DEPARTMENT
AUSTRALIA

MONTHLY SERVICE BULLETIN

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STAFF NOTES

The Director, Mr A.J. Fraser, returned to Perth from the Eastern States on July 6. On August 2, Mr Fraser will go to Bunbury with the Minister for Fisheries, Mr Hutchinson, to discuss with representatives of the Town of Bunbury the location of the new departmental office and boatshed. The Minister will be accompanied by his Private Secretary, Mr J.M. Driscoll, and the Supervising Inspector, Mr J.E. Bramley, will be included in the party.

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Mr Richard Slack-Smith, of the Victorian Department of Fisheries and Wildlife, has been appointed research officer in this Department. Mr Slack-Smith will take up his new duties on September 4.

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Technical Officer R.J. McKay will fly to Learmonth on August 5 to watch the effect on fish of underwater explosions to be carried out by Seismograph Service, Ltd., of London, in connection with the oil research at present being pursued by West Australian Petroleum Pty. Ltd. Mr McKay will also visit the new pearl culture centre which is being established by Mr A.C. Morgan at Giralia in Exmouth Gulf.

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Mr W.K. Cherrington, of head office, resumed duty on July 3 after a fortnight's sick leave.

Miss H. Gilfellon, of head office, resumed duty on July 17, after one week's annual leave.

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Inspector E.I. Forster, who will resume duty on August 1 after annual leave and sick leave, is being transferred to the patrol vessel "Misty Isle" as Skipper. He will be based at Fremantle. His assistant will be Cadet Inspector P.C. Willey.

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Inspector G.D. Houston, who has relinquished command of the "Misty Isle", is being transferred to the Perth District Office.

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Our best wishes are extended to Miss Yvonne K. McKenna, of Head Office, who is leaving the Department on August 11 to return to her home in Sydney.

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Inspector T.B. Baines, of Bunbury, will commence annual leave on August 21. During his absence Inspector Houston will relieve.

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Relieving Inspector G.C. Jeffery will be in charge of the Mandurah district during the absence of Inspector A.V. Green. Mr Green will commence annual leave on August 28

PERSONAL PAR

Dr G.L. Kesteven, Assistant Chief (Fisheries), Division of Fisheries and Oceanography, C.S.I.R.O., called on the Director on July 17 during the course of a brief visit to Perth.

TRAINING SCHOOL POSTPONED

Advice has been received that, due to administrative and technical problems, the opening of the inaugural training school for fisheries officers has been postponed. It was expected that the school would open on September 4, but the actual date of commencement has not yet been determined.

MOVEMENTS OF DEPARTMENTAL VESSELS

The research vessel "Peron", under command of Capt. H.C.W. Piesse and with her full crew, will escort the Harbour and Light Department's new lighter "Ashburton" to Onslow this month. The vessels are expected to sail from Fremantle on August 5 and to arrive at Onslow 8 or 10 days later. During the trip the "Peron" will keep a line on the 87ft. 6in. lighter, which was purchased and reconditioned at a cost of about £24,000 to be stationed at Onslow because of the damage caused to the local jetty by recent cyclones. The "Ashburton" was originally brought from England to be used in connection with the construction of the oil refinery at Kwinana.

ABSENCE FROM DISTRICT OVER WEEKENDS

As there seems to be a doubt in some officers' minds regarding their official responsibilities over weekends and on public holidays, the following is published for information of all concerned.

The first thing that must be appreciated is that inspectors are on call seven days a week and have no set hours of duty. This is necessary, as all officers no doubt realise, to meet the exigencies of the Department. That is the reason why no officer is entitled to leave his district or his headquarters without the sanction of his immediate superior. Inspectors in charge of districts and other officers working directly under the Supervising Inspector must accordingly obtain prior approval from the Supervising Inspector. Officers working under the direct control of a district inspector must not absent themselves from their district or headquarters without the district inspector's approval.

At the same time approval to leave a district will not be withheld without sound reason. In other words, an

officer is entitled to know in advance whether he is required to work during a weekend or on a public holiday, and if he is not required to do so there is little point in tying him down to his district if he desires to leave. If, however, it appears to the officer-in-charge that an officer will be needed over the weekend - as for example in the flush of the crayfish season - he is to be notified to that effect a reasonable time beforehand.

WHALING

A slight improvement in the rate of catch appears to have taken place at the Nor'-West Whaling Company's station at Carnarvon this year. Assistant Inspector E. Barker, reporting from Carnarvon, says that 206 humpbanks and two bryde whales had been taken up to the week ending July 29. Last year the first whale was taken at Carnarvon on June 20 (nine days earlier than the first one this year) and up to July 29, 1960, only 203 humpbacks had been taken.

The bryde whale, the scientific name of which is Balaenoptera brydei, Olsen, belongs to the same group as the Fin-backs or Rorquals. A Whale of this group can be distinguished from other members of the family of baleen whales (which includes the humpback) by its great distensible food pouch which is marked externally, when empty, by a number of parallel grooves and ridges on the throat, and by its smaller head, the straight edge of its lower lip, smaller whalebone plates, and longer and more elongated body with the presence of a dorsal fin. The bryde whale has on its ventral (belly) surface a grey band in front of the umbilicus and has slender flippers with a moderate dorsal fin. Rather surprisingly for a baleen whale, it is described as being voracious and has been seen hunting large schools of small sharks, specimens of which up to 2 ft. in length have been found in their stomachs. They have also been found to contain large penguins, although they seem to feed generally on herring or mackerel up to a foot or so in length. Three of the species were taken in 1958 by the same company. These were reported to have been feeding when killed and their stomachs contained large quantities of small fish - mainly anchovies under two inches in length, but also a few other fish up to about four inches. The Western Australian Museum is anxious to obtain photographs of any further bryde whales found or taken off the coast, as well as samples of its baleen.

While the difference in the sex-ratio of humpbacks caught this season does not appear to be significant, it is of some interest to note that a slightly higher percentage of males has so far been taken.

The Cheyne Beach Whaling Co., which took its first humpback for this season on June 5, completed its quota of 105 on July 15. This was a great improvement in the rate of catch compared with previous years.

CONSERVATION OF SHORT-NECKED TORTOISE

The following is the text of an address given by the Fauna Protection Officer, Mr H.B. Shugg, on July 20, during Tree Week. Negotiations for the purchase of the land are still proceeding.

"Within 25 miles of where we sit there exists a colony of animals which have lived on this coastal plain for thousands of years, perhaps for hundreds of thousands, or even millions. They have come down to us, relatively unchanged, from Jurassic times some 300 million years ago when reptiles dominated the earth. From time immemorial they have dwelt here yet, within the next few years - perhaps even the next few months - they will be extinct, unless we are prepared to make an effort to save them.

The animal I am talking about is the short-necked tortoise, a creature which is known scientifically as Pseudemydura umbrina. Perhaps you have never seen one, or even heard of it, for it is a retiring creature and never makes a fuss. They first became known to science about 1839 when one turned up in the Vienna Natural History Museum. It bore the cryptic label "Nova Hollandia". It probably came from the colony of which I have mentioned, for in those days Western Australia was commonly referred to as New Holland.

After this one had been collected the tortoise retired into obscurity again for more than a century, when a further specimen came to the knowledge of science. It was discovered on exhibition at the Perth Town Hall in the 1953 Wildlife Show!

The finding of this specimen excited more interest among local enthusiasts but no more specimens were collected until the then recently appointed Director of the Western Australian Museum, Dr W.D.L. Ride, persuaded nature advisory teacher Harry Butler to put his hand down a likely looking hole at Bullsbrook and pulled up the third specimen known to science.

This discovery brought its measure of fame to the hunters and inspired some more detailed searching by naturalists. Up to this time almost nothing was known of the animal's life history. No one knew where to look, or when, to find more. A Mr Philip, of the German Embassy, a keen herpetologist, caught another by sinking tins in the ground. Eventually a tortoise fell into one and naturally couldn't get out. A few more were found before an event occurred from which some keen naturalists have not yet recovered. A young lady on the staff of the Museum led a small party to the spot where she and Dr Ride had found the last two specimens and discovered 8 - more than the total collected by all the experts combined! The young lady was Miss Kay Vollprecht (now Mrs H.H. Thies). She said that the tortoises were found lying in shallow weed-ridden water but examination showed that their stomachs contained no vegetable matter. The short-necked tortoise is, apparently, completely carnivorous.

The collection of this relatively large number of tortoises gave Dr Ride the opportunity of learning something of the habits of the creature in captivity. He reported to the advisory committee on fauna conservation that the animal was a living paradox. It was too inefficient a swimmer to be dependent on fish for its staple diet, it had poor night sight, but disliked being abroad by day, and it seemed to hibernate for extremely long periods. Offered a variety of food in captivity, it showed a marked preference for imported fillets, a diet, which it is doubtful it could have obtained in the wild. Its life history is still shrouded in mystery. The best guess is that it hibernates all summer, in the crab holes which form in the peculiar soil structure of the region. These crab holes are comparatively shallow but some of them remain damp right through summer, when they are protected by the shade of sedge and paperbarks. In this relatively cool, moist atmosphere, the metabolic rate is low and the animals live on their fat.

Perhaps they also obtain a little food in the underground ponds before they dry up.

Comes winter, however, rain falls and forms shallow pools all over the swampy region. These small pools suddenly swarm with life - arthropods, including fresh water crustaceans. This is food for our friend. Lying in the pools he feeds at leisure and then, perhaps, moves on to another pool and cleans it out. Whether he does shift, and how many times he shifts, we do not know so we are not able to say how big an area any one tortoise needs for living space. We must find out and will have to carry out research to ensure that habitat, sufficient for his needs, is set aside to give him a reasonable chance of survival.

Unfortunately, time is running out for this ancient animal. The paddock on which it has been found which appears to be the only place in the world where it occurs, is privately owned. When the abode of the tortoise was pinpointed we approached the owners and explained the situation to them. They proved most co-operative and stopped the clearing which was going on in the block but the land has recently been sold and a subdivision is planned. For a long time we have been seeking finance to purchase the swamps and surrounding land from the owners and recently the Government decided to set £1,000 aside on this year's Estimates to meet part of the cost of the resumption and fencing. Unless we can buy back sufficient land the tortoise is doomed. We have opened a conservation fund and already subscriptions have been received from private sources. A most encouraging response has also been received from approaches to Sir Edward Hallstrom and to wildlife conservation authorities in the Eastern States and overseas. A public appeal will be launched to coincide with this year's Wildlife Show and it is to be hoped that West Australians, with their usual generosity, will contribute freely.

We cannot in this day and age allow any species to become extinct without doing our utmost to preserve it. The short-necked tortoise must be one of Australia's oldest, if not its eldest, living animal. It only occurs, as far as we know, in one paddock near Bullsbrook. To preserve it we must buy the land and fence it.

To buy the land we need money. I beg you, when the appeal is launched, to make your contribution to the conservation and protection of this remarkable animal and tell others about it. This is the first appeal of its kind in this State so keep up your reputation and when the campaign commences - give!"

WILD DUCKS ON THE GOLDFIELDS

Mr N.C. Nelson, of 14 Melba Street, Kalgoorlie, the President of the Eastern Goldfields Gun Club and an honorary warden of fauna, has forwarded a particularly interesting note on the occurrence of ducks in the Kalgoorlie district.

In his letter, which was received on July 3, Mr Nelson said that good bags were secured at Coonana, situated 106 miles from Kalgoorlie on the Trans-Australia Railway Line. This area, he said, had not been shot to the best of his knowledge for at least twenty years, but bags of 146, 151 and 80 ducks were taken during three visits of parties of up to 10 shooters. At the end of January, when the first visit was made, there were about 800 ducks on the swamp (known as Coonana Cane Grass) and of these, at least 200 were the rare Speckled or Monkey Duck. This was the first time, Mr Nelson said, that he had seen this species around Kalgoorlie in such large numbers. It was certainly the first time, according to departmental records, that so large a concentration has been reported anywhere. Other shooters reported them in smaller quantities at Rowles Lagoon, north-west of Kalgoorlie and at Lake Emu, north-east of Kalgoorlie.

After giving a most informative report on the lakes of the Goldfields districts which still held water, Mr Nelson concluded by saying that the size of the Coonana Canegrass Swamp was about half a mile long by a quarter of a mile wide. During the visits there, the number of ducks on the swamp varied from 800 to 2,000 or 3,000. The freckled duck, which Mr Nelson thought had bred at the swamp the previous year, was then the most prominent, but they appeared to have left the district at the time of his writing.

FISHING AT WYNDHAM

What is believed to be the first attempt to exploit fishery sources in the Kimberleys may soon get under way. On July 26, professional fishermen's licenses were issued to a group known as Wyndham Fisheries. Its members were Messrs R.W. Leary, C. Bennetts and T. Harris, all of Wyndham. The group is understood to have one contract to supply 20,000 lb. and another to supply 50,000 lb. of fish to merchants in Perth. The group intends to fish only for barramundi in the developmental stages but will work waters 40 miles inland as well as in the false mouths of the rivers near the coast.

BOAT LOSSES

The heavy toll of boats continued to affect the crayfishing industry during July. The 56 ft. freezer boat "Jon Jim" owned by Hunts Canning Co. Pty.Ltd., was the first to be lost. She went aground on a reef at the southern tip of Pelsart Island in Houtman Abrolhos about July 16. Although the skipper, John Roberts, and the crew of three got away safely, it is understood that the vessel has become a total wreck.

On July 18, the Fremantle crayboat "Aloha" ran aground in the North Island anchorage in Houtman Abrolhos. For some time it was feared that she would become a total loss, but we understand that efforts to refloat her were eventually successful.

The 68 ft. freezer boat "Ngardeemar", skippered by Dirk Plug, was also fortunate to avoid serious mishap. She sailed from Fremantle on July 18 after an extensive refit, and had gone only 40 miles when a storm blew up and the skipper decided to turn back and anchor in Thompson Bay, Rottnest. During the overnight blow the "Ngardeemar" lost three anchors, dragging two and buckling a third, and drifted towards the dangerous Transit Reef. Soon after she had broken free from her anchorage, a call for assistance was sent out by her two-way radio and the charter vessel "Wandoo" fortunately was able to secure her and tow her back to Fremantle before serious damage was suffered.

MAGISTRATE'S COMMENT

In the Perth Police Court, on July 18, the presiding magistrate severely criticised the manner in which departmental briefs were prepared. He was reported as saying, "For the last fourteen years, ever since I have been on the bench, we have had trouble with Fisheries Department evidence".

The magistrate appeared to be unaware that for the last ten or more years the Crown Law Department has prepared all our complaints for us and prosecuted in court. This information together with suitable comment has been forwarded by the Minister for Fisheries, Mr Hutchinson, to the Acting Minister for Justice.

ROSS INTERNATIONAL EXPANDS

On July 21, the Minister for Fisheries (Mr Hutchinson), accompanied by the Director and the Supervising Inspector, attended the opening of the new administration block of Ross International Fisheries in Cleaver Street, West Perth. Since completing its take-over negotiations last year the Company has rapidly expanded its activities in this State. It has established its own airstrips at Jurien Bay, Snag Island and Green Head to speed up the transport of the catch from the one hundred boats which it claims are working for it. The Company has also established a crayfish processing plant and small village at Jurien Bay, and has used radio extensively to overcome the peaks and lags at its processing centres. The Company also imports frozen fillets and other foodstuffs from overseas and distributes them with Western Australian and Eastern States brands throughout the State. It also distributes packaged fish processed by Planet Fisheries at Shark Bay.

GOOD SNAPPER HAUL REPORTED

Early in July, the skipper of "Our Lady of Fatima", Sam Sousa, reported that the snapper season this year was one of the best ever. This big Fremantle freezer boat began unloading 48,000 lbs. of snapper at Geraldton on July 4, bringing her total catch for the season to that date to 96,000 lbs. Contrary to other reports that snapper could only be taken on

handlines this season, Mr Sousa said that he had caught nearly all his fish with traps and on the few occasions when handlines were resorted to, the haul was only moderate.

FEWER BANDED PETRELS

Although there were many said to be in our waters, we have received very little information on the recovery of banded giant petrels this year. Normally by this time Fauna Warden Bowler's rescue service would have been working overtime, but to-date he has not had to handle a single bird. Dr D.L. Serventy, of the Wildlife Survey Section, C.S.I.R.O., has had two bands forwarded to him, the details of the recovery of which he has forwarded to the U.S. Fish and Wildlife Service, Washington, U.S.A.

All officers are requested to advise fishermen not to remove the band from a living bird. The number and other details should be carefully noted and the bird released with the band intact. The petrels are being banded in the Antarctic, south of South America, and they have only completed a section of their migratory flight by the time they arrive here. The band should be left on the bird so that it can complete its fact-finding mission. Almost all the petrels recovered here are first-year birds and the banding authorities want to establish whether they return to the nesting site after completing their circumpolar flight.

TUNA SURVEY

The "Estelle Star", an 85 ft. vessel with a speed of 10 knots and refrigeration space for 42 tons of fish, has been chartered by the Commonwealth Government to survey the commercial potential of tuna fishing off the south coast. Advice to this effect has been received from Mr C.G. Setter, Director, Fisheries Division, Department of Primary Industry, Canberra. Mr Setter said that a tender submitted by Mr Owen Allan and partners, operating under the name of Australian Tuna Fisheries, has been accepted, and it was expected that the vessel would sail from Port Lincoln, South Australia, on August 2 and arrive at Albany about August 10.

The "Estelle Star" is skippered by Mr Ken Tidswell, an Englishman who has been fishing in Australia for ten years. She was converted to tuna fishing about two years ago and has taken approximately one-fifth of the total Australian production each year. In the 1960/61 season she caught 870 tons of tuna. We are advised that the vessel has accommodation for one officer from C.S.I.R.O. and one from the Fisheries Division, Department of Primary Industry. It is expected that, as on the crayfish survey, this Department will have one of its officers on board in place of the Commonwealth officer at such times as may be mutually arranged.

The survey is being financed from the Fisheries Development Trust Account, which was established by the Commonwealth Government in 1956 with the proceeds of the sale of the Australian Whaling Commission's station at Carnarvon. Moneys from this Fund financed the crayfish survey in southern waters.

ADVISORY COMMITTEE MEMBERS RE-APPOINTED

The Minister for Fisheries last month re-appointed to the Fishermen's Advisory Committee all the members whose terms of office recently expired. They are -

Mr Roland C. Smith, of Perth, representing persons who are not commercially engaged in fishing or the fishing industry;

Mr William Matthei, of Yunderup, representing fishermen who are commercially engaged in fishing in the estuaries and on beaches; and

Mr Gaetano Travia, of Geraldton, representing fishermen who are commercially engaged in the fishing of crayfish.

The other member of the Committee - whose term of office has some time to run - is Mr N.H. Wright, of Busselton.

On the recommendation of the Minister, the Governor-in-Council has re-appointed all the retiring members

of the Fauna Protection Advisory Committee. They are Dr D.L. Serventy, Mr L. Glauert, and Mr J.B. Higham. The Minister also re-appointed the retiring deputy members, Dr A.R. Main for Dr Serventy; Dr W.D.L. Ride for Mr Glauert; and Mr A.H. Robinson for Mr Higham.

We congratulate all members and their deputies on their re-appointment.

The Director, Mr A.J. Fraser, is ex officio chairman of both committees, while Mr H.B. Shugg, Fauna Protection Officer, is, by appointment, the secretary of each.

CRAYFISH PRODUCTION

On pages 110 & 111, tables of crayfish production in the Fremantle and Abrolhos areas are published for general information. It will be seen that the progressive catch of crayfish at the Abrolhos in 1961 continues to be greater than last year.

It is regretted that up-to-date production figures for the Fremantle district cannot be compiled as many returns are still outstanding.

FREMANTLE CO-OP AT JURIEN BAY

The tendency of the crayfish industry to shift northward from Fremantle, and the provision of facilities at Jurien Bay, are the main reasons why the Fremantle Fishermen's Co-operative Society Ltd. has decided to build a processing works at that centre.

This is revealed in a report issued by the Society summarising past operations and future needs, as well as the reasons why it has decided to establish a shore-based plant in preference to other alternatives. It believes that transport from catcher boats to the factory by road offers opportunities for more continuous deliveries while the family-life and social needs of fishermen could be better served by the establishment of a shore-based plant. The Society is convinced, says the report, that the initial production costs of a shore factory would be less than those of a mother ship, and would

offer economic advantages in lower maintenance and depreciation charges which could become particularly important should prices on the American market decline.

Accommodation, equipment, power and light will be available for employees at the station, together with a recreation unit and catering facilities to cope with the needs of twenty men. Gas cooking will be installed and foodstuffs and perishables will be held in separate dry and refrigerated stores.

Modern refrigeration will be installed, with all machinery to be electrically driven, and each of the four snap-freezers will hard freeze over one ton of crayfish tails in six hours. The report says that the Society's plant at Jurien Bay will be the first major usage in W.A. of the insulation Poly-Eurythane, or "Aquafoam" This is said to be the most efficient commercial insulant known, being fire retardent, solvent resistent, inert, self-adhering, and easily applied. The cool rooms will cover an area of 1,350 sq.ft. and provide storage for 3,000 boxes of crayfish tails, 400 bags of bait and 5 tons of food stores. The snap-freezing section will accommodate 400 boxes of crayfish tails. Light and power requirements will be met by the provision of a diesel electric powerhouse capable of supplying 200 k.w. continuously, and having a reserve of 50 k.w. for future expansion. The Society also intends to maintain a direct radio on a regular schedule between its engineer at Jurien Bay and the General Manager in Fremantle.

VISIT TO BROKE INLET

Senior Inspector J.E. Munro reports that, with Inspector T.B. Baines, of Bunbury, he paid a visit to Broke Inlet for a few days from July 25. The inspectors left the main road at Crystal Springs and arrived at the fishermen's camp on the south shore, about 2½ miles from the bar, after about 1½ hours' travel. The track was heavy and rough but presented no problem to a four-wheel-drive vehicle. On the other hand, the track into the settlement via Chesapeake Road was impassable.

Just prior to their visit the inlet had broken open to the sea through a channel 60 to 70 yards wide and seemingly of a good depth. The bar had opened near the cliff on the western side. Mr Munro says that a large volume

of water was running out and, according to a local fisherman, the level of the inlet had dropped between 5 and 9 inches since the opening two days before. On inspection of the upper waters, it was found that the incoming tide had carried green sea-water about one mile upwards from the bar and netting was unproductive. One net, set in shallow slack water in the channel, caught only two yellow-eye mullet. Other nets produced from 50 to 60 lb. of fish only. Most of this was yellow-eye mullet. Other fish observed were sea mullet, tommy ruff, King George whiting and anchovies. A number of undersize black bream between $8\frac{1}{2}$ and 9 inches were seen, and one lamprey. Only a few birds were noticed, but included in these were three crested grebes which Mr Munro said were flying just above the water.

As the inlet closes to netting 7 days after the bar breaks, the closure this year became operative from July 30.

FISHERIES MINISTERS' CONFERENCE

A conference of the Ministers of Fisheries of all States will be held in Canberra on Friday, September 1. Also present will be the Commonwealth Minister for Primary Industry (Mr Adermann), who has convened the conference. Invitations have as well been extended to the Minister for Territories and the Minister administering C.S.I.R.O.

This meeting, which was strongly recommended by the departmental heads at the recent Commonwealth-States fisheries officers conference, will be a milestone in the history of fisheries throughout the whole of Australia.

Two or three days before the meeting the chief officers of the States will assemble in Canberra and meet with the Commonwealth Director of Fisheries and the Assistant Chief (Fisheries) of the Division of Fisheries and Oceanography, C.S.I.R.O. It will be the function of the officers to go very carefully through the provisional agenda, and to process the subjects to be discussed at the meeting of Ministers.

Perhaps the most important item for discussion will be the proposal to establish an Australian Fisheries Council, to conform very largely with the pattern set by the Australian Agricultural Council. The latter has done much for the development of agriculture in all States, and for the marketing of agricultural products overseas. It is hoped that the same sort of assistance will be possible for the fishing industry if a similar overall high level policy-making body can be set up.

The Director will leave for Canberra on August 27. Mr Hutchinson will not leave until two or three days later.

ABROLHOS CRAYFISHERY

AREA	May, 1960			May 1961		
	No. of men	Total Catch	Catch per man	No. of men	Total Catch	Catch per man
		lb.	lb.		lb.	lb.
North Island	49	124,826	2,547	69	196,709	2,851
Wallabi Group	66	155,772	2,360	74	206,364	2,787
Easter Group	74	161,892	2,187	74	194,739	2,631
Pelsart Group	52	130,789	2,515	56	131,562	2,349
TOTAL	241	573,279	2,379	273	729,374	2,672

Progressive Totals, March-May

		Season opened
1957	2,390,157	March 15
1958	2,677,048	" "
1959	2,931,643	" "
1960	2,980,057	March 1
1961	3,389,849	" "

FREMANTLE CRAYFISHERY

	1959-60				1960-61			
MONTH	No. of men	Total Catch	Catch per man	Total No. of pots	No. of men	Total Catch	Catch per man	Total No. of pots
		lb.	lb.			lb.	lb.	
November	560	437,934	782	17,267	548	471,152	859	24,372
December	951	4,167,464	4,381	30,583	794	2,523,574	3,317	41,169
January	683	1,860,844	2,724	25,711	745	1,333,473	1,789	31,470
February	614	1,333,557	2,172	20,761	704	1,157,140	1,643	26,885
March	685	1,464,781	2,138	23,183	689	1,087,720	1,579	26,583
		9,264,580				6,573,059		

N.B. These figures cover Blocks 26 - 39 inclusive.

NATIONAL HEART CAMPAIGN

The following note received from Mr R.J. Bond, Public Service Commissioner, Chairman of the Public Service Group of the Industries and Commerce Division of the recent National Heart Campaign, is published for the information of those officers who contributed to the Appeal -

"It is with a great deal of pleasure that I am able to advise you that the appeal for funds in Government Departments, Instrumentalities, Institutions and Metropolitan Shire Councils in this State has been very successfully concluded.

"You will be interested to know that the total collections amounted to £13,000, comprising:-

Commonwealth Departments	£2,570
State Departments	£7,128
State Instrumentalities etc.	£3,302
	£13,000

"The campaign was equally successful in all branches of government, with an average donation of 6/- per head throughout.

"I believe that we can derive a great deal of satisfaction from this splendid effort, and I would like you personally to accept my sincerest thanks for your whole-hearted support, and at the same time convey to all staff my very deep appreciation of their generous response."

CLEARING HOUSE

Effects of a Quota System in Fishery Regulation

A fishery may be regulated by the imposition of closed areas, of closed seasons and quotas, of restrictions on gear and by limiting entry to fishermen by means of tax measures, progressive rates, licenses and ground allocation. This article discusses the economic effects of closed seasons and quotas.

The leading case of regulation by quotas is the administration of the halibut convention on the north-east Pacific coast. This has managed to make rules which are agreeable to the fishing industries of two competing nations and their governments and has presided over and probably caused the restoration of a sadly depleted fishery.

Though the extent of this has been challenged by some writers, many biologists seem convinced there was a relationship between regulation and recovery.

Now the imposition of a quota or a closed season limits the time a fisherman may earn a living, driving him to fish maximally as long as the fishing is good - a limit on any extensive margin always leads to intensification.

As soon as the quota or season is opened, he rushes to sea with as much equipment as he can; his motive is to forestall his rivals by taking as much of the catch as he can.

Three consequences follow. In examining these it is important to avoid confusing the increased profitability of the fishery, resulting from the success of the limitation on pressure, with the increased intensity of fishing, a behaviour reaction of the fisherman to the quota system.

The first effect is that on vessels and other costs as sea. As the increased profitability becomes apparent, it will pay fishermen to renew equipment, even at higher costs.

In any fishery there is naturally an optimum size and speed of vessel and the advantages of lowering the expenses of merely travelling must be set against

the higher costs of faster and more capacious vessels and the deterioration of catch quality in storage on vessels. This optimum becomes biased by the setting of a small quota.

Since the quota will eventually be set equal to the desired steady yield, and so less than the stock, it will also be less than the potential catch in a year if there were no quota.

Therefore, speed and capacity are put at a premium and the method of taking a given catch becomes more costly (less efficient) than it need be.

This intensification, year after year, emphasised by the profitability, leads to a shortening of the season. Vessels can be used for only a few months. They must either be laid up for the rest of the year or put into other fisheries.

But there is no inherent value in this doubling-up, it is a consequence of the shortened season. Each fishery could have its own specialised vessels and crews, were it not for the intensification.

The second consequence is that on storage and other marketing costs. Fisheries are nearly always seasonal, for some fish migrate, others will not respond to certain catching methods at certain seasons, some are protected by badweather, ice, or season slumps in the market.

But these interruptions induce the construction of storage facilities to take advantage of higher prices during short periods. Alternatively, if sold at a fixed price, it must be available throughout the year to reap the benefits of promotional expenditure.

If a fishery is badly depleted, the institution of a quota system will make it possible to have larger catches (after a time) than the market has had to dispose of for some years.

If the catch on the market is at all variable or seasonal, it may then be necessary to increase the storage capacity of the ports. This result, from the biological success of the quota, is analagous to a profitability effect and should not be confused with the results of intensification.

For, even with a given catch, the shortening of the season will necessitate (and create profitable incentive for) investment in storage. The cost of this must be entered as a disadvantage and cost of the quota system.

The same applies to other methods than freezing in dealing with a glut followed by a shortage - the product may be canned, salted, smoked or otherwise preserved. It may be sold immediately, to avoid the costs of storage, into less profitable uses, such as pet food or meal and oil.

The loss on this quick disposal is part of the total cost of the shortened season, in addition to the cost of storage facilities.

Third result from such regulation is the effect of geographical extension and ports. Fishing fleets are constantly experimenting; the latest developments of the factory or mother ship permits a fleet to dispense altogether with the ports in the traditional sense and travel to remote regions.

The shorter the season at sea, for whatever the reason, the greater the desire of a fleet to land its catch at near-by ports rather than carry it to lower-cost ports. This, of course, is inefficiency.

This intensification is distinguishable from a profit effect. There is no reason why new entrants should favour ports different from those traditionally used, unless there is an autonomous change in technique or market.

The previous port structure cannot be easily regained by a scrapping of the quota system, because the heavy costs of storage may make it unprofitable to build new facilities at the original ports again. Its results, therefore, linger after the system is removed.

If the geography of the fishery and its coastal limits makes it impossible to establish new ports, there are two others ways an industry can accommodate itself to a shorter season. One is to accept the extra costs of collecting methods such as packers, which relieve the catching vessels from returning to port. The second is

to shorten the trips, abandoning the more remote grounds.

Another way of regarding these three types of cost of the quota, or closed season, method is to say they are equal to the extra costs which could come to any round-the-calendar industry faced with a new element of seasonability.

What at first seems a cost may become built into the whole economic system. A fishery may return a greater yield after it has been harvested on quotas for a few years. As long as there is inventiveness and free entry, any increase in profitability will eventually be dissipated among an increasing number of fishermen.

If statistics show that fishermen now have lower incomes per head than prevailed when there were fewer fishermen, may we blame the decline on the failure of the quota system to restrict entry? While we might be justified if all labour were of the same quality, we cannot be so certain in actual regions where fishermen may have many types of alternative occupations, or none at all.

The short season and low incomes may drive away men with high alternative incomes, but hold and make room for men with lower alternative incomes, those with seasonal jobs elsewhere, or incomes from property or transfer payments.

When such men composed the fishery labour force, society would not gain by limiting entry and lengthening the season to "free the labour for other occupations." To offset any gain in internal efficiency, there would be an external loss since the alternative social marginal product of the redundant men would be lower than in the fishery.

When such situations exist, it is possibly better to apparently "mis-manage" the fishery to make some productive employment for an otherwise unemployable force, than to make it "efficient" and draw versatile men back from other jobs.

By the same token, the evidence adduced that such fisheries use old vessels may be evidence that the fishery was once mis-managed, but it is not evidence the situation ought to be reversed.

The use of old vessels indicates new capital is not being used, and so is not being misallocated.

To justify another system, after a fishery has been mis-managed for years, it must be shown that the extra value of fish caught would counter-balance the extra cost of drawing men and capital from other industries, instead of using the free resources of unadaptable men and vessels.

(The Fishing News London June 23, 1961)

Growth in Freezing

A characteristic development in some of the world's most advanced fishing industries during the past 15 or so years has been the increase in the output and in the variety of quick frozen fish packs. In some of these fisheries - those of the United States, Japan, the Soviet Union and Britain are good examples - the quantity of fish sent to the freezing plants has increased by several thousands of tons over the past few years. As standards of living have improved so the consumer has become more discriminating and has turned increasingly to the frozen fish fillet, fish sticks or other similar products - fresh, tasty and often attractively presented in ready-to-serve packs. This consumer trend is perhaps most marked in Western Europe and in North America, and in countries such as Sweden sales of frozen fish have doubled and trebled in the past five years.

In South and South West Africa the rock lobster industry was the first to open a market for frozen fish with its valuable exports of rock lobster tails to the United States.

The growth of a local market is shown by the expansion during the past ten years of the fish freezing venture started by Irvin and Johnson Fish Products (Pty.) Ltd. In the early 1950's, reports our associate journal "Food Industries of South Africa", which describes the Irvin and Johnson freezing factories in its May issue, the company started freezing in its Maitland factory as a sideline to its fish smoking and canning activities. The demand

for frozen fillets and fish sticks rapidly outgrew the capacity of the factory and in June 1956 the premises of a factory in Woodstock were taken over. Within two years fish stick production was moved into another factory alongside and in 1959 a third factory was erected to prepare frozen blocks for fish sticks. These factories, together with the original freezing department at Maitland, have achieved an increase in intake from five tons of white fish a day in 1956 to 100 tons to-day. From 50 workers in 1956 the number has grown to 700.

As in the United States, fish freezing has helped stimulate the demand for and production of many other frozen foods. But the Irvin and Johnson factories remain the largest and most impressively equipped plants in Southern Africa's frozen foods industry. Packs of frozen fillets, fish sticks, fish portions and other lines are prepared to the exacting voluntary requirements of the South African Bureau of Standards which cover every aspect of the production process from the quality of the raw material (brought in straight from the trawlers as they discharge in Table Bay docks) to storing before despatch to wholesale and retail outlets throughout Southern Africa. This emphasis on quality plus attractive packaging and sales promotion has raised quick frozen fish from a novelty item five or six years ago to a favourite dish in a growing number of South African homes.

(South African Shipping News and Fishing Industry Review
Cape Town - June 1961.)

Fishing Rights Extended to Twenty-five Years

Following representations made by the fishing industry of the territory, the South West Africa Administration has agreed to extend license and quota rights for pilchard and rock lobster fishing for a period of 25 years. Previously licenses and quota rights were renewed each year. The pilchard quota - now set at 375,000 tons a year divided evenly among six factories - will not apparently be changed unless scientific advisors to the Administration believe that the condition of the fishery and the fish resource justifies it.

With this concession giving security of tenure to expensive factories, boatowners, who operate under contract to the processing companies, have also asked for some guarantee of their fishing rights. This has taken the form of a plea by the Walvis Bay Boatowners' Association to the S.W.A. Administration for the 25-year licensing to be extended to fishing craft.

Supporting this application, the weekly newspaper "Namib Times" refers to the recent action of a Walvis Bay factory which notified two boatowners that their fishing "sites" would be cancelled from June 1. This, reports the newspaper, has "caused intense indignation and a considerable amount of uncertainty among all boatowners.

"It can hardly be considered fair that a boatowner, who has to go to considerable expense to acquire and equip a fishing vessel, should within a matter of 30 days find himself without a site. Of course legally the factory has every right to take this action if it wishes.....But the boatowners as a whole should have some protection."

The suggestion is made that boats should be licensed by the Administration for a 25-year period which would mean transferring control of "sites" for boatowners from the factories to the Administration.

(South African Shipping News and Fishing Industry Review
Cape Town - June, 1961.)

Anti-Corrosive Changes Rust to Magnetite

An anti-corrosive paint which has a special application for ships is soon to be manufactured in South Africa.

Official reports conducted at material-testing laboratories in Europe and America support the claim that this paint transforms rust, where it occurs, to non-rusting magnetite.

The French Government has made the application of "Corroless" compulsory on any dock fittings, or lighthouses, which are subject to the corrosive effects of salt water and weathering.

Reports of practical tests on various ships show that the application of the system is very successful. In one case, the hull of a dry cargo-vessel had 200 sq.ft. coated with "Corroless" in the area abaft the bows in the bend of the hull where a great deal of strain, due to panting and pounding, is experienced. At time of inspection of the hull, only the area which had been treated with "Corroless" remained free of corrosion, thus showing that Corroless had prevented corrosion which otherwise would have taken place.

In the case of mechanical damage to the protective coating Corroless and non-rusting magnetite surface successfully checked all diffusion of external moisture.

"Corroless" is a two-coat system applicable to rusted or bright surfaces, free from removable rust, scales or foreign matter which may prevent the perfect contact with the sound metal. Therefore, surface preparation by sand blasting is not essential.

The drying time between coats is three hours and the preferred decorative or other top-coats including anti-fouling paint may be used directly, drying time to harden varying with the degree of solvency of the coat used.

(South African Shipping News and Fishing Industry Review
Cape Town - June, 1961.)

Major U.S. Plan for Ocean Research

It is reported in the New York press that the United States Navy is planning to spend more than 900 million dollars on a 10-year accelerated programme to explore the oceans of the world.

The plan, the newspapers say, appeared to have been promoted by intelligence reports that the Soviet Union had been conducting what a member of Congress had described as a "breathtaking" effort in oceanographic research.

The U.S. Navy plan is to measure and map the sea beds, predict ice, currents and other factors affecting the routes of ships, study acoustics, mag-

netics and gravity in the oceans and building new ships for ocean studies.

(The Fishing News London June 2, 1961.)

Surprise at Soviet Fleet off West Coast of S.A.

A fleet of Russian ships is fishing off the west coast of South Africa "following the discovery of a 6,000 square-mile area packed with fish," according to Moscow reports.

The Director of Fisheries for South Africa - recently returned after a conference in Rome - has expressed surprise at the distance, something like 8,000 miles, the ships were coming.

While fishing outside the three-mile limit which was accepted by South Africa, the Russian trawlers were within their rights. But he doubted the profitability of such a venture even though with modern technical advances, the ships could fish and process at sea.

The Division's research ships, Africana II and Sardinops had seen the Russian trawlers. They were bottom trawling for stock, though they could also be mid-water trawling.

There is a close season of three months on maasbanker and mackerel and five months for pilchards; there are limitations on the number and capacity of boats fishing for these types of fish; the number of fishmeal factories and canneries and their processing capacity is limited.

(The Fishing News London June 9, 1961.)

It's Here - An Autofisher

by John Burgess

It had to come, I suppose, in this mechanical minded age - a machine that will do your hand-lining for you. And it's here, a contrivance called the Autofisher recently invented in Norway.

It looks rather like a small echo sounder with a couple of reels attached to one side of it and is

claimed to do the same job as a man with a hand reel. It lowers a hook and sinker to whatever depth you want up to 170 fathoms and then begins to jig. When a fish is hooked it reels the line in until the fish breaks the surfaces. Then it stops, with the line held firmly, to enable you to take the fish off the hook.

When you've re-baited the hook, you press a release switch and the line runs out again to whatever depth you set on the machine and is automatically jigged until another fish is hooked.

You can set the instrument to jig from anything from 25 to 250 centimetres and to heave or render the line at any given weight between 1 and 25 kilos.

You can use the Autofisher for trolling and for hauling in set lines as well as for handlining. There are two models. One measures 30 x 55 x 35 cm., weighs about 60 kilos and is entirely electrically operated. The other is designed to be belt or chain driven and is suitable for use in small boats. It measures 30 x 35 x 30 cm. and weighs about 25 kilos. The price of the former is N.kr. 4,500 and the smaller one costs in the vicinity of N.kr 3,500.

The manufacturers say that one man can operate three to five Autofishers at a time and that they have already been used successfully for catching cod and coalfish.

(The Fishing News London June 16, 1961.)

Porpoises Reveal Underwater Secrets

Scientists are becoming interested in porpoises. Until recently regarded as a fish with a sense of humor devoting its life to play, the porpoise is now considered to be the most intelligent of underwater inhabitants. A group of scientists as the University of California, Los Angeles and at Marineland, an aquarium near Los Angeles, have been making studies of the porpoise.

It is now known, from their research, that the porpoise has an unusual ability to guide itself through

muddy water as if it had its own sonar system. This fish is especially sensitive to sound and emits high pitched clicking noises and guides himself by the echo. This echo location system is so refined that a porpoise can distinguish between the sound carried by dropping BB shot into water as distinct from sounds caused by sprinkles of water on the surface. The porpoise sends out and receives sound signals in a manner not unlike radar.

The porpoise is also able to swim with much less effort than most fish due to the structure of its skin which is in two layers - an outer layer, a pressure sensitive diaphragm and an inner layer filled with fluid ducts. As the porpoise swims through the water, the outer skin acts as a cushion which reduces the pressures and friction of the water upon the fish itself. It has been discovered that the two layer principal of the porpoise can be applied to a certain type of boats with the result that speed can be increased by 50% without added power from the engines.

Just as the study of birds continues to reveal new secrets of flying - valuable for aviation, physicists and biologists are learning much about underwater navigation from the porpoise.

(Modern Government New York May/June, 1961)

Search for Wild Camels

Proposed field research by a group of science undergraduates at the University of New England could help to explain how animals resist drought.

The group - the University of New England Exploration Society - is planning to send an expedition to the region north of Ayers Rock to make field tests on animals and soil.

One of its main objects is to study the drought resistance of camels, hundreds of which roam wild in the area. It is suspected, following laboratory experiments by Professor Evans of the University's Physiology Department, that the camels' adaptability may be associated with peculiarities in their red blood cells.

From field tests the society hopes to prove that some sheep which are known to have similar blood characteristics could be developed into a drought-resistant strain.

Samples of the camel blood will be examined in a compact mobile field laboratory, which has its own power supply and a complete range of scientific equipment necessary for the job.

Another aim of the expedition will be to study changes which have occurred in the climate of Central Australia over the past few thousand years. It is known that these changes have had a profound effect on the distribution and nature of grazing plants and other vegetation in the Ayer's Rock region.

Soils and plants will be classified, studied and collected for future work in the University.

The expedition still needs three cross-country vehicles. It has already been given financial support from within the University and the Science and Industry Endowment Fund which is administered by the Executive of C.S.I.R.O.

Its leader is Mr. Dennis Madden, a student in the Faculty of Rural Science.

(Coresearch Melbourne August, 1961.

New Raft

A Norwegian firm has just "launched" a new life-saving raft on the market. Called the Floating Igloo, it is made of foam plastic and weighs 150 lb.

On top and bottom of the raft is a canvas tent with the necessary emergency rations, water and flares. Whichever tent strikes the sea will fill with water and act as a stabiliser.

Other equipment will include a radar reflector, but no motor. The raft has been designed by Captain Walter Tangen, of Oslo, and produced by Vestlandske Gummivarefabrikk A/S in Stavanger.

(The Fishing News London June 16, 1961)