sodium alginate within a few years. Australia uses about 200 tons of sodium alginate a year for its chemical food, textile, and other industries. It is used as a stabilizer in icecream manufacture.

At Louisville, on the east coast of Tasmania, Alginates (Australia) Pty. Ltd., harvest beds of giant kelp which occur about three feet below the water surface. The beds yield about four tons of wet weed an acre. About 2lb. of alginates are obtained from 200lbs. of wet weed. Harvesting is suspended between mid-September and mid-December as a precautionary measure during crayfish spawning.

The company uses two barges for the harvesting work and these cut about 300 tons of kelp a day.

When the kelp is processed it appears in the form of a cream coloured powder. Kelp is believed to be the tallest plant in the world.

(Fishing News International New York September 1966)

HOVERCRAFT

Trials were carried out at Skegness, in England, recently to establish whether hovercraft would be suitable for use in a fishery protection role.

A SRN-5 hovercraft was used in the trials and, based on these trials, a special hovercraft is being designed. It is expected that a hovercraft could be in service within the next few years. Such a craft would be radar equipped and have a speed of 50-60 knots. It would be an effective means of apprehending foreign ships infringing British territorial waters.

It is expected that four hovercraft each with a crew of 18 would replace six minesweepers which each require a crew of 35.

(Fishing News



October 14, 1966)

RECORDER PICTURES SALMON
TAKING LURE - JUST LIKE TV

Sensitivity of modern echo sounding equipment is taken for granted by most fishermen, but a recent experience of a cook on a West Coast dragger is a dramatic illustration of the remarkable capabilities of some of the better instruments.

A strip of recorder paper was recently shown to Western Fisheries' editor by Ekolite Ltd. president Art Freeman, which told the complete story of the capture of a chinook.

The cook had trailed a line over the bow of the ship as she trawled on the West Coast. The Ekolite's transducer, mounted in the garboard planking picked up the cannonball weight and followed its movements. In the picture here, the various stages of the catch are numbered.

In Number 1, the weight is seen sinking into the water. No. 2 shows the single chinook inspecting the bait, and No. 3 shows the fish taking the hook. At this stage, the skipper in the wheelhouse, who had been watching his recorder, called the cook, and told him he had a fish on his line. No. 4 shows the fish being hauled aboard, and No. 5 shows the line being let out again.

(Western Fisheries

Vancouver

September, 1966)

