FISHERIES DEPARTMENT
WESTERN AUSTRALIA
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STAFF NOTES.

The Director, Mr. A. J. Fraser, paid a brief visit to Geraldton on April 28 and 29. While in the town, he interviewed applicants for the position of skipper of the p.v. "Kooruldhoo".

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The Supervising Inspector, Mr. J. E. Bramley, will commence annual leave on May 9. During his absence Senior Inspector J. E. Munro, who resumed duty on April 4 after annual leave, will act as Supervising Inspector.

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The Chief Clerk, Mr. B. R. Saville, resumed duty on April 11, after long service leave. Other officers to return to duty in April after leave were Inspector A. V. Green, of Mandurah, and Cadet Inspectors J. T. Kelly and R. G. Emery.

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Relieving Inspector G. C. Jeffery will finish annual leave and, on May 2, will take over the Fremantle district from Senior Inspector A. K. Melsom during the latter's absence on leave.

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Assistant Inspector G. J. Hanley will also commence annual leave on May 2.

Assistant Inspector D. H. Smith, who is at present on leave, will start work again on May 17. After a period of instruction, Mr. Smith will be transferred to Carnarvon to act as Whaling Inspector at the Nor'-West Whaling Company's station during the coming season.

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Technical Officer L. G. Smith will commence 1 week's annual leave on May 20.

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The Fauna Protection Officer, Mr. H. B. Shugg, with Fauna Wardens S. W. Bowler and N. E. McLaughlan, inspected reserves in the Moora, Namban and Coorow districts on April 28 and 29.

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An informal function was held at Head Office on April 28 to farewell Miss Y. L. Lauffer on the eve of her marriage. As a small token of esteem, she was presented with a selection of cutlery by the Chief Clerk, Mr. B. R. Saville, in the absence of the Director.

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We welcome to the staff Mr. Paul Andrew Smith who has joined the Department as a cadet and been assigned to the r.v. "Peron".

PERSONAL PARS.

Mr. H. K. Siddiqui completed his studies of fisheries statistics and marketing in this State and left Perth for Adelaide on April 18. The following note was subsequently received by the Director from the Commonwealth Public Service Inspector in W.A.:

> "On behalf of the Public Service Board, Canberra, it is desired to express sincere appreciation of the assistance provided by yourself, Mr. Bowen and other officers of your Department in connection with the training of Mr. H. K. Siddiqui, I.C.A. nominee from Pakistan, who recently visited this State."

Continued Pg. 56.

VALE BERT MURRAY

The sudden death of ex-Inspector H. J. (Bert) Murray on April 28, at the comparatively early age of 66, came as a very great shock to his old friends and colleagues in the Department. Although since his retirement in August, 1958, Bert had had one or two slight heart tremors, nobody ever suspected that one who was so full of vigour and the zest of life would not survive to a ripe old age. Bert, although of rugged exterior and forthright character, had the softest heart in the world. His whole life had been full of little acts of kindness to all with whom he came in contact, and his generosity was a by-word with all who knew him.

To Bert Murray nothing was ever a trouble. Whatever he did he did with a will, and although during his 17 years' association with the Department at Geraldton, Hopetoun, Mandurah and Perth he had some really tough assignments and many brushes with fishermen, he always held the respect of the fishing community.

Bert was always a keen gardener, and wherever he was stationed, and at his home in Mount Lawley, where he died, his flowers and vegetables were always a sight to behold. In recent years he took up bowls as a recreation, and had already reached pennants standard.

To Mrs. Murray, who survives him, to his two sons and 12 grandchildren, the Department extends its most sincere sympathy.

Messrs. Reg. Hockings and Alan Temple have joined the staff of the Australian Pearling Co. Ltd. in connection with its prawning venture at Carnarvon. Both have now taken up residence in Perth.

Mr. Hockings, who hails from Thursday Island, was previously engaged in the pearling industry at that centre. He spent some time in this State during the war years, having been attached (as Bomb-aimer/Navigator) to a Liberator Squadron operating from Cunderdin.

Mr. Temple was for a number of years gear officer of C.S.I.R.O.'s Division of Fisheries and Oceanography at Cronulla, N.S.W. Some twelve months ago he resigned his position with the Organization and settled at Albany, in this State.

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Mr. A. H. Robinson, of Coolup, who is an old friend of the Department and a deputy member of the Fauna Protection Advisory Committee, will shortly leave for a six months' tour of the United Kingdom and the Continent. Accompanied by Mrs. Robinson, he will sail from Fremantle on the s.s. "Strathnaver" on May 7. His address in England will be c/o Mrs. D. J. Finden-Crofts, Cumberland Hotel, Worthing, Sussex.

* * *

The Director has been notified of his appointment as a Justice of the Peace for the State of Western Australia. Mr. Fraser's appointment was published in the Government Gazette of April 14.

"PERON" TO SAIL.

The r.v. "Peron" will sail from Fremantle on May 10 to continue exploration of the prawn and scallop grounds in Shark Bay.

On May 4 an inspection of the vessel will be made by the Minister for Fisheries, Mr. Ross Hutchinson. The Minister has issued the following statement in relation to the vessel:

"M.v. "Peron" is a 75 ft. vessel, powered with a 160 H.P. motor, fully equipped with refrigeration and scientific aids (echo sounder, hydraulic winch, trawling gear, laboratory, etc.). She is designed to undertake exploratory and experimental fishing, to discover new fishing grounds and to test, in ocean waters, fishing techniques new to Western Australia; to tow plankton-nets for fundamental fisheries research and to secure specimens to enable the Department to

add to its knowledge of the marine resources of Western Australia.

At the outset she will operate in waters in the North-West Cape - Carnarvon - Shark Bay region, working co-operatively with vessels of a private company interested in the prawn and scallop fisheries of the area in question.

Later, she will be engaged in testing the flat fish and prawn resources of the deeper waters off Fremantle, and undertake trolling for tuna, spanish mackerel and other upper water species."

The Australian Pearling Company, which is connected with the Kulenkampff Co. of Sydney, will be operating three boats in Shark Bay very soon, the Company's Manager, Mr. M. Drinan, has reported. Within six months it is expected the fleet will be increased to six. Mr. Drinan, in a press release, said he was satisfied that the ocean waters off our North-West coast held greater promise for the development of a world export fish industry than any other waters around Australia.

Previous exploratory work by the Company's vessel "Nanango" mapped scallop and tiger prawn grounds and after three months' trawling brought back 117,000 lb. of first-grade scallops.

DEPARTMENT FULLY MANNED.

For the first time for a number of years the Department's staff will be up to full establishment early in May by the replacement of Miss Yvonne Lauffer, who was married last month, and the appointment of skippers for the patrol vessels "Kooruldhoo" and Misty Isle".

The following sets out in full detail the disposition of the staff in all sections:

Section and Name of Officer.	Appointment.	Location.
Administration:		
Fraser, A.J.	Director	Head Office
Baird, R. J.	Pearling Inspector	Broome
Bateman, A. J.	Fleet Maintenance Officer	Fremantle
Clerical:		
Saville, B. R.	Chief Clerk	Head Office
Buchanan, A. J.	Clerk	" "
Mitchell, J. M.	Clerk	" "
Ferguson, G. C.	Clerk	" "
Broun, Delia A.	Typist	" "

Rowland, Wendy M.	Typist	Head Office
Lothian, Vicki L.	Assistant	" "
Fauna Protection:		
Shugg, H. B. S.	Fauna Protection Officer	" "
Cherrington, W. K. H.	Clerk	" "
Bowler, S. W.	Warden	" "
McLaughlan, N. E.	Warden	" "
Research:		
Bowen, B. K.	Research Officer	" "
Smith, L. G.	Technical Officer, Grade 1	" "
Simpson, J. S.	Technical Officer, Grade 2	" "
Piesse, H. C. W.	Master, r.v. "Peron".	Fremantle
Wright, D.	Mate, " "	"
Stock, L. C.	Engineer, " "	"
McKay, R. J.	Technical Officer, Grade 2, r.v. "Peron"	"
Smith, P. A.	Cadet, r.v. "Peron"	"
Seabrook, C. J.	Master, r.v. "Lancelin"	"
Haynes, C. R. C.	Mate, " "	"
Emery, R. G.	Cadet, " "	"
Inspection:		
Bramley, J. E.	Supervising Inspector	Head Office
Munro, J. E.	Senior Inspector	Victoria Park.
Melsom, A. K.	Senior Inspector	Fremantle.
Traynor, J.	Inspector, Grade 1	Victoria Park.
Jeffery, G. C.	Inspector, Grade 1 (relieving)	Head Office
Crawford, R. M.	Inspector, Grade 1	Geraldton.
Green, A. V.	Inspector, Grade 1	Mandurah.
Carmichael, B. A.	Inspector, Grade 2	Albany.
Baines, T. B.	Inspector, Grade 2	Bunbury.
Forster, E. I.	Inspector, Grade 2	Victoria Park.
Kavanagh, H. D.	Inspector, Grade 2	Shark Bay.
Houston, G. D.	Inspector, Grade 2 (skipper, p.v. "Dampier")	Fremantle.
Pearce, A. T.	Inspector, Grade 2 (skipper, p.v. "Kooruldhoo")	Geraldton.
Campbell, F. J.	Inspector, Grade 2 (skipper, p.v. "Misty Isle")	Fremantle.

Barker, E. H.	Assistant Inspector	Mandurah
Henry, N. K.	Assistant Inspector	Geraldton
Gordon, D. P.	Assistant Inspector (crew, p.v. "Misty Isle".)	Fremantle
Smith, D. H.	Assistant Inspector	Victoria Park.
Frizzell, L. R.	Assistant Inspector (crew, p.v. "Dampier")	Fremantle.
Hanley, G. J.	Assistant Inspector (crew, p.v. "Kooruldhoo")	Geraldton.
Kelly, J. T.	Cadet Inspector	Fremantle.
Enright, K. P.	Cadet Inspector	Victoria Park.
Martin, V. G.	Cadet Inspector	Pemberton.

MALACOLOGIST'S VISIT.

Sponsored by the Bishop Museum, of Honolulu, Hawaii, a marine biological expedition arrived in Perth last month. The leader was museum associate Mrs. Mary King, who was accompanied by Drs. Thomas Richert and C. M. Burgess, marine scientists from Honolulu, and by Mr. C. Weaver, also of Honolulu. The expedition has chartered the 81-ft. luxury motor cruiser, "Davena" for a two-month working cruise to north-west waters. The full co-operation of the Zoology Department of the University of Western Australia and the Western Australian Museum has been lent to the expedition. The party on board the "Davena" will include Dr. R. W. George, Curator of Invertebrates at the Museum and Mr. R. D. Royce, Senior Botanist of the Department of Agriculture. Mr. Barry Wilson, of the Zoology Department of the University, will join the expedition during the second month.

After a two-day shake-down cruise the "Davena" will leave early this month for Shark Bay, Carnarvon and Broome. She will dredge for shells at various points off the north-west coast.

BASIC WAGE INCREASE.

As a result of the recent quarterly declaration of the Court of Arbitration of Western Australia, the basic rates payable to public servants have been increased. In the metropolitan area the rate for males has increased by £13 a year while in the South-West Land Division and other districts it has risen by £4 a year. All male officers over the age of 19 years will receive the full increase. Cadets and assistants below that age will receive pro rata increases.

WHALING.

Resuming sperm whaling operations on March 30, the Cheynes Beach Whaling Company, of Albany, enjoyed considerable success. By April 26,

37 sperm whales had been taken despite rough weather having prevented the chasers from working in the best areas. The whales were reported to be in good condition, of a size range of up to 48 feet.

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The Nor'West Whaling Company expects to commence humpback whaling at its Carnarvon station about June 16. The actual date of commencement will depend on advance reports on the northward migration of the whales.

Assistant Inspector D. H. Smith has been appointed Whaling Inspector for the coming season.

FOREIGN PEARLING FLEETS AGAIN RESTRICTED.

Advice has been received from the Director of the Fisheries Division of the Department of Primary Industry, Canberra, regarding the arrangements for Japanese pearling operations during the 1960 season.

The Japanese pearling fleet, he says, will be permitted to take pearlshell in the eastern sub-areas of the Northern Territory Division and to the west of Torres Strait in the Queensland Division, only. No operations will be carried out in the Western Australian Division.

It is understood that a fleet of 11 luggers with an inspection vessel will leave Japan on May 2. It is expected in Australian waters on May 19.

The Japanese fleet will be limited to a total take of 415 tons.

ABROLHOS CRAYFISHING.

On the following page of this issue is a table showing the production of crayfish at Houtman's Abrolhos during March. For comparative purposes the March, 1959, production is also shown.

While this year's catch is a record for the opening month of the Abrolhos season, it must be remembered that fishermen had almost twice the fishing time in March this year, the opening date having been brought forward from March 15 to March 1.

The catch, however, is far from being double that of previous years, notwithstanding the longer period and the increased number of men.

It will be most interesting to watch production trends during the ensuing months.

AREA	MARCH 1959.			MARCH 1960.		
	No. of men	Total Catch	Catch per man	No. of men	Total Catch	Catch per man
		lb.	lb.		lb.	lb.
North Island	35	123,690	3,534	67	267,673	3,995
Wallabi Group	65	206,755	3,181	78	332,863	4,267
Easter Group	73	291,868	3,998	94	479,311	5,099
Pelsart Group	46	174,876	3,802	43	180,076	4,188
TOTALS:	219	797,876	3,643	282	1,259,923	4,468

Note:- 1959 season commenced on March 15
1960 season commenced on March 1.

FREEZER BOATS AT THE ABROLHOS

Authority has been obtained to prevent freezer boats from operating as such in the Abrolhos area. Inspectors will recall that the dual application of the Commonwealth and State Fisheries Acts has made the legal situation extremely complicated. Despite all previous efforts to the contrary, it was found very difficult to stop freezer boats from processing in the Islands when their owners or skippers were prepared to challenge our jurisdiction.

In the Government Gazette of April 28, however, our Fisheries Act Regulations were amended to include a new subregulation of Regulation 14A. Coming after existing subregulation (2), it reads -

"(2a) (a) A person shall not bring into Western Australian waters or on to land, any portion of the fish known as or called "crayfish" which has been taken in the Abrolhos Islands area.

(b) For the purposes of this subregulation the 'Abrolhos Islands area' means all that area bounded by a line starting at the intersection of 28 degrees South Latitude and 113 degrees 50 minutes East Longitude and extending south-easterly to the intersection of 30 degrees South Latitude and 114 degrees 40 minutes East Longitude, thence west to 113 degrees East Longitude, thence north to 28 degrees South Latitude aforesaid, and thence east to the starting point."

The new subregulation makes it an offence, therefore, for any person to bring into Western Australian waters or on to shore in Western Australia, any tails of crayfish taken in that part of the Abrolhos Islands area which is not included in territorial waters. It will not, however, prevent the taking of whole crayfish from the Abrolhos Islands area to Geraldton for processing.

Inspectors are now empowered to seize any crayfish tails which they reasonably believe have been removed from crayfish taken in the Abrolhos Islands area and processed at some place other than a Geraldton shore establishment.

NEW DINGHIES.

The Acting Manager of the Harbour and Light Department, Mr. A. M. Fuller, has advised that his Department will build two new 14 ft. carvel dinghies for this Department. Provision is being made on the 1960-1961 estimates to meet the cost involved. As this will not be substantial, approval for the expenditure is anticipated.

The new dinghies will be allotted to the Perth and Fremantle districts, and will replace old ones which have given good service but are now beyond repair.

CLEARING HOUSE

Underwater Studies of the Fascinating Scallop

by Eric Hardy, F.Z.S.

Aqualungs and underwater cameras have taken the marine naturalist a long way from the pioneering days of Sir William Herdman dredging the North Wales sea-bed around Anglesey less than a century ago, and being satisfied if he found new specimens of shellfish without knowing much more about how they lived.

At our local sea-fisheries' committee recently, we saw a fascinating colour film of the habits of scallops, taken by Mr. R. H. Baird of Conway, with the aid of aqualung diving and underwater movie-camera, on the sea-bed off Holyhead harbour. Some of these beautifully pink, fan-shaped molluses brightly ribbed with orange and red were taken from Holyhead to the clearer water in the tanks at the Conway research station, for even better shots of them jumping about the sea-bed as they clap their shells in probably the nearest thing we shall see to the flying saucer.

Some Tests

Excellent shots showed their fine tentacles stretching out between their tiny opalescent, greenish eyes, to search for food. The scallop swims until it finds a sandy patch, then, flicking over on to its righthand side, it wriggles in until covered and hidden by sand. No wonder the dredge has to drag like a sledge several time over a scallop bed.

The scallops escape starfish enemies by swimming away from them. To find out what stimulates the scallop to move--smell or contact something else-- a rubber starfish was placed on a scallop shell. It made no movement. Extract of starfish squirted near it only made it withdraw its tentacles, and jets of seawater were ineffective. Shrimps jumping about made the scallops keep their shells closed, probably because the shrimps nibbled at them.

Dredging

At Conway a few years ago a sledge-type of dredge was designed by Mr. Baird which cut out the bouncing effect of the old one. Off Newhaven this was found much more efficient, though it caught more stones; but I notice that when the Conway dredge was recently introduced into Australia, the authorities banned it from the D'Entrecasteaux scallop channel in Tasmania.

Tests showed it more satisfactory in deeper water, and that it could be towed faster; but Tasmanian fishermen blamed the new dredge for increasing the destruction of scallops. However, their contention is controversial.

Scallops, of course, haunt the slightly deeper water below tide-line. A Tasmanian fisherman hooked a live young one on a shark-line from 63 fathoms, the greatest depth recorded there. It measured $3\frac{1}{2}$ inches.

With the exception of some parts of Menai (North Wales) and the Devon coast like Salcombe, British scallops usually range from 10 fathoms downwards. In the D'Entrecasteaux Channel in Tasmania they range from eight to ten, and are also fished as deep as 18.

The Conway dredge is probably only destructive where a lot of small young scallops occur and intensive dredging is pursued. The production seems also to follow the cycles of the weather, with successful sets of young scallops spawning during warm years, and cooler years producing fewer scallops. On the Atlantic shores of Canada, production also varies as the beds are either fished out or die down from natural causes. The giant scallops off the Gulf of St. Lawrence are killed when the water warms to 69 to 74 deg. F. The fatal temperature depends upon how much the scallop has already been acclimatised by previous rises. The sudden flooding of a scallop bed by warm currents may lead to mass mortality. Sudden temperature drops may also make the scallop as lethargic as the cold lobster, and then it falls more readily a prey to predators.

(Fishing News London March 4, 1960)

New Shark Repellent

Negotiations have been completed between the owners of the patents, covering the exclusive manufacturing and distribution rights for Shark Repellent Chemicals in all shapes and forms for all commercial uses, and Presto Marine Supply Company, a division of Presto Beverage Corporation, of Yonkers, New York.

The Shark Repellent Material is a mixture of various dyes and chemicals, which when properly blended and released under water, simulate the ink ejected by an octopus. This material, which is manufactured and blended under special process by The American Cyanamid Company, also gives off, when released under water, the odor of a dead or decaying shark. These two factors keep the area of protection

afforded by the shark repellent, free of carnivorous fish.

The Shark repellent mixture is packaged in several ways by The Presto Marine Supply Company. Until now, it has been available from Presto only for use by the armed services, and by such companies who held government contracts which required the Shark Chasers as components. Now Presto makes this protection available to all. They have compiled a brochure incorporating the various kinds of shark repellent packages, along with their line of dye markers, showing the uses and prices, which brochure is available to anyone writing to Presto.

Now for the first time, Presto makes available to the commercial fishing industry, a protection against the age-old nemesis of sharks. Presto, being the world's largest packagers of ocean coloring dyes, has done considerable research and development in this field, including the development of a dye marker, which is used in the current missile programme. It has had the opportunity during its field programmes at sea, to work out and test various methods of packaging shark repellent for many uses.

The shark chasers are made for marine and aviation use, as well as for skin divers, and for the commercial fishing industry. For the commercial fishing industry, Presto had developed a kit consisting of five packets, each equipped with a snap fastener for easy attachment to nets. One packet affords protection for approximately 30 - 40 feet of net, so each kit can handle nets up to 200 feet in length. This protection will eliminate sharks from approaching the nets, or attacking them, which has always been a costly part of the commercial fisherman's overall expense. The costs here are not so much in the loss of the catch, or the man-hours used in making the catch, but more so in the repair of the nets, and in many cases where the damage is repeated, in the replacement of the nets.

The shark repellent packets which Presto has developed for this purpose, consist of a porous bag of the chemical mixture, protected by a thin coat of water soluble wax. Attached to the bag is a cotton tape, which has a snap fastener sewed on. The fastener easily snaps on to the net. As the net is let out the packets are snapped onto the centre of the net at 30 to 40 foot intervals. About 10 to 15 minutes after reaching the water, the protective coating of wax is dissolved, and the bag begins its release of the repellent which forms the ink cloud behind the net. The bag continues its release of this cloud for about 3 hours, which is sufficient time for the drag and pull in of the net. As the net is restacked, the empty bags are just unsnapped and thrown away.

Similar procedures are used for throw nets, circular nets, or bottom drag pull up nets.

(Fishing Gazette New York (February, 1960)

Russians Building New Herring Factoryship

An advanced herring factoryship capable of producing meal and oil at sea is being built in the U.S.S.R.

The 475 ft. ship will be welded, with two decks, and will have a displacement of 15,000 tons. Engines of 6,250 horsepower will drive the vessel at 14.5 knots.

She is designed to anchor in depths of 164 fathoms, and is specially fitted with fender arrangements to allow fishing vessels to come alongside and unload in relatively heavy seas. Ready for completion in 1961, she will be the first herring factoryship produced by the Russians. The report announcing the construction of the vessel in a Russian trade journal gave no indication where the ship will be used.

(Western Fisheries Vancouver, B.C. February, 1960)

Russia to Double Salmon Hatcheries

Russia will double its present number of salmon hatcheries during the next seven years in an attempt to bolster rapidly declining duns.

A total of 38 new hatcheries is planned in order to bring the annual production of salmon to 1.4 billion fish. Russia now has 32 hatcheries, producing 600 million salmon.

Russian salmon catches have steadily declined from 1955 to 1958. Catches dropped from 172,400 metric tons in 1955, to 160,000 tons in 1956, 150,000 tons in 1957 and 73,000 tons in 1958. No 1959 figures are yet available, but scientists say they will be below those for 1958.

The Russians are trying to build their salmon runs by strict regulation of fishing off its shores, closing spawning areas and stream mouths to fishing, opening new fisheries research institutes, and expanding the hatchery programme, according to Michail N. Mironov, Soviet fisheries expert who attended the annual meeting of the International North Pacific Fisheries Commission in Seattle last November.

(Western Fisheries Vancouver, B.C. February, 1960)

F i s h

By world standards, Australians are only small fish eaters, consumption per head averaging about 9 lb. (edible weight) annually. Of this, somewhat more than 5 lb. consists of fresh or frozen fish, and between 3 and 4 lb. is canned and cured fish, largely of imported origin. There seems to have been little change over the past few years, although consumption of frozen fish has increased slightly following a higher level of imports since 1956/57. Supplies of canned fish have been interrupted by import restrictions, which still apply to some extent.

Production

Australian production is about 10% greater than in the pre-war period, but the industry has not expanded in recent years. According to official estimates, the 1958/59 catch was 74.4m. lb., live weight, which is less than the estimate for 1953/54, 5 years earlier. The size of the catch naturally fluctuates from season to season and at times these variations are quite marked, but it would seem that over the last three years production has settled at around 70/75m. lb. About 40% of the Australian catch is taken from the coastal waters of New South Wales; Victoria is the second fish producing State although it accounts for less than 20% of the Australian total. Western Australia, South Australia and Queensland each produce about 13% and Tasmania, around 4%.

The following table shows production of leading varieties during 1958/59 together with the chief producing States listed in order of importance:-

Fish Production 1958/59

	Estimated live weight n. lbs.	Chief Producing States
Mullet	14.1	N.S.W., Qld., Vic., W.A.
Aust. Salmon	8.5	W.A., N.S.W., Vic.
Shark	7.4	Vic., S.A., N.S.W.
Tuna	5.5	N.S.W., S.A.
Flathead	4.6	N.S.W. Vic.
Barracouta	4.3	Vic., Tas.
Snapper	3.1	N.S.W., W.A.
Other	26.9	
	74.4	

Source: Commonwealth Statistician

About one third of the market for canned fish is supplied from local production, which is in the region of 8.0m. lb. annually. Salmon and tuna make up the bulk of the output. In total, canning and other processing utilised about 16.0m. lb. weight of live fish last year, or slightly more than 20% of the total catch.

Imports

Imports were valued at £5.8m. during each of the last two financial years and, on the indications of the six months to last December, could well exceed £7m. during 1959/60. Canned fish imports account for about one half of this expenditure, and comprise mainly salmon from Japan and Canada, sardines from Norway and Canada, and herrings and sardines from Britain. Imports of frozen fish have been rising sharply over the past three years and expenditure this financial year could well exceed £3m., which would be double the 1956/57 figure. The increased purchases have been spread over a wide range of markets, the chief suppliers being South Africa, New Zealand, the United Kingdom and Denmark. Imports of smoked, dried and salted fish fluctuate considerably, but are currently running at about £800,000 a year. South Africa is the main supplier of smoked fish.

The Outlook

Possibilities of marked expansion of fish production appear rather limited as Australian waters are relatively poorly supplied with fish, even when compared with the other Southern Hemisphere countries which collectively account for much less than 10% of world production. Notwithstanding the small size of the Australian catch--less than 2% of that in the United States of America and less than 1% of the Japanese catch--it is said that our coastal water have at times been overfished, at least in areas which are within economical transport distance of markets.

There may be greater possibilities with open sea fishing but these have not been fully explored and operating costs would pose a problem. It would appear that imports may rise considerably as the population increases, with a growing proportion of migrants who have left countries where fish is a staple food.

(Monthly Summary of Australian Conditions April 13, 1960)
(The National Bank of Australasia Limited)