FISHERIES DEPARTMENT
WESTERN AUSTRALIA
MONTHLY SERVICE BULLETIN

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STAFF NOTES.

The Director, Mr. A. J. Fraser, will leave Perth on April 1 on a visit to Esperance and nearby waters.

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We extend our best wishes to Miss Y. L. Lauffer, of Head Office, who has tendered her resignation from the service. On April 30 she will be married to Mr. E. Scott, of Doodlakine.

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Officers who resumed duty during the month after annual and special leave include the Research Officer, Mr. B. K. Bowen, and Mr. J. McK. Mitchell, of Head Office.

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Inspector A. V. Green, of Mandurah, and the Chief Clerk, Mr. B. R. Saville, will resume duty after long service leave on April 4 and 11, respectively.

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Cadet Inspectors R. G. Emery and J. T. Kelly commenced annual leave on March 21.

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Senior Inspector J. E. Munro began three weeks' annual leave on March 7, but was recalled to duty on four separate occasions to attend Court as a witness in departmental prosecutions. He will resume duty on April 4.

Mr. C. E. Scobie, who was employed for a short period as a casual hand on the research vessel "Peron", ceased work on March 30.

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Supervising Inspector, Mr. J. E. Bramley, visited the Geraldton district from March 21 to 29. During that period he went on board the "Lancelin" which carried out patrols in the Abrolhos area.

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Assistant Inspector D. H. Smith will complete his period of duty at Lancelin early this month. He is expected to return to Perth on April 8. Later he will act as Whaling Inspector at Carnarvon for the humpback season which commences on May 1.

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Technical Officer J. S. Simpson, who is at present stationed on the "Bluefin", is expected to return to the metropolitan area on April 2. This vessel's contract to explore crayfish grounds off the southwest coast has been terminated. The vessel will commence crayfishing at Jurien Bay almost immediately and will operate as a private fishing vessel.

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The Fleet Maintenance Officer, Mr. A. J. Bateman, spent some days in Shark Bay during the month and carried out maintenance work on the p.v. "Garbo". He will return to Shark Bay on April 11 to complete certain outstanding work on the vessel.

MOVEMENTS OF DEPARTMENTAL VESSELS.

R. v. "Lancelin", commanded by Inspector C. J. Seabrook with Assistant Inspector D. P. Gordon as crew member, has been used as a patrol vessel in the Geraldton/Abrolhos waters. She will return to Fremantle this month for slipping and overhaul.

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The p. v. "Kooruldhoo", skippered by Inspector G. D. Houston with Cadet Inspector G. J. Hanley as crew member, will sail from Fremantle on April 4. She will be stationed permanently at Geraldton.

The r.v. "Peron", under the command of Captain H. C. W. Piesse, will leave Fremantle for the waters of Geographe Bay on a four-day shake-down cruise on April 4. Regular crew members, Mr. L. C. Stock, engineer, Mr. D. Wright, mate, with Technical Officer R. J. McKay will be on board and they will be accompanied by Inspector A. K. Melsom and Mr. C. R. C. Haynes, mate. Mr. A. F. McKimmie, Engineer and Ship Surveyor of the Harbour and Light Department, will also be on board in his official capacity.

PERSONAL PARS.

Our sincere sympathy is extended to Mr. C. R. C. Haynes, whose mother passed away on March 1: also to Senior Inspector A. K. Melsom, whose mother died on March 30.

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Mr. H. K. Siddiqui arrived in Perth on March 28. Mr. Siddiqui is employed by the Central Fisheries Department, Karachi, Pakistan, as an Inspector (Shellfisheries), and is that country's nominee under the International Co-operation Administration. Under the guidance of the Research Officer, Mr. B. K. Bowen, Mr. Siddiqui will study fish marketing in the metropolitan area and Geraldton, and will also see something of our methods of collecting fisheries statistics. He will leave Perth for Adelaide on April 18.

JAPANESE SEARCH FOR TUNA.

The Japanese Government Fisheries research vessel "Shoyo Maru" berthed at Fremantle on March 8 after investigating tuna occurrences in three oceans, the Atlantic, Pacific and Southern. Leaving Tokyo early in October, 1959, "Shoyo Maru" first visited the Caribbean area and the North Atlantic, thence Samoa and Sydney, and finally carried out research in waters south of the Great Australian Bight. She was joined in Sydney by Mr. J. F. Robins, a research officer of the Division of Fisheries and Oceanography, C.S.I.R.O.

On arrival in Fremantle, it was learned that Shoyo Maru's "test fishing" had not disclosed any good commercial fishing grounds between Sydney and Fremantle. Twelve long-lining stations had been worked in the Bight, catches ranging from two fish to 40. The fish caught had included three species of tuna, southern bluefin, albacore and big-eye.

While in port Mr. Robins, who later flew back to Sydney, called on the Director and met other departmental officers. He was accompanied by Messrs. Masayasu Kato, chief investigator, and Kimio Kawasaki and A. Suda, technical officials, from the "Shoyo Maru".

A picture of the vessel, which is about 167 ft. in length and of 603 gross tons, and powered with a 1200 h.p. motor, appears elsewhere in this issue.

MARGINAL INCREASES.

As a result of negotiations with the Civil Service Association of W.A., Inc., a review has been made of salary margins. The Public Service Commissioner advised this in Administrative Instruction 135, issued on March 21. The new rates, to apply retrospectively from February 1, will affect all officers over 21 years of age in the classification groups II, IV, V, and VII.

The actual amount of the increases will be -

(a) Assistant Inspectors -

£2	p.a. at	21	or first year rate.
£8	"	22 "	second "
£14	"	23 "	third "
£24	"	24 "	fourth "
£30	"	25 "	fifth "
£36	"	26 "	sixth "

(b) Inspectors Grades 1 and 2.

Grade 2 Inspectors on the minimum salary of G-II-1 will receive a £60 p.a. increase, while those on the maximum will receive £66.

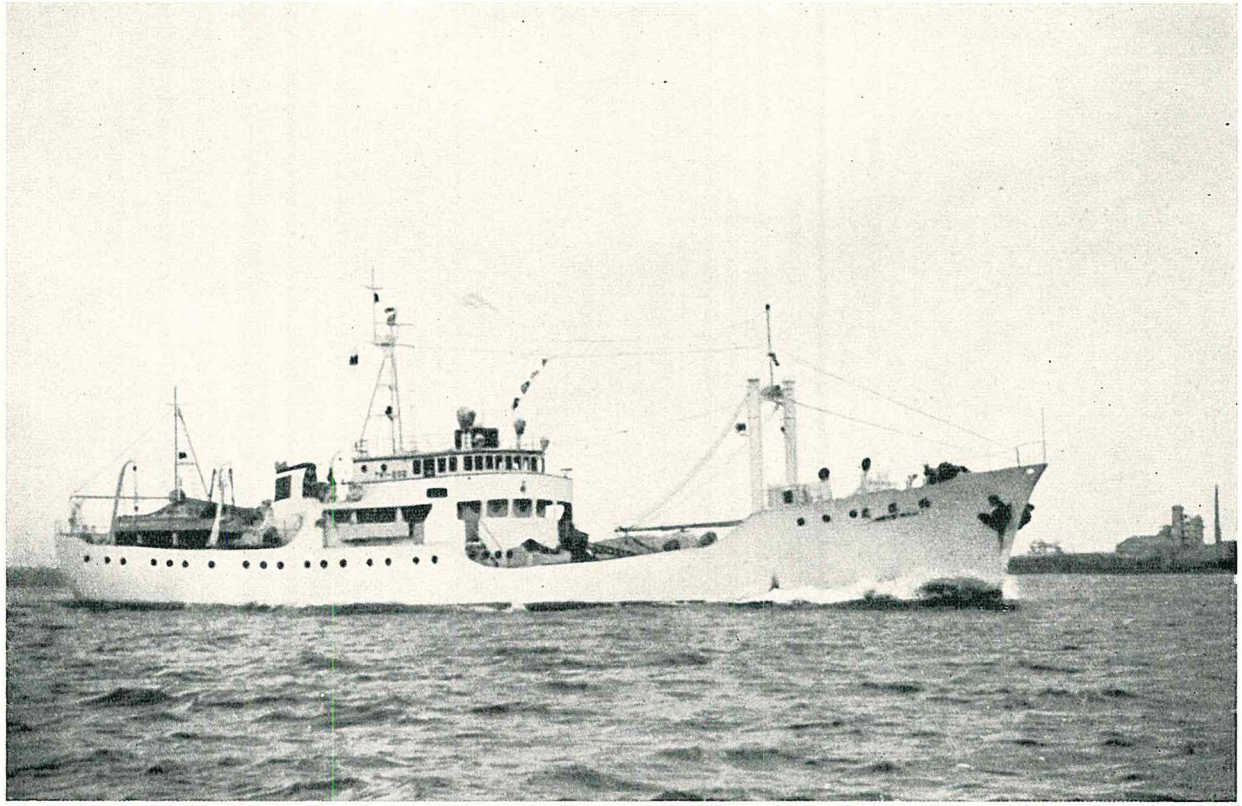
Grade 1 Inspectors whose classification is G-II-2, will receive £72 and £78 p.a. on the minimum and maximum salaries respectively.

Senior Inspectors, and officers on higher classifications, will receive pro-rata increases.

Salary adjustments will be made in the pay period ending April 7.

HARBOUR IMPROVEMENTS.

Work is proceeding apace on the fishing harbour improvements at Fremantle and Geraldton. Tipping of stone to construct the long limestone groyne, designed to enclose 76 acres of water at Fremantle, commenced during the month. The groyne will have a double carriage-way on top.



The "SHOYO MARU"

Research and Inspection Boat, Fisheries Agency,
Ministry of Agriculture and Forestry, Japan.

At Geraldton, dredging is continuing and Inspector Crawford reports that an immense amount of sand has been shifted.

INCREASES IN TRAVELLING AND OTHER ALLOWANCES.

An Administrative Instruction from the Public Service Commissioner, dated March 31, advises that rates payable for the reimbursement of travelling, transfer and relieving expenses have been increased retrospectively from January 1, 1960.

Travelling allowance has been increased from 43/- to 45/- a day, and the rate paid after 14 days in the one place has risen from 40/- a day to 42/- a day. The rate involving the overnight stay at a city hotel has increased from 54/- to 57/6 a day. Rates of reimbursement of transfer and relieving expenses have increased similarly.

When submitting future claims, officers should claim at the new rates, but reimbursement of the retrospective allowances will be arranged by Head Office.

MARRON SEASON TO CLOSE.

Officers are reminded that the open season for the taking of marron will close on April 30.

SOUTHERN CRAYFISH SURVEY TERMINATED.

Following consultations with this Department and the owners of the "Bluefin", the Commonwealth-sponsored survey of possible crayfishing grounds between Cape Leeuwin and the Recherche Archipelago was terminated some months ahead of schedule. Announcing this on March 31, the Minister for Primary Industry, Mr. Adermann, said that the survey was broken off because it was clear that no useful purpose would be served by further expenditure. He explained that the survey had shown that although the southern crayfish (Jasus lalandii) occurred in those waters, they did not do so in sufficient numbers to support a commercial fishery.

ABROLHOS CRAYFISH SEASON OPENS.

A fortnight earlier than usual, on March 1, the Abrolhos crayfishing fleet of almost 250 vessels set sail for their fishing grounds. The weather in March was much cooler than usual and crayfish were reported to have been less plentiful than last year. Whether these two factors were in any way responsible, is not known, but the mortality rate amongst fish landed at Geraldton has certainly been very low, compared with previous years. Production figures will be published as soon as they have come to hand and have been processed.

DEPARTMENTAL PROSECUTIONS.

January 1, to March 31, 1960.

Date.	Defendent.	Court.	Charge.	Result.
		Fisheries Act.		
26.1.60	Martin J. E.	Albany	Netting in closed waters.	Fined £5
"	Southwood C. W.	"	" "	" £5
"	Tapper A. L.	"	" "	" £5
"	Dixon J.	"	" "	" £5
"	Seaman T.	Collie	U/s fish	" £2
15.2.60	Ianello F.	Fremantle	U/s crayfish	" £6
"	Rutigliano D.	"	"	" £5
"	Palmietti G.	"	"	" £2
"	Yama Pty. Ltd. Gtn.	"	"	" £2
14.3.60	Abbott W. G.	"	"	" £2
"	Monkhouse N.	"	Unlicensed boat	" £5
"	Ianello F.	"	U/s crayfish	" £10
28.3.60	Buongiorno A.	"	"	" £10
15.3.60	Johnson E. P.	Geraldton	"	" £10
"	Hancock R.	"	"	" £15
"	Hartog C. D. H.	"	"	" £10
18.1.60	Richardson J. A.	Kalgoorlie	"	" £2
"	Richardson J. A.	"	"	" £2
4.2.60	Stokke E. A.	Perth	"	" £3
"	Patterson D.	"	"	" £3
"	Matich J. A.	"	"	" £5
"	Miragliotta F.	"	"	" £5
24.2.60	Campeotto, V.	"	"	" £15
"	Palfrey E. W.	"	"	" £3
"	Palfrey E. W.	"	"	" £5

Date.	Defendent.	Court.	Charge.	Result.
24.2. 60	Holland N.	Perth	U/s crayfish	Fined £3
"	Kongras A.	"	"	" £4
"	George Spring	"	"	" £5
"	George Spring	"	"	" £20
"	George Spring	"	"	" £5
25.2.60	Bradley R. J.	"	"	" £3
"	Heil H.	"	"	" £3
"	Nollamara Delicatessen	"	"	" £4
"	McCormick	"	"	" £20
"	Barrington E.	"	"	" £3
"	Gittens K.	"	"	" £3
"	Levissianos M. A.	"	"	" £3
"	Starr R. F.	"	"	" £3
"	Barndon R.	"	"	" £3
9.3.60	Waugh G.A.	"	No fisherman's license	" £5
"	Wolfe O.	"	U/s crayfish	" £10
"	Rotondella J.	"	"	" £5
"	Rana S.	"	"	" £5
"	McDonald R.	"	"	" £5
"	Knox R.	"	"	" £5
"	Antonas J.	"	"	" £10
"	Abbott J.	"	No fisherman's license	" £5
"	Higgs R.	"	"	" £5
"	Owens G.	"		" £5
"	Robertson G.	"	"	" £5
"	Denton R.	"	"	" £3

Date.	Defendent.	Court.	Charge.	Result.
		Fauna Protection Act.		
8.3.60	Hunter J. A.	Perth	Keeping protected fauna w/out permit	Fined £5
"	Carulli F.	"	" " "	" £3
17.3.60	Preston W.	Busselton	Shooting duck in closed area	" £5
"	Bailey H.	"	" " "	" £5
"	Brittain G.	"	" " "	" £5

HEAVY BOAT LOSSES.

March, 1960, will be remembered as one of the worst months on record for marine insurance companies. At least six fishing boats were lost and others suffered damage. One newspaper comment suggested that the Government restrictions operating were insufficient to ensure the seaworthiness of craft and that more control should be exercised by the Harbour & Light Department, which is responsible for ensuring that all craft are seaworthy. Most of the boats lost, however, were manned by experienced crews. The general public seems not to realise how dangerous is the Western Australian coast. The boats reported as being lost during the month are as follows:-

L.f.b. "Victory", owned by the Vigilant Trading Company, which sprang a leak and sank within three minutes on March 4. She foundered about eighteen miles offshore of the Wallabi Group in Houtman's Abrolhos on her way there from Geraldton. The crew, Messrs A. Saxon and D. Cooper, only had time to launch their dinghy before the "Victory" went down. After they had sculled it for twelve hours, the dinghy overturned about 400 yards offshore about six miles south of Northhampton. Both men reached the shore safely.

The 25 ft. licensed fishing boat "Nautilus", owned by Mr. Ryle, was crayfishing off Port Gregory on March 14 when an electrical fault stopped the engine. Ryle was reported to have thrown out an anchor and commenced work on the engine. He did not notice the anchor's failure to hold which allowed the boat to drift on a reef where it was smashed by the surf. It is understood that attempts to salvage the "Nautilus", which sank about 400 yards from the shore, will be made. It is believed the vessel was not insured.

The 28 ft. crayboat "Lowana", owned by Mr. J. Willers, was destroyed by an explosion while fishing off the Southern Group of Houtman's Abrolhos. Mr. Willers when interviewed expressed the opinion that a short circuit near the batteries caused a fire which spread quickly and set the fuel tanks alight. He attempted to douse the flames with a chemical extinguisher without success, and then threw buckets of water over the flames. However, the fire burned through the side of the craft and as the flames were nearing the fuel tanks, Willers jumped overboard. When he had swum about fifty yards, the tanks exploded. He was picked up by Mr. C. McAullay who had seen the flames and had raced up in his boat. It is understood that the "Lowana" was insured for £2,000, but was reported to be valued at more than that amount. Uninsured equipment was also destroyed.

Twenty miles out from Murchison River, headed towards Port Gregory, Mr. A. Cherico and his wife were stranded in their fishing boat "Pearl" when a short circuit put the engine out of action. Unable to repair the trouble, they dropped anchor about two miles off shore and for four days were battered by huge seas. They had only a loaf of bread and a bottle of water between them and they also had their dog on board. When the seas abated on the fifth day they lifted the anchor and drifted within 200 yards of the shore. At that point they jumped overboard and with their dog paddling beside them eventually made land. They had to walk overland for some miles to Balline station where they were given food before being taken to Geraldton. Their 18 ft. vessel, valued at £1,000, was said to be insured for only £300 and is believed to have been lost.

Mr. R. Featch, of Geraldton, was believed to have been drowned when the 1.f.b. "Chloe" sank five miles offshore about three miles north of the Greenough River in the Geraldton district. Mr. R. E. Dew, a partner, and his daughter Maureen, together with Mr. Feach's son, Brian, managed to reach shore after nearly two hours in the water. The "Chloe" was returning to port when she was hit by a freak 20 ft. wave. She capsized and the wheelhouse was torn off as she sank.

Mr. A. Pearce, of Geraldton, clung to an empty petrol can for two hours after his 16ft. boat "Helen Marie" was swamped by a breaker near North Island in the Abrolhos. Mr. Pearce said that he went inshore to pull some pots he had pulled dozens of times before, when his boat was struck by a sudden breaker. The wave filled the boat and stopped the engine but, while he was bailing, a further wave sent her to the bottom. He was rescued by another fisherman, Mr. W. Thomson, who was working nearby. Mr. Pearce was eventually taken to Geraldton on the patrol vessel "Lancelin".

"NEW MEXICO'S' TROUBLES.

Bad luck still dogs the l.f.b. "New Mexico", which was launched last September. It may be remembered that the vessel figured in a sea-air search in December after it disappeared from its moorings at Geraldton. It was intercepted off Horrocks Beach, under control of two youths who were subsequently brought to trial. The twin engines were found to have been badly damaged and were only recently repaired at a cost of some thousands of pounds. Early in March, while fishing in the Southern Group of Houtman's Abrolhos, she received further damage during a southerly gale. A heavy mooring line caught in her rudder and pulled it off. A crew member had to leave for Perth to obtain a new rudder. This vessel is valued at £22,000 and is owned by the well-known Basile family, of Geraldton.

The two youths mentioned above were sentenced last month by Court Chairman, Mr. K. A. Philp, S.M., to prison terms. The first, Brian John Meredith - a naval rating of Geraldton, was sentenced to two years' hard labour and the second, Richard Leslie Baugh - apprentice butcher of Mingenew, to eighteen months' imprisonment. In imposing the sentence, Mr. Philp said that the fishing fleet in Geraldton must be protected. He said that the punishment should act as a deterrent to others who might be tempted to steal a fishing boat. Mr. Philp told Meredith and Baugh that had it not been for their age, longer sentences would have been imposed.

BAN ON JAPANESE PEARLERS.

Reports from Canberra at the end of March indicated that the prohibition against Japanese pearlers operating off the Western Australian coast was likely to be continued. Negotiations between the Australian and Japanese Governments are being conducted by diplomatic representatives. Although it appears that the quota Japanese pearlers are allowed to take in northern waters may be increased, they will probably be banned from the waters of the Western Australian Division.

WHALING.

Telegraphic advice has been received from the Fisheries Division of the Department of Primary Industry that the humpback whaling quotas of Western Australian whaling stations have been amended. The Nor'West Whaling Co., of Carnarvon, which in recent years has been allotted a quota of 1,000 humpback units, has had its quota reduced to 750. The Cheynes Beach Whaling Co., at Albany, however, has had its quota increased from 120 to 150 humpback whales. Despite repeated promises that quotas would not be fixed without consultation with the Western Australian Government, the Commonwealth announcement was the first intimation received that the quotas were being reviewed. The grounds

on which the Commonwealth decision was based were not stated, but the inability of the company at Carnarvon to fill its quota in two successive years was probably the main contributing factor. Last year, the Cheynes Beach Whaling Company's quota was twice increased, first to 150 and then to 176 humpback units. Including blue whales, the Company's final catch was the equivalent of 174 humpback units.

Inspector B.A. Carmichael, writing from Albany, recently advised that the latter Company had resumed sperm whaling operations on March 30. He said it was expected that the sperm season would cease temporarily when the humpbacks made their appearance, but would resume after the humpback season had ended. How long the search for sperms continued after that would depend on market price and the availability of these whales. Mr. Carmichael said that the Company would again be operating two catchers, the "Kos VII" and the "Cheynes". They will be skippered, as last year, by Captains C. Stubbs and A. Christiansen respectively.

STATE AND COMMONWEALTH LICENSE FEES.

For the benefit of all concerned, the respective fees levied under the State and Commonwealth Fisheries Acts are recorded hereunder. Attention is specifically directed to the necessity to ascertain the tonnage of vessels over 50 ft. to compute the Commonwealth license fee.

State.		Commonwealth.	
Fishing License	£2. 0. 0.	Fishing License	£0.10. 0.
Boat License - any length, propelled by oars only	£1. 0. 0.	Gear License	Nil.
Boats propelled by motor or sail:		Boat License:	
Less than 25 ft.	£2. 0. 0.	Less than 50 ft.	£0.10. 0.
25 ft to 35 ft.	£5. 0. 0.	Over 50 ft. and under 100 tons	£1. 0. 0.
35 ft to 55 ft.	£7.10. 0.	Exceeding 100 tons	£2. 0. 0.
Exceeding 55 ft.	£15. 0. 0.		
Amateur Fishing License	10. 0.		

Note: Half fee payable after June 30.

JAPANESE TRAWL AUSTRALIAN WATERS.

In July last year, a press report was announced that three Japanese trawlers would operate off the west coast of Australia towards the end of the year. Subsequently, the State Shipping vessel "Koolama" reported a Japanese trawler working in the Point Maud area. Inquiries directed firstly to the Fisheries Division of the Commonwealth Department of Primary Industry, and subsequently through the Australian Embassy in Tokyo, revealed that the Japanese Fisheries Agency had given permission for three Japanese trawlers to operate in certain Australian waters. The area defined by the Agency lay between 110 degrees and 180 degrees 40 minutes east longitude. North of the 20th parallel of south latitude, no operation was permitted within twenty miles of the coast, and none within fifteen miles of the coast south of that parallel. The three vessels and the duration of their licenses were as follows:-

Taiyo Maru	-	August 1, 1959, to February 29, 1960.
Asama Maru	-	August 1, 1959, to November 30, 1959.
Shinano Maru	-	July 20, 1959, to November 30, 1959.

The ships were instructed not to take, and to throw back if accidentally caught, sea slugs or pearl shell, or anything else which could be regarded as a resource of the continental shelf.

SOUTH COAST FISHERY.

Inspector B. A. Carmichael, of Albany, submitted an interesting report of his inspection in February, of the fisheries east to Esperance. At that port, he wrote, fishermen were still running excursions regularly and passengers caught an average of about 20 lb. of fish a trip. As in previous years, Mr. Carmichael said, sweep constituted 90% of all fish caught. Groper and skipjack were also landed in some numbers but only a few odd queen fish and tuna were taken. One fisherman told Mr. Carmichael that leatherjackets abounded in "hundreds of millions". Some odd schools of salmon had been seen offshore and a few had been caught off the beaches.

At Hopetoun, fish were very scarce and only two fishermen were operating. The town itself was nearly deserted. Mr. Carmichael visited the Phillips and Jerdacuttup Rivers where black bream were found to be available in small quantities. Hundreds of thousands of this species were reported to have died in the Jerdacuttup last year, probably as a result of high salinity levels. Inspector Carmichael was advised that Bandy Creek at Esperance broke through to the sea on November 30 last year and a lot of big mullet were seen to leave the creek at the bar. The Oldfield and Young Rivers and Stokes Inlet contained mullet, silver bream, whiting and flathead. Stokes

Inlet, Mr. Carmichael was informed, had not broken through to the sea for some time. The report concluded with a note that the road from Albany to Esperance was in particularly good condition, more than a hundred miles out from Albany being bituminised. The return from Esperance to Albany was accomplished in under seven hours.

INSTRUCTION ON CORRESPONDENCE.

1. Official correspondence becomes a permanent record on files and must be conducted with due decorum. While it is desirable to avoid fusty writing, official records should not contain any personal messages or ill-considered comment. If the context requires that an officer's name be mentioned, it must be prefixed by his appropriate courtesy or official title, not by his Christian or nickname. The use of some slang may not be unseemly, but it must be used judiciously - perhaps to leaven, or to add descriptive force in unusual circumstances.

2. There is no objection to the inclusion of personal notes with official memoranda, or to the use in such notes, of whatever language and phraseology the officer cares, provided they do not exceed the bounds of decency. Correspondence of this nature, however, must not be used officially.

3. The practice of addressing envelopes containing official mail to individual officers at Head Office must cease forthwith. All envelopes must be addressed to the Director. Actual minutes or memoranda may be addressed to the Director or to whatever title the recipient officer is endowed - i.e. Chief Clerk, Supervising Inspector, Fauna Protection Officer, Fleet Maintenance Officer, Statistics Officer and so on, but under no circumstances is the name of the officer to be added. Envelopes containing impersonal correspondence for field staff should be addressed, -

Inspector in Charge, Fisheries Department,	or	Inspector ....., Fisheries Department.

POOR START TO SALMON SEASON.

Salmon were not coming in as fast as they normally did at that time of the year, reported Inspector Carmichael last month. No big schools have been taken compared to previous years, he said, and added that most of the fish had undeveloped gonads. A big percentage of the "run" were small fish, a most unusual experience which was causing fishermen much concern. It appeared to be either a bad season or a particularly late run. Normally the cannery was working overtime at that time and the fish were big and full-roed. Mr. Carmichael estimated that the cannery was down by half on previous production figures.

FAUNA PROTECTION IN AUSTRALIA.

In the "Sydney Morning Herald" of Saturday, March 26, 1960, attention was drawn by a staff correspondent to the perilous position of fauna protection enforcement in Australia. Commenting on an announcement that the field staff of the Fauna Protection Panel of New South Wales was to be increased by 100% (that is, to two officers instead of one) the correspondent said -

> "Naturalists, and all who want to protect native birds and animals from commercial exploitation, regard this announcement as a rather poor joke. They had hoped that after years of urging and pleading the Government and the Public Service Board would have authorised a much bigger increase in the Panel's staff. However, the solitary new appointment is a small step in the right direction".

The appointment of a fourth member to the staff in New South Wales has brought it to parity with that of the fauna section of this Department, which, it might be remembered, was recently increased by the transfer of Inspector N. E. McLaughlan to the position of Fauna Warden.

The Sydney correspondent criticised the understaffing of fauna protection agencies in Australia. He pointed out that they were quite unable to prevent breaches of the conservation laws, to look after fauna reserves and to carry out their many other administrative duties, including education of the public.

Actually, we in Western Australia believe that the all important task of conservation agencies everywhere is to ensure that adequate areas are reserved and maintained. Sufficient habitat must be set aside and kept in its natural condition to ensure that representative portions of our fauna, particularly of primitive species and those which have evolved a high degree of adaptation, continue to exist. Unfortunately, all these agencies find themselves under pressure to expend a disproportionate amount of their effort on protection, which is really a negative approach to conservation. This pressure is brought about by what Dr. W.D.L. Ride, Director of the W.A. Museum, has aptly termed as "sentimental conservationalism". He describes this as "an attitude which visualises with horror the death of a little furry body and does nothing to hinder the certain extinction of the entire species to which this same little body belongs".

It is to be regretted that the Herald's correspondent fell into this train of emotional thought. He saw inordinate value in the Commonwealth Government's ban on the export of fauna and concluded by referring to the past commercial exploitation of koalas which, in fact, ceased over thirty years ago. We need more positive thinking than this if we are to do the job of conservation properly. Unless sensibly and thoughtfully controlled, agricultural and industrial development will cause, far more quickly and far more completely than the mere keeping of fauna by pet-lovers ever could, the annihilation of entire sections of our remarkable natural heritage.

CLEARING HOUSE.

Extraordinary Progress in Peruvian Fisheries: Production Multiplied 30 times in Ten Years.

Anchovy is Most Important Commercial Species.

The millions of sea fowl along the 1,400 miles of Peruvian coast indicate an abundant fish life. The light coloured guano islands with their bird colonies, the barren coast and the overcast sky, with a temperate climate in a zone from three to 19 degrees south of the Equator are consequences of the cool Peruvian current and its upwellings.

Under the influence of the southeast trade winds the surface waters are blown away from shore and steadily replaced by cool water from the deeps. This results in a steady fertilising of the coastal water which supplies food for countless stocks of anchovies. This small fish provides the food for millions and millions of guano birds specially equipped to convert them into an outstanding fertilizer. In addition the pelagic tuna and tuna-like fishes abound in these waters.

These favourable conditions have existed for centuries, and judging from the thickness of known guano beds, considerable deposits may have been made even 2,500 years or more ago. Based on the 143,850 tons crop of new guano in 1958, the consumption of anchovies by birds alone can be estimated as high as four million tons a year.

Supply of anchovy seems not to be a problem. Although there has been no means of measuring the abundance of anchovy until now, the indications are that there may be a permanent stock of about 20 million tons.

Anchovy.

The anchovy (Engraulis ringens) called "anchoveta" by the Peruvians is the most important commercial species. It weighs from 30 to 50 grams and has an oil content of $2\frac{1}{2}$ to 3 per cent. The bonito (Sarda chiliensis) is the second species of commercial importance followed by the skipjack (Katsuwonus pelamis), yellowfin-tuna (Thunnus macropterus) and a number of clupeidae types like machete (Echmidium chilcae) and sardines (Sardinops sagax). A large variety of white fish is also found which is mainly utilised for local consumption and whose importance as a species equals less than 0.2 per cent of the total fish production.

The economic occurrence of anchovies extends along the entire coast of Peru, while skipjack and tuna are mainly fished along the northern and southern parts of the coast, and bonito in the central part. There are four or five main fishing areas with varying production due not to lack of fish, but rather to the absence of harbours, unfavourable wind and current conditions, lack of water and communication.

Fishing is carried on throughout the year and for the important species there is no pronounced season. The months of June to August are generally lower in production than November through to February, with the exception of bonito which is not used for canning during the period June through September.

Primitive.

Fishing has for centuries been on a primitive scale and only used to meet the needs of local consumption. In the early 1940's U.S. traders started buying fish livers and the preservation of bonito and tuna by salting resulted. During World War II when there was a great demand for protein, Peru supplied several thousand tons to the Caribbean and European markets.

As salting was not the most satisfactory form of preservation, canneries and fish freezing plants were established. The canning and, in parallel, the freezing of tuna and swordfish for export dominated the Peruvian fishing industry until the early 1950's. At that time the use of anchovy as raw material for fish reduction became important and resulted in an explosive development of the anchovy fisheries.

The development of the Peruvian fisheries can best be judged from the following production figures for all species in metric tons:

1939	..	4,849	1950	..	83,641
1940	..	6,404	1951	..	105,551
1941	..	11,889	1952	..	113,000
1942	..	21,063	1953	..	117,777
1943	..	26,725	1954	..	146,000
1944	..	30,268	1955	..	183,337
1945	..	33,124	1956	..	267,286
1946	..	41,722	1957	..	453,135
1947	..	26,650	1958	..	900,000
1948	..	47,652	1959	.. est. at	2,000,000
1949	..	60,801			

In 1958 production was composed principally of anchovies, 82 per cent; bonito, 7.3 per cent; machete, 2.1 per cent; skipjack, 1.5 per cent. The distribution was 91.6 per cent for industry, 6.8 per cent for fresh fish consumption and 1.6 per cent for salting.

Purse Seines.

Fishing is conducted mainly with purse seines using vessels up to 87 ft. long; the bulk of the fleet consisting of vessels in the 42 ft. to 60 ft. range. The size of vessels has increased with the expansion of the fisheries and ships with loading capacity of 120 tons have recently been used by the anchovy fisheries. Vessels are mostly equipped with high-speed propulsion engines and are of lightweight design.

There are an estimated 4,000 fishing vessels in operation of which some 700 are powered and 400 fall in the 42 ft. to 80 ft. size range. Apart from these there are a number of foreign flag tuna clippers operating in Peruvian waters either with a special fishing permit, or working for Peruvian canning and freezing plants.

Anchovy fishing is done in coastal waters often just beyond the surf. So far, it has not been necessary to extend operations very much beyond sight of land with the exception of tuna fishing. Synthetic fibres dominate the net market, most purse seines being of nylon web with plastic floats. Sizes range up to 160 fathoms long by 20 high for the 60ft. vessels, and for the larger units nylon nets of 220 by 26 fathoms are used. Nets have mostly been imported but local manufacture of nylon nets has developed under free competition.

Due to the nature of the coastal anchovy fisheries, little use has been made until now of fish detection or radio communication. Airplane spotting of anchovy schools has been used with great success resulting in an increase in the production of the vessels.

Yearly production figures for a 60 ft. anchovy purseseiner can be estimated at maximum 5,000 to 6,000 tons with larger vessels reaching up to 8,000 tons. Besides purseseining for tuna, bonito and anchovy, 25 ft. gill-netters are used for bonito fishing. However purse seines are the favourite gear in this field and gill-netters will presumably disappear.

A limited number of trawlers are engaged in shrimp fishing along the northern coast, and on the central coast for market fish. Hand harpooning of swordfish is done from 30ft. long vessels.

Local boat building has developed to the point where it provides nearly all vessels used by coastal fisheries. While the greater part of the fleet consists of wooden vessels, in 1959 some yards started manufacturing steel hulls and have developed two standard types of vessels of 80 tons and 120 tons capacity. During 1959 some 150 vessels were under construction simultaneously in yards in Callao, the country's main port.

Processing.

During the past decade 62 fish reduction plants have been installed with two major production centres, Callao and Chimbote, 260 miles to the north, with the remaining plants distributed between these two centres. There exist 39 canning factories but only a few are in operation. Tuna and shrimp freezing plants are located on the northern coast and one major integrated canning and freezing plant with reduction facilities is located at Ilo close to the Chilean border.

Ninety per cent of the canning industry is based on packing bonito or tuna at an average total of 15,000 tons yearly. Export of canned bonito has reached the following figures

	Cases.
1954 ..	1,195,500
1955 ..	1,357,037
1956 ..	1,502,599
1957 ..	1,452,390
1958 ..	1,085,155

A decline in production began in 1957 because of competition in the export markets, low prices and high capital requirements for this industry.

The fish freezing industry is growing from year to year and in 1958 represented an export volume of about 17,000 tons. Ninety per cent of this volume was frozen tuna with small quantities of frozen swordfish and shrimps. The export figures in metric tons for years 1954 to 1959 inclusive are as follows:

1954	..	11,771.6	1958	..	16,812.9
1955	..	11,847.9	1959	..	13,327.2
1956	..	12,893.9	including August.		
1957	..	12,406.8			

An increase in the export of frozen fish is expected for the coming years as well as an increase in local consumption.

Fishmeal.

The production figures of the fishmeal industry show the dynamic development of the anchovy fisheries. Peru has become the number one manufacturer and exporter of fishmeal in the world.

Export figures in metric tons of fishmeal for 1954 to 1959 inclusive are as follows:

1954	14,040.4
1955	18,767.6
1956	27,791.7
1957	65,409.6
1958	108,108.4
1959	300,000

The total fishmeal production for 1959 is not yet known, but estimated figures are close to 400,000 tons. This means an increase of about 275,000 tons over the 1958 total of 127,000 tons.

Many of the existing reduction plants initiated operations with very limited means, utilising second-hand equipment together with locally manufactured equipment of a simple and cheap design. Few factories were able to build up their industry with new and modern equipment. With the development of the industry, experience and sufficient capital has been accumulated to adapt processing techniques for the specific conditions present when handling anchovy. A continuous modernisation of processing equipment is taking place. Fish pumps of local design and construction are used for transferring fish from nets to vessels and from vessels to the factories on shore through 6 in. to 8 in. under-water steel pipes.

Recovery of fish oils is increasing with common use of desludgers, oil centrifuges and oil purifiers. As the oil content of anchovies is as low as two to three per cent, attention has been paid to oil recovery only during recent years. Estimates on production of anchovy oil are 24,000 tons for 1959.

Stickwater from the reduction process is only utilised by a few plants. However, with the decline in the export prices for fishmeal, great interest is being shown in the recovery of stickwater for manufacturing whole meal and major development can be expected within this field.

The markets for canned bonito, frozen tuna and fishmeal are all under pressure of strong international competition. While costs are rising in the canning industry, frozen products have an expanding market. Fishmeal is favoured by the easy supply of anchovies resulting in relatively low costs of production, permitting advantageous competition in international markets. It is predicted that market pressure due to increased production will be met by an increase in world consumption for agricultural and stock feed needs are steadily expanding.

As anchovy and bonito fishing is limited to an area within sight of land, with few vessels going beyond 60 miles from shore, there is still much room for expansion of the Peruvian fisheries. With the use of improved vessels, better gear, and fish detection equipment, even better results may be obtained. However, it is expected that production will settle at its present level for the time being and that attention will be devoted to improving facilities and stabilising markets.

(Fishing News London February 5, 1960)

Sea Life Conservation Programs discussed at Wildlife Conference.

The sea has been aptly called an unknown jungle but great potentials exist for the control, cultivation, and concentration of the harvest thereof, the Director of the U.S. Bureau of Commercial Fisheries told the Northeast Wildlife Conference January 11. The conference met in Providence, Rhode Island.

After touching briefly on the history of commercial fisheries in this country and reviewing some of the current operations and results of recent research, the speaker plunged into the problems and possibilities of practising conservation in the oceans. The principal concepts of the talk were:

> New concepts in conservation are developing in the world's marine laboratories with interesting emphasis on the "weather" of the sea, the possibility of creating artificial "upwellings", the "farming" of bays and estuaries, the development of brackish water areas for fish culture, and the challenge of the nations of the world, one to another, for the fruits of the "rich ocean pasturages."

Marine scientists are recognising that the important fisheries are not the only things which exist beneath the surface of the ocean. Fish live in complex communities and compete and struggle for their niche in their marine environment just as do land plants and animals. Studies of the environmental factors affecting the life and death of these marine communities seem to be essential for future conservation of the marine fisheries. Ocean "weather," that is, the conditions which exist below the surface, is a variable which affects the habits and life of all ocean fisheries. Conservationists must understand thoroughly the ocean environment and the various anomalies which affect the fishes living there.

Vertical currents of water, called "upwellings" which occur naturally in the vicinity of the equator, bring up minerals and nutrients from the ocean depths to the surface and provide the basis for the start of the food chain for ocean life. Even now some oceanographers are considering the possibility of heating deep areas in the open ocean, or even heating localized areas, and creating artificial upwellings which would transfer the nutrients and minerals from the depths to the surface.

International fisheries and the accompanying problems are increasing in importance. As nations turn to the sea for food and recreation, there is bound to occur the question of ownership of the resources, the problem of which nations shall share in the resources, and how the sharing can be done. Not only have nations like Russia and Japan established huge fishing fleets which seek out and harvest rich crops from the sea but they are also developing large and efficient oceanographic research vessels. This is a challenge which the United States must meet to ensure food and recreation for our citizens in the future.

Relative to the farming of bays and estuaries, the United States has a problem of its own to solve. In Asia and in some of the countries of southern Europe where conditions are favorable, this type of fish culture is rather well developed. The possibilities of intensive sea farming similar to that practised on land is, therefore, not an impractical concept. But in this country, the demand for estuarial areas for industrial purposes or for subdivisions, or for some other purpose, is already threatening this area of conservation. This definite trend cannot be stopped by negative action but facts are not at hand for affirmative action. Therefore we need to get on the job on an emergency basis for developing the facts which, in turn, will be the basis for a sound conservation program in those areas.

> Much has been learned and much must still be learned on the biology of fish, upon making intelligent harvests, and the economic and physical sciences involved if the nations of the world are to make the sea produce even a portion of its great potential.

The speaker also reviewed the work of many of the international commissions which now exist and showed their conservation successes in spite of what scientists concede to be only a fraction of the knowledge which man should have in formulating a conservation program for the various oceans.

(U.S. Fish & Wildlife Service, Bureau of Commercial Fisheries,
(Market News Service, New York January 26, 1960)

BIG HAULS ON NEW PRAWNING GROUNDS.

Fishermen who got in early on new prawning grounds discovered off Cape Moreton (Queensland) earned up to £1,000 a week according to Evans Paddon of the "Challenge". Boats which worked the grounds from Cape Moreton to Caloundra made catches of up to 5,000 lb. of king prawns in a week. Fishermen had obtained 4/- a lb. for the prawns from processors, he said. Mr. Paddon (of Evans Head) is the biggest single operator in the prawn fishing industry. He owns the ocean-going prawners Challenge, Roger E. Voyager and Reliance, his own cool stores and packing sheds and his own transport vehicles. The complete plant is said to be worth at least £100,000.

Mr. Paddon was one of the early supporters of co-operative marketing in the N.S.W. fishing industry but now plays a lone hand. "I wouldn't go back into the co-ops because I don't think they'll make the grade. There are too many fundamental weaknesses in the system and I can't see any future in tying up with something which won't be a success", he said.

Mr. Tony Arena, principal of A. J. Arena, Australia's largest prawn handler, subsequently said the Cape Moreton grounds were not as good as first experienced. The grounds were in open water 10 hours steaming from port and frequently the weather blew up rough before the fleet reached the grounds. Furthermore the bottom was very uneven and much gear had been lost. Mr. Arena said fishermen were lucky to get 600 lb. of prawns a week for which they were now paid 3/- lb. by processors.

(Fish Trades Review Sydney February, 1960)