

## CHAPTER XXVI.

## FISHERIES.

NOTE.—Values of Australian oversea trade shown throughout this chapter are expressed as £A. f.o.b. port of shipment, except where otherwise indicated.

Further information on subjects dealt with in this chapter is contained in the annual printed bulletin *Primary Industries, Part II.—Non-Rural Industries and Value of Production* and in the annual mimeograph statistical bulletin *Fishing and Whaling*, particularly as regards types of fish, etc., caught.

## § 1. Introduction.

1. **Source of Statistics.**—Fisheries statistics in Australia are, in general, collected by the various authorities responsible for the administration of the industry. The fisheries within territorial waters (i.e. within three miles of the shore) are administered by State Departments, while the Fisheries Division of the Department of Primary Industry develops and administers fisheries in extra-territorial waters and co-ordinates fisheries administration.

Statistics of production of fish, crustaceans, molluscs and pearl-shell and trochus-shell included in this chapter are collected and supplied by State Fisheries Authorities through the Statisticians of the several States. Statistics are provided on a year ended 30th June basis, although figures for pearl-shell and trochus-shell refer to the season ended December or January of the fiscal year shown.

Details of the catch shown in this chapter refer in most instances to the recorded commercial production only. In view of the importance of amateur fishermen in certain types of fishing, details shown (both for particular species and for totals) cannot be taken as representing the total catch. In addition, it is likely that the figures shown may understate to some extent the full commercial catch because no information is available on fish taken for sale by persons not licensed as professional fishermen.

Particulars of whaling are collected on a calendar year basis and are supplied for publication by the Fisheries Division of the Department of Primary Industry.

Data of imports and exports of fisheries and whaling products are compiled in the Commonwealth Bureau of Census and Statistics as part of the statistics of oversea trade.

2. **Presentation of Fisheries Statistics.**—In the preparation of Australian fisheries production statistics, the quantities of individual products are, generally, in terms of the form in which they are taken from the water. For example, the statistics of fish production published in this chapter are in terms of "estimated live weights" which are calculated from landed weights by using conversion factors for each species in each State. These conversion factors allow for the fact that the quantities of fish reported are frequently in a gutted, headed and gutted, or otherwise reduced condition. Crustaceans are reported on a "whole weight" basis, and molluscs (edible) on a "gross (in-shell) weight basis". The figures of pearl-shell and trochus-shell refer to the actual quantities of dry shell for sale and exclude the weight of the fish.

The catch is generally shown according to the State in whose waters it was taken. However, a quantity of sharks and crayfish taken by Victorian-based fishermen in Tasmanian waters, but marketed in Victoria, is included in the Victorian catch, since the economy of that State is most directly affected. Similarly, pearl-shell taken by Queensland luggers operating in Northern Territory waters is included in the Queensland take. Pearl-shell taken by Japanese fishermen operating in Australian waters is excluded from Australian production figures, although the quantities taken are shown as a footnote to the table on page 1030.

## § 2. The Fishing and Whaling Industries.

1. **Resources and Fishing Areas.**—(i) *Fish.* The waters surrounding the Australian continent contain a great variety of marine fauna. Despite this, the fish stocks in Australian waters, with the exception of a few species, are small by comparison with the stocks in the Northern Hemisphere, which supplies most of the world production. Nevertheless, the Australian catch is low, even after making allowance for the smaller resources available, and the estimated consumption of fish in Australia per head of population is small. Consequently, with the exception of crayfish, there is not the pressure on resources necessary to induce expansion in the fishing industry and to encourage the investment of large amounts of capital. On the other hand, even this somewhat restricted Australian demand for fish is not met from purely local sources of supply, and large quantities of fish are imported each year. This is explained by the fact that the fisheries in the estuaries of the Australian coasts (the so-called estuarine fisheries) and those offshore for fish that dwell on the bottom of the sea (the demersal fisheries) have been over-exploited, with a consequent diminution of stocks. On the other hand, of those species of fish which have their environment near the surface of the sea (the pelagic fish), some have been continuously exploited, while others of value to Australia are still comparatively unexploited. It can be anticipated that the greatest future development of the Australian fishing industry will take place in the pelagic fisheries. However, no great contribution to the supplies of fresh fish can be expected from this source since most of the pelagic species caught are canned or processed.

The principal fishing areas at present are the coastal lakes, streams, estuaries and beaches which are for the most part associated with coastal streams. The offshore demersal grounds fall into two classes—(a) the reefs extending virtually right around Australia, from which cod, snapper, etc., are taken, and (b) the grounds from which flathead, morwong, etc., are taken. The flathead grounds lie on the continental shelf off south-east Australia, chiefly from Port Macquarie to south of Gabo Island and off the eastern Tasmanian coast. The demersal shark grounds lie principally in Bass Strait and on the continental shelf off eastern South Australia. Other demersal grounds also exist in the Great Australian Bight and off the southern part of Western Australia.

The grounds of existing pelagic fisheries include those for tuna which is taken in commercial quantities off the New South Wales and South Australian coasts. Barracouta is taken in Bass Strait and off eastern Tasmania. Spanish mackerel is found off the north-eastern coast from about Coff's Harbour to Cairns, and along the northern and north-western coast of Australia.

(ii) *Crustaceans.* Of the crustaceans exploited in Australia, crayfish is the most important and is taken on reefs of the continental shelf in the waters of all States. Considerable development has taken place in the crayfish fisheries, particularly in Western Australian, South Australian and Tasmanian waters, owing to the large market which has been established in the United States of America for these crustaceans. Crabs of various species are found in practically all coastal waters, while prawns are taken in the temperate waters of Queensland, New South Wales and Western Australia. Lobsters are caught in some freshwater streams of New South Wales.

(iii) *Molluscs (Edible).* In the mollusc group, edible oysters of various species are distributed around the entire Australian coastline. Oysters are taken in all States, with the exception of South Australia, and in the Northern Territory, but their commercial cultivation is restricted mainly to New South Wales. Until 1956, scallops were taken commercially only in Tasmanian waters, but since then they have been taken also in Queensland and Western Australia. Small quantities of other molluscs are also taken in some States.

(iv) *Pearl-shell and Trochus-shell.* Australia is the world's largest producer of pearl-shell, which is fished from Cairns in northern Queensland round the north coast of Australia to Exmouth Gulf in Western Australia. Trochus-shell is obtained from Mackay in Queensland to King Sound in Western Australia.

(v) *Whales.* Baleen whales, particularly the humpback whale, migrating from Antarctic waters to their breeding grounds in the warmer waters of low latitudes, pass up both the western and eastern coasts of Australia, returning to the Antarctic in the spring. Two whaling stations operate in Western Australia, one in New South Wales, and one in Queensland.

The company operating in New South Wales also operates a station at Norfolk Island. In addition to baleen whales, one of the two Western Australian stations also processes sperm whales, which are taken off the south-west coast of that State throughout the year.

2. *Persons Engaged.*—Particulars collected in the Population Censuses of Australia at 30th June, 1947 and 1954, showing the numbers of persons whose "industry" was stated to be "fishing and whaling", were included in previous issues of this Year Book. Corresponding particulars from the Census of 30th June, 1961, are not yet available.

Particulars of the number of persons engaged in the fishing industry, as shown in licensing records of the various States, are included in § 7, page 1039.

3. *Value of Production.*—(i) *General.* Although statistics of the value of production of the fishing industry have been on an established basis for some years, the actual collection of statistics of the quantity of fish taken presents many difficulties, and, consequently, any defects which may occur in the quantities must necessarily be reflected in the value of production. Statistics of both the gross value (at principal markets) and local value (at place of production) of the fishing industry are available. Particulars of the value of materials used in the process of production are not available for all States, so that value of production cannot be stated on a net basis as has been done with most other industries.

In 1960–61, the local value of fishing and whaling amounted to £12,813,000. The most important State was Western Australia with £4,220,000, followed by New South Wales with £3,299,000.

(ii) *Gross and Local Values, 1960–61.* Values of fishing and whaling production for each State are shown for 1960–61 in the following table. A more detailed reference to the value of production of fishing and whaling and other industries in Australia, as well as a brief explanation of the terms used, is included in Chapter XXX.—Miscellaneous.

#### GROSS AND LOCAL VALUE OF PRODUCTION: FISHING AND WHALING, 1960-61.

(£'000.)

State or Territory.	Gross Value (Gross Production Valued at Principal Markets).	Marketing Costs.	Local Value (Gross Production Valued at Place of Production).
New South Wales .. ..	3,847	548	3,299
Victoria .. ..	2,064	277	1,787
Queensland .. ..	1,588	216	1,372
South Australia .. ..	1,425	188	1,237
Western Australia .. ..	4,285	65	4,220
Tasmania .. ..	960	147	813
Northern Territory .. ..	85	(a)	85
<b>Australia .. ..</b>	<b>14,254</b>	<b>1,441</b>	<b>12,813</b>

(a) Not available.

(iii) *Local Values, 1956–57 to 1960–61.* In the following table, the local value of fisheries production and the local value per head of population are shown by States for the years 1956–57 to 1960–61. Because the value of materials used in the course of production is not available for all States, it is not possible to show a comparison of net values.

## LOCAL VALUE OF FISHING AND WHALING PRODUCTION.

Year.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	Australia (a)
LOCAL VALUE. (£'000.)							
1956-57 .. ..	2,939	1,178	1,575	1,295	2,737	609	10,506
1957-58 .. ..	2,792	1,104	1,542	1,074	3,226	508	10,402
1958-59 .. ..	2,947	1,265	1,343	1,071	3,867	664	11,243
1959-60 .. ..	3,101	1,771	1,448	975	4,276	683	12,325
1960-61 .. ..	3,299	1,787	1,372	1,237	4,220	813	12,813

LOCAL VALUE PER HEAD OF POPULATION.  
(£.)

1956-57 .. ..	0.8	0.4	1.1	1.5	4.0	1.9	1.1
1957-58 .. ..	0.8	0.4	1.1	1.2	4.7	1.5	1.1
1958-59 .. ..	0.8	0.5	0.9	1.2	5.5	2.0	1.1
1959-60 .. ..	0.8	0.6	1.0	1.0	6.0	2.0	1.2
1960-61 .. ..	0.8	0.6	0.9	1.3	5.8	2.3	1.2

(a) Includes Northern Territory.

## § 3. Fisheries Production.

1. Summary of Production of Fisheries.—The following table shows the production and gross values of the various fisheries products by States for the year 1960-61.

FISHERIES PRODUCTION: QUANTITY AND GROSS VALUE OF CATCH,  
1960-61.

Particulars.	Unit.	N.S.W.	Vic.(a)	Q'ld.	S.A.	W.A.	Tas.(a)	N.T.	Aust.
Fish(b)—									
Estimated Live Weight	'000 lb.	30,266	14,772	7,421	13,357	9,484	3,361	436	79,097
Gross Value ..	£'000.	2,283	1,559	472	805	600	175	40	5,934
Crustaceans—									
Gross Weight ..	'000 lb.	3,536	2,077	4,136	3,721	18,173	3,167	..	34,810
Gross Value ..	£'000.	660	485	493	620	3,025	554	..	5,837
Molluscs—									
Gross (in-shell) Weight	'000 lb.	c 13,296	719	1,909	..	583	5,301	..	21,808
Gross Value ..	£'000.	(c) 873	21	70	..	33	186	..	1,183
Pearl-shell(d)(e)—									
Weight ..	'000 lb.	..	..	1,821	..	1,270	..	222	3,313
Gross Value ..	£'000.	..	..	409	..	270	..	45	724
Trochus-shell(d)—									
Weight ..	'000 lb.	..	..	309	..	10	..	..	319
Gross Value ..	£'000.	..	..	26	..	1	..	..	27

(a) The catch by Victorian fishermen in Tasmanian waters, comprising 1,040,000 lb. estimated live weight of shark valued at £81,000 and 804,000 lb. crayfish valued at £187,000, is included in Victoria. (b) Includes quantity and value of shark livers for oil extraction; excludes freshwater fish caught in Queensland, particulars of which are not available. (c) Excludes pipis, particulars of which are not available for publication. (d) Western Australia, season ended December, 1960; Queensland and Northern Territory, season ended January, 1961. (e) Excludes 860,000 lb. of pearl-shell taken by Japanese pearl-ers operating in Australian waters. Shell taken by Queensland luggers operating in Northern Territory waters is included in Queensland.

In the table below, corresponding particulars are shown for the years 1956-57 to 1960-61.

**FISHERIES PRODUCTION : QUANTITY AND GROSS VALUE OF CATCH,  
AUSTRALIA.**

Particulars.	Unit.	1956-57.	1957-58.	1958-59.	1959-60.	1960-61.
<b>Fish(a)—</b>						
Estimated Live Weight .. ..	'000 lb.	75,379	71,973	74,383	78,097	79,097
Gross Value .. ..	£'000.	5,711	5,228	5,294	5,851	5,934
<b>Crustaceans—</b>						
Gross Weight .. ..	'000 lb.	24,815	27,504	33,971	36,816	34,810
Gross Value .. ..	£'000.	3,284	3,772	4,585	5,561	5,837
<b>Molluscs(b)—</b>						
Gross (in-shell) Weight .. ..	'000 lb.	17,444	14,905	17,955	19,204	21,808
Gross Value .. ..	£'000.	861	825	1,037	1,089	1,183
<b>Pearl-shell(c)—</b>						
Weight .. ..	'000 lb.	3,724	4,102	2,890	2,408	3,313
Gross Value .. ..	£'000.	1,006	995	561	558	724
<b>Trochus-shell—</b>						
Weight .. ..	'000 lb.	1,911	1,229	916	869	319
Gross Value .. ..	£'000.	357	184	106	78	27

(a) Includes quantity and value of shark livers for oil extraction; excludes freshwater fish caught in Queensland in 1960-61 particulars of which are not available. (b) Excludes pipis in New South Wales for all years, scallops in Western Australia and oysters in Northern Territory for years prior to 1960-61, and oysters in Western Australia for years prior to 1959-60. (c) Excludes pearl-shell taken by Japanese pearl-ers operating in Australian waters. For particulars of quantities taken by these pearl-ers see footnote (e) to table on page 1030.

2. Fish.—The development of Australian fisheries proper has almost invariably occurred in the same sequence at each centre. The earliest fisheries were on-shore, followed by demersal reef fishing using long lines. Trawling operations then followed line fishing in suitable areas, and more recently the exploitation of pelagic fisheries has commenced.

The first major development of the demersal fishing industry came with the institution of trawling operations off the New South Wales coast in 1918, firstly by the New South Wales Government and later by private enterprise, and the fleet of vessels rapidly expanded. In recent years, the number of Danish seine vessels has continued to increase, particularly after the introduction of an improved multi-purpose type of vessel which can be used for tuna fishing as well as for seine trawling. Although steam trawlers based in Sydney formed an important part of the fleet in earlier years, only one boat of this type is still operating. A large diesel-powered trawler, based on Adelaide, now operates in the Great Australian Bight.\* Since 1930, fishing for school and gummy shark has rapidly extended its area of operations, particularly off the Victorian and Tasmanian coasts. A great impetus was given to this fishery during the war by the demand for livers for fish oil production for medicinal purposes. This demand, however, eased with the return of cod-liver oil and availability of synthetic vitamin "A".

As far as pelagic fisheries are concerned, the growth of the Australian tuna fishing industry has been substantial in recent years. Prior to 1959-60, mullet, shark and Australian salmon were the species of fish taken in greatest quantities. After the introduction of the pole fishing method in 1950, however, the catch of tuna increased considerably and by 1959-60 the tuna industry had grown to such an extent that the total catch at 9.8 million lb. estimated live weight was in excess of shark (7.6 million lb.) and Australian salmon (6.6 million lb.) thus placing the size of the catch second to that of mullet. Practically all the tuna catch was canned.

The demand justifying an increased production of other pelagic fish, such as pilchards, sprats, jack mackerel and anchovies, has not been as encouraging as that for tuna. With pilchards caught in southern waters of Australia and sprats taken in Tasmanian waters, there is usually some difficulty in finding a market. Considerable quantities of young jack mackerel, taken off the east coast of Tasmania and off Eden in New South Wales, are used as bait in tuna fishing. Anchovies caught by Victorian fishermen are used for manufacturing fish paste.

In the following table, total Australian recorded production of the main types of fish caught is shown by States in terms of estimated live weight for the year 1960-61.

\* This trawler has since been sold, because catches were not large enough to justify continuance of trawling in that area.

**FISH: PRODUCTION BY TYPE, 1960-61.**  
(\*000 lb. estimated live weight.)

Type.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	N.T.	Aust.
<b>Marine Types—</b>								
Mullet .. ..	5,937	710	2,712	612	1,375	12	4	11,362
Tuna .. ..	4,727	33	8	4,961	26	9	3	9,767
Shark .. ..	1,512	(a)2,974	39	1,682	459	(a) 969	1	7,636
Australian Salmon	1,538	1,050	..	740	2,101	1,201	..	6,630
Barracouta .. ..	3	5,154	..	..	(b)	824	..	5,981
Flathead .. ..	3,026	1,880	140	..	21	74	(b)	5,141
Snapper .. ..	1,903	132	93	571	1,985	..	..	4,684
Whiting .. ..	293	537	441	1,475	521	..	(b)	3,267
Leatherjacket .. ..	2,434	33	(b)	..	49	(b)	..	2,516
Morwong .. ..	1,827	138	..	286	2	5	..	2,258
Mackerel .. ..	224	..	1,408	..	145	1	1	1,779
Tailor .. ..	407	..	871	..	129	..	..	1,407
Garfish .. ..	190	310	94	585	79	56	1	1,315
Ruff .. ..	..	6	..	365	917	..	..	1,288
Bream .. ..	635	225	217	65	93	(b)	1	1,236
Luderick .. ..	1,046	39	11	..	..	..	..	1,096
Other .. ..	3,797	1,321	1,387	1,415	1,582	210	425	10,137
<b>Total Marine</b> .. ..	<b>29,499</b>	<b>a 14,542</b>	<b>7,421</b>	<b>12,757</b>	<b>9,484</b>	<b>(a)3,361</b>	<b>436</b>	<b>77,500</b>
<b>Freshwater Types</b> .. ..	<b>767</b>	<b>230</b>	<b>(c)</b>	<b>600</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>(d)1,597</b>
<b>Total</b> .. ..	<b>30,266</b>	<b>a 14,772</b>	<b>7,421</b>	<b>13,357</b>	<b>9,484</b>	<b>(a)3,361</b>	<b>436</b>	<b>d 79,097</b>

(a) 1,040,000 lb. taken by Victorian fishermen in Tasmanian waters is included in Victoria.  
 (b) Less than 500 lb. (c) Not available. (d) Excludes freshwater fish caught in Queensland, particulars of which are not available.

The production of these more common types of fish is shown in the following table for the years 1956-57 to 1960-61.

**FISH: PRODUCTION BY TYPE, AUSTRALIA.**  
(\*000 lb. estimated live weight.)

Type.	1956-57.	1957-58.	1958-59.	1959-60.	1960-61.
<b>Marine Types—</b>					
Mullet .. ..	11,244	11,566	14,063	12,340	11,362
Tuna .. ..	2,262	3,230	5,493	7,099	9,767
Shark .. ..	8,438	8,241	7,375	8,457	7,636
Australian Salmon	12,164	10,561	8,543	7,601	6,630
Barracouta .. ..	5,468	3,903	4,300	5,871	5,981
Flathead .. ..	5,015	4,108	4,599	4,902	5,141
Snapper .. ..	3,427	3,144	3,115	4,602	4,684
Whiting .. ..	2,680	3,000	2,990	3,297	3,267
Leatherjacket .. ..	1,885	1,658	1,866	2,476	2,516
Morwong .. ..	3,895	3,103	2,572	2,329	2,258
Mackerel .. ..	1,492	1,734	2,193	1,641	1,779
Tailor .. ..	1,185	894	845	1,199	1,407
Garfish .. ..	1,633	1,139	1,079	1,024	1,315
Ruff .. ..	1,918	1,563	1,860	1,506	1,288
Bream .. ..	982	1,064	1,207	1,123	1,236
Luderick .. ..	897	1,025	1,063	1,199	1,096
Other .. ..	8,960	9,815	8,927	9,819	10,137
<b>Total Marine</b> .. ..	<b>73,545</b>	<b>69,748</b>	<b>72,090</b>	<b>76,485</b>	<b>77,500</b>
<b>Freshwater Types</b> .. ..	<b>1,834</b>	<b>2,225</b>	<b>2,293</b>	<b>1,612</b>	<b>(a) 1,597</b>
<b>Total</b> .. ..	<b>75,379</b>	<b>71,973</b>	<b>74,383</b>	<b>78,097</b>	<b>(a) 79,097</b>

(a) Excludes freshwater fish caught in Queensland, particulars of which are not available.

Total production of fish by States for the years 1956-57 to 1960-61 is shown in the following table.

## FISH: PRODUCTION.

('000 lb. estimated live weight.)

State or Territory.	1956-57.	1957-58	1958-59.	1959-60.	1960-61.
New South Wales .. ..	28,992	27,926	29,632	29,716	30,266
Victoria(a) .. ..	14,112	13,305	11,685	15,397	14,772
Queensland .. ..	9,447	9,034	9,930	8,218 (b)	7,421
South Australia .. ..	9,688	9,591	9,990	11,006	13,357
Western Australia .. ..	9,545	9,783	10,114	10,255	9,484
Tasmania(a) .. ..	3,416	2,174	2,797	3,173	3,361
Northern Territory .. ..	179	160	235	332	436
<b>Australia .. ..</b>	<b>75,379</b>	<b>71,973</b>	<b>74,383</b>	<b>78,097</b>	<b>79,097</b>

(a) Catch by Victorian fishermen in Tasmanian waters is included in Victoria. (b) Excludes freshwater fish, particulars of which are not available.

3. Crustaceans.—In terms of gross value of catch, the importance of crustaceans has increased in recent years, and in 1960-61 was nearly equal to that of fish. The crayfish, which is caught in pots or traps in all States, is the most important crustacean. Crayfish fisheries have been developed greatly since the 1939-45 War in order to take advantage of the market in the United States of America for frozen crayfish tails. The total catch increased from approximately 3 million lb. in 1945-46 to more than 27 million lb. in 1960-61. Of the total catch in 1960-61, Western Australia produced about 66 per cent.

Prawns are taken by otter trawl, mainly in Queensland and New South Wales. In 1960-61, Queensland accounted for 54 per cent. of the total catch and New South Wales for 45 per cent.

Approximately three-quarters of Australia's production of crabs is taken from Queensland waters, and nearly all the remainder is caught in New South Wales.

Commercial lobster production, apart from the Queensland shovel-nosed lobster, which is scientifically classified as a crayfish, is restricted to a single freshwater species, *Euaestacus serratus*, from some New South Wales streams.

Details of the production of crustaceans are shown by States in the table below on a whole weight basis for the year 1960-61.

## CRUSTACEANS: PRODUCTION BY TYPE, 1960-61.

('000 lb. whole weight.)

Type.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Aust.
Crayfish .. (a)	476	(b) 2,070	(c) 41	3,721	18,019	(b) 3,167	27,494
Prawns ..	2,916	7	3,500	..	106	..	6,529
Crabs ..	144	..	595	..	48	..	787
<b>Total ..</b>	<b>3,536</b>	<b>(b) 2,077</b>	<b>4,136</b>	<b>3,721</b>	<b>18,173</b>	<b>(b) 3,167</b>	<b>34,810</b>

(a) Includes catch of freshwater lobster (9,000 lb. in 1960-61). (b) The catch of crayfish by Victorian fishermen in Tasmanian waters (804,000 lb. in 1960-61) is included in Victoria. (c) For years prior to 1960-61, the catch was made up entirely of shovel-nosed lobster (*Thenus orientalis*). In 1960-61, the catch was made up of crayfish, 26,000 lb., and shovel-nosed lobster, 15,000 lb.

The following table contains details of production of crustaceans in Australia for the years 1956-57 to 1960-61.

**CRUSTACEANS: PRODUCTION BY TYPE, AUSTRALIA.**

(<sup>'</sup>000 lb. whole weight.)

Type.	1956-57.	1957-58.	1958-59.	1959-60.	1960-61.
Crayfish(a) .. ..	18,905	21,991	26,314	28,023	27,494
Prawns .. .. .	5,075	4,687	6,751	7,749	6,529
Crabs .. .. .	835	826	906	1,044	787
<b>Total .. .. .</b>	<b>24,815</b>	<b>27,504</b>	<b>33,971</b>	<b>36,816</b>	<b>34,810</b>

(a) Includes freshwater lobster caught in New South Wales.

4. **Molluscs (edible).**—Initially the Australian oyster fisheries depended solely upon the harvesting of naturally grown stock in littoral and submarine areas. However, the stocks soon deteriorated and attention was turned to methods of cultivation. Commercial oyster farming is carried on mainly in New South Wales, where there has been constant improvement in methods and the present technique in certain areas is highly efficient. In 1960-61, New South Wales provided more than 93 per cent. of the Australian production.

Scallops are taken by dredge in Tasmanian waters and by trawl in Queensland waters. Tasmania is the principal producing State and in 1960-61 contributed 77 per cent. of the recorded Australian production.

Of the other molluscs taken, squid is the most important. Smaller quantities of cuttlefish, octopus, mussels, abalone and pipi have been taken from time to time.

Details of the production of molluscs are shown by States in the table below on a gross (in-shell) weight basis for the year 1960-61.

**MOLLUSCS: PRODUCTION BY TYPE, 1960-61.**

(<sup>'</sup>000 lb. gross (in-shell) weight.)

Type.	N.S.W.	Victoria.	Queensland.	Western Australia.	Tasmania.	Australia.
Oysters .. .. .	13,296	162	242	515	5	14,220
Scallops .. .. .	..	..	1,600	..	5,296	6,896
Squid .. .. .	..	141	67	20	..	228
Cuttlefish .. .. .	..	..	..	34	..	34
Octopus .. .. .	..	22	..	14	..	36
Pipis .. .. .	(a)	..	..	..	..	(a)
Mussels .. .. .	..	394	..	..	..	394
<b>Total .. .. .</b>	<b>(b) 13,296</b>	<b>719</b>	<b>1,909</b>	<b>583</b>	<b>5,301</b>	<b>(b) 21,808</b>

(a) Not available for publication.

(b) Excludes pipi production in New South Wales.



The table below shows details of the total production of edible molluscs in Australia for the years 1956-57 to 1960-61.

## MOLLUSCS: PRODUCTION BY TYPE, AUSTRALIA.

('000 lb. gross (in-shell) weight.)

Type.	1956-57.	1957-58.	1958-59.	1959-60.	1960-61.
Oysters .. ..	(a) 10,264	(a) 10,562	(b) 12,885	(c) 12,690	14,220
Scallops .. ..	7,074	(a) 4,207	(a) 4,786	(a) 6,105	6,896
Squid .. ..	106	134	225	210	228
Cuttlefish .. ..	..	..	57	60	34
Octopus .. ..	..	..	2	52	36
Abalone .. ..	..	2	..	..	..
Pipis .. ..	(d)	(d)	(d)	(d)	(d)
Mussels .. ..	..	..	..	87	394
<b>Total(e)</b> .. ..	<b>17,444</b>	<b>14,905</b>	<b>17,955</b>	<b>19,204</b>	<b>21,808</b>

(a) Excludes Western Australia.  
(c) Excludes Northern Territory.  
notes to individual types.

(b) Excludes Western Australia and Northern Territory.  
(d) Not available for publication. (e) Incomplete; see

5. Pearl-shell and Trochus-shell.—Pearl-shell and trochus-shell are taken from tropical waters of Australia, mostly during the period from April to January. In Western Australia, annual production is recorded for the year ended December, while in Queensland and Northern Territory the annual production is recorded for the year ended January. Statistics in this chapter are these annual production figures related to the financial year ending 30th June following the close of the season.

Australia's pearling industry, which ceased operations on Japan's entry into the war in December, 1941, was faced at the end of hostilities not only with a shortage of ships and gear but also with the scarcity of expert labour, particularly divers. Before the war, a large proportion of the key men were Japanese; others included Malays, Chinese, Koepangers, Filipinos, Papuans and Torres Strait Islanders. The Commonwealth Government, with the view of overcoming this shortage, permitted in 1953 the employment of 35 Japanese divers, tenders and engineers in Australian luggers. At 31st January, 1961, the number of Japanese, employed mainly in Western Australia and in the Northern Territory, was 126, out of a total number of 995 employed in the industry. Queensland, with a more ready source of labour from Torres Strait Islands, was able to expand its fishing more rapidly, and in the 1949 season achieved its highest post-war production of 1,191 tons. At 31st January, 1961, Queensland pearl-ers employed 487 Torres Strait Islanders in its total personnel of 654. Torres Strait Islanders therefore represented almost half of the total number of 995 employed in the Australian pearl-fishing industry at that date.

Australia's pearl-fishing takes place offshore to the 25 fathom line. In September, 1953, following the arrival of a Japanese pearl-fishing fleet in Australian waters, the Commonwealth Pearl Fisheries Act 1952-1953 was brought into operation. This Act aims at the management of the pearl-shell resources in accord with Australia's proclamation of sovereign rights over the natural resources of the sea bed and subsoil to the 100 fathom line. Japan disputed Australia's right to apply this legislation to foreign ships, and Australia agreed to refer the dispute to the International Court of Justice on condition that meanwhile Japanese pearling in Australian waters would be conducted in conformity with the Australian Government's policy of regulation and conservation, and that Japan would abide by the Court's decision. On these conditions, a Japanese pearling fleet has operated in prescribed waters since 1954. No pronouncement has yet been made by the International Court of Justice on the dispute.

In 1960-61, Australian production of pearl-shell and trochus-shell was 3,313,000 lb. and 319,000 lb. respectively. In addition, Japanese pearl-ers took 860,000 lb. of pearl-shell from Australian waters, but as this was not landed in Australian ports it is not regarded as Australian production. The seasons of highest recorded production of pearl-shell have been—Queensland, 3,200,000 lb. in 1929; Western Australia, 4,480,000 lb. in 1917; and Northern Territory, 1,800,000 lb. in 1937.

In the following table, particulars of the quantity of pearl-shell and trochus-shell produced are shown for the years 1956-57 to 1960-61.

**PEARL-SHELL AND TROCHUS-SHELL: PRODUCTION.**

(<sup>0</sup>000 lb.)

Particulars.	1956-57.	1957-58.	1958-59.	1959-60.	1960-61.
Pearl-shell(a)—					
Queensland(b) .. ..	1,127	1,131	889	1,082	1,821
Western Australia(c) ..	2,012	2,218	1,687	1,138	1,270
Northern Territory(b) ..	585	753	314	188	222
Australia .. ..	<b>3,724</b>	<b>4,102</b>	<b>2,890</b>	<b>2,408</b>	<b>3,313</b>
Trochus-shell—					
Queensland(b) .. ..	1,900	1,207	887	847	309
Western Australia(c) ..	11	22	29	22	10
Australia .. ..	<b>1,911</b>	<b>1,229</b>	<b>916</b>	<b>869</b>	<b>319</b>

(a) Excludes pearl-shell taken by Japanese pearl-ers operating in Australian waters. The quantities taken were as follows:—1956-57, 1,458,000 lb.; 1957-58, 1,572,000 lb.; 1958-59, 1,064,000 lb.; 1959-60 763,000 lb.; 1960-61, 860,000 lb. (b) Season ended January of years shown. Shell taken by Queensland luggers operating in Northern Territory waters is included in Queensland. (c) Season ended December of years shown.

Complete particulars are not available of the production of natural pearls in Australia.

In 1956, the production of cultured pearls was introduced into Australia, with the establishment of a station at Augustus Island, off the northern coast of Western Australia. This station was later moved to Kuri Bay (Brecknock Harbour). This station, 130 miles north-east of Derby, produced its first crop of high quality pearls in 1958. Following the success of the operations at Kuri Bay, four culture farms have commenced operations in Queensland and one in Western Australia. Particulars of the production of cultured pearls are not available for publication.

Exports of pearls from Australia were valued at £158,000 in 1960-61, including cultured, £67,000.

#### § 4. Marketing and Distribution of Fish.

Most of the fish taken in Australian waters is sold in the metropolitan markets, although many of the fisheries are considerably distant from these centres. The arrangements for marketing of fresh fish vary from State to State, and in some cases the State Government exercises a certain amount of control.

In New South Wales, marketing of fish is controlled by the Chief Secretary. The bulk of the State's catch is sold through the Sydney market, owned by municipal authorities but controlled by the Chief Secretary. A small branch market operates in Wollongong, and the eighteen fishermen's co-operatives market fish in their own regions also. By law, all fish for human consumption must be sold through a recognized market (i.e. Sydney, Wollongong or the co-operatives), unless ministerial consent for direct sale to consumers has been obtained.

In Victoria, there are no fish marketing regulations, and most of the catch, as well as considerable quantities of interstate fish, is sold by agents at the main Melbourne market, owned and controlled by the City of Melbourne. In addition, the fishermen's co-operatives engage in the wholesale and retail sale of fish within their own areas.

In Queensland, the Government Fish Board controls all marketing and, in addition to the main Brisbane market, regulates the sale of fish through eighteen coastal markets and eight agencies extending along the coast from Southport to Port Douglas.

In South Australia, the Adelaide city fish market, the only one in the State, is owned and operated by the South Australian Fishermen's Co-operative. Of the total State catch, approximately 80 per cent. is handled by the co-operative, the balance being sold privately either to local or to interstate fish agents.

In Western Australia, the Perth market is established as a government instrumentality, but handles only a portion of the fish offered for sale in the main metropolitan area. Besides this, there are two other markets in Fremantle. One is conducted by the local fishermen's co-operative and the other by a private concern. Both are erected on land leased from the Crown. Outside the main metropolitan area, marketing is conducted on a more or less private basis.

In Tasmania, there is no established market, and the sale of fish is conducted on a private basis with fish agents playing a considerable part in the disposal of fish locally and to the mainland.

§ 5. Freezing, Processing and By-products.

1. Freezing.—Cold storage facilities, which were rather inadequate in the past, have in most States been improved and increased in recent years. In Queensland and New South Wales particularly, most depots which have been established at fishing ports have now been equipped with cold storage space. In several States, there has been a development of establishments equipped for snap freezing of fish, in particular the freezing of crayfish tails, prawns and scallops for export. In Western Australia, 41 vessels have been equipped with freezing plants to process crayfish at sea.

2. Processing.—The attempt to establish the fish preserving industry at the commencement of this century met with little success, although a bounty was paid to encourage production. The industry, however, continued to operate, but there was no marked development until after the 1939-45 War. Production of canned fish in 1960-61 was 8,212,000 lb.

In addition to the fish canned in 1960-61, 252,000 lb. of smoked fish, 1,193,000 lb. of fish paste, more than 7,500,000 lb. of frozen crayfish tails and whole cooked crayfish for export, and a considerable quantity of quick-frozen fish for the local market were produced.

In 1939, New South Wales and Tasmania were the only States canning fish, but the industry has since been extended to Victoria, South Australia and Western Australia. Details of production are given in the following table for the years 1956-57 to 1960-61.

FISH PROCESSING (EXCEPT FREEZING): AUSTRALIA.  
(‘000 lb.)

Particulars.	1956-57.	1957-58.	1958-59.	1959-60.	1960-61.
Number of Factories .. ..	13	14	18	19	18
Fish Used (a)—					
Whole .. .. .	8,072	9,293	10,603	12,507	15,211
Headed and/or Gutted .. ..	7,356	5,600	4,825	3,773	3,758
Estimated Live Weight Equivalent (b) .. .. .	16,700	15,900	16,300	16,900	19,600
Production—					
Canned Fish (c)—					
Australian Salmon .. .. .	(d)	5,198	4,756	4,559	3,480
Tuna .. .. .	(d)	1,300	1,609	1,986	3,070
Other .. .. .	(d)	1,358	1,418	1,573	1,647
Total .. .. .	8,268	7,856	7,783	8,118	8,197
Canned Oysters and Clams .. ..	(e)	(e)	(e)	(e)	(e)
Canned Prawns .. .. .	(e)	(e)	(e)	(e)	(e)
Canned Lobsters (incl. Crayfish) ..	(e)	(e)	(e)	(e)	(e)
Smoked Fish .. .. .	487	439	286	296	301
Fish Paste .. .. .	1,266	1,700	1,314	1,379	1,261
Fish Meal(f) .. .. .	1,840	1,294	1,442	1,718	2,041

(a) Fish used for canning (including fish loaf), smoking and the manufacture of fish paste, but excluding the weight of oysters, other shellfish and crustaceans used for canning. (b) The weight of headed and/or gutted fish is taken as 85 per cent. of live weight. (c) Includes fish loaf, fish cakes, etc. (d) Not available. (e) Not available for publication. (f) Excludes whale meal.

The varieties canned in the several States differ according to the species caught, but complete details for each variety are not available. Tuna is the principal variety canned in New South Wales and South Australia, while barracouta is of major importance in Victoria and Tasmania. The greater proportion of fish canned in Western Australia is Australian salmon.

3. **By-products.**—Processing of offal for fish-meal, etc., has been established in certain States. The processing of livers for vitamin-rich oils was undertaken in several States but, as mentioned in § 3, para. 2, page 1031, production has fallen to a low level in recent years.

### § 6. Consumption of Fish.

Particulars of the estimated supplies of fish, crustaceans and molluscs available for consumption per head of population, in terms of edible weight, are included in the table below for the years 1956–57 to 1960–61. For the purpose of compiling this table, the non-commercial fish catch has been estimated at ten per cent. of the recorded catch.

#### ESTIMATED SUPPLIES OF FISHERIES PRODUCTS AVAILABLE FOR CONSUMPTION: AUSTRALIA.

(lb. edible weight per head per annum.)

Particulars.	1956–57.	1957–58.	1958–59.	1959–60.	1960–61.
<b>Fresh or Frozen—</b>					
<b>Fish—</b>					
Australian Origin .. ..	3.3	3.1	3.1	3.2	3.1
Imported .. ..	1.8	2.1	2.2	3.2	3.0
Crustaceans and Molluscs .. ..	0.9	0.8	0.9	1.0	1.2
Cured (incl. Smoked and Salted) .. ..	0.5	1.3	0.8	1.1	1.1
<b>Canned—</b>					
Australian Origin .. ..	0.8	0.7	0.8	0.8	0.7
Imported .. ..	1.7	1.8	1.7	2.0	2.6
<b>Total .. ..</b>	<b>9.0</b>	<b>9.8</b>	<b>9.5</b>	<b>11.3</b>	<b>11.7</b>

### § 7. Boats and Equipment.

The boats used for the inshore and estuary fisheries are mostly small vessels propelled by diesel or petrol engines of low power. The fishing gear used includes mesh nets, beach seines, various types of pots and traps, trolling and hand lines, and small otter type prawn trawls. The offshore vessels range in length from 30 feet to approximately 100 feet, and are almost invariably powered by diesel engines. Many of them have insulated holds to carry fish in ice, while some of the crayfish boats are fitted with wells in which the catch is kept alive. Other vessels have dry or brine refrigeration.

Almost every type of fishing equipment is used. This includes otter trawls for fish and prawns, Danish seines, beach seines for Australian salmon, mullet and other species, beehive type pots for crayfish, traps for crayfish and reef fish, long lines for fish and edible shark, and trolling gear for pelagic fishes including spanish mackerel, barracouta and the tunas. Most of the tuna is now taken by the live bait pole fishing method, the bait fish generally being caught with a lampara net, although several of the larger vessels have employed small purse seine or ring nets very successfully for this purpose in recent years.

The following two tables show details of the number of boats, value of boats and equipment, and number of persons employed in the taking of fish, crustaceans, molluscs (edible), pearl-shell and trochus-shell, together with some other particulars of oyster fisheries. These details have been compiled from information supplied for licensing purposes.

It should be noted that the data shown are not comparable between States. In some States, besides professional full-time fishermen, amateur part-time fishermen are licensed and the figures shown are overstated to this extent. These data should not be used as a guide to the relative effort applied in obtaining the recorded catch. Figures for 1959-60 and 1960-61 are not all comparable with those for previous years for the following reasons: in Queensland, numbers of men employed and boats engaged now refer only to those licensed to take fish for sale, whereas previously all licensed men and boats were included; in South Australia, the value of boats and equipment has been adjusted upward compared with previous years.

**FISHERIES: BOATS AND EQUIPMENT IN USE AND PERSONS ENGAGED, ETC.,  
1960-61.**

Particulars.	Unit.	N.S.W.	Vic.	Qld.	S.A.	W.A. (a)	Tas.	N.T.	Aust.
<b>General Fisheries (b)(c)—</b>									
Boats Engaged ..	No.	2,359	714	1,476	1,650	1,053	477	27	7,756
Value of Boats and Equipment ..	£'000.	2,857	1,427	1,908	1,700	3,440	1,060	19	12,411
Persons Engaged ..	No.	2,327	993	2,126	6,452	1,923	1,070	64	14,955
<b>Edible Oyster Fisheries—</b>									
Boats Engaged ..	No.	1,398	9	38	..	3	1	..	1,449
Value of Boats and Equipment ..	£'000.	379	15	14	..	4	(e)	..	412
Persons Engaged ..	No.	712	9	89	..	10	2	..	822
Leases Granted ..	..	4,859	5	221	..	..	..	..	5,085
Length of Foreshore in Leases ..	'000 yds.	904	16	(f)	..	..	..	..	(g) 920
Area of Offshore Leases	Acres.	6,051	..	..	..	..	..	..	6,051
<b>Pearl, Pearl-shell and Trochus-shell Fisheries (h)—</b>									
Boats Engaged ..	No.	..	..	53	..	27	..	5	85
Value of Boats and Equipment ..	£'000.	..	..	286	..	151	..	30	467
Persons Engaged ..	No.	..	..	654	..	302	..	39	995
<b>Total. All Fisheries(c)—</b>									
Boats Engaged ..	No.	3,757	723	1,567	1,650	1,083	478	32	9,290
Value of Boats and Equipment ..	£'000.	3,236	1,442	2,208	1,700	3,595	1,060	49	13,290
Persons Engaged ..	No.	3,039	1,002	2,869	6,452	2,235	1,072	103	16,772

(a) Year ended 31st December, 1960. (b) Excludes edible oyster fisheries but includes crustacean and other mollusc fisheries. (c) See text above referring to comparison with years prior to 1939-60. (d) Includes licensed amateur fishermen. (e) Less than £500. (f) Not available (g) Excludes Queensland. (h) Excludes Japanese pearling fleet which operated in Australian waters.

**FISHERIES: BOATS AND EQUIPMENT IN USE AND PERSONS ENGAGED, ETC.:  
AUSTRALIA.**

Particulars.	Unit.	1956-57.	1957-58.	1958-59.	1959-60.	1960-61.
<b>General Fisheries(a)—</b>						
Boats Engaged .. .. .	No.	10,471	10,237	10,135	(b)7,890	(b) 7,756
Value of Boats and Equipment .. .. .	£'000.	7,039	7,476	8,344	b 10,762	(b)12,411
Persons Engaged .. .. .	No.	21,702	20,871	21,015	b 13,319	(b)14,955
<b>Edible Oyster Fisheries(c)—</b>						
Boats Engaged .. .. .	No.	1,031	1,070	1,122	1,213	1,449
Value of Boats and Equipment .. .. .	£'000.	164	171	(d) 377	368	412
Persons Engaged .. .. .	No.	870	909	812	917	822
Leases Granted .. .. .	"	5,452	5,042	4,965	4,897	5,085
Length of Foreshore in Leases(e) .. .. .	'000 yds.	970	893	867	860	920
Area of Offshore Leases ..	Acres.	6,037	5,415	5,508	5,537	6,051
<b>Pearl, Pearl-shell and Trochus-shell Fisheries(f)</b>						
Boats Engaged .. .. .	No.	150	151	110	85	85
Value of Boats and Equipment .. .. .	£'000.	826	790	647	515	467
Persons Engaged .. .. .	No.	1,742	1,487	1,419	1,120	995
<b>Total, All Fisheries(f)(g)—</b>						
Boats Engaged .. .. .	No.	11,652	11,458	11,367	9,188	9,290
Value of Boats and Equipment .. .. .	£'000.	8,029	8,437	9,368	11,645	13,290
Persons Engaged .. .. .	No.	24,314	23,267	23,246	15,356	16,772

(a) Excludes edible oyster fisheries, except in Tasmania for years prior to 1959-60, but includes crustacean and other mollusc fisheries. (b) Figures not comparable with those for previous years. See text preceding table on page 1039. (c) Excludes particulars for Western Australia and Tasmania for years prior to 1959-60 and for Northern Territory for all years except 1960-61. (d) Figures for years prior to 1958-59 exclude the value of stakes, timber frames, etc., used on oyster leases in New South Wales. (e) Excludes Queensland. (f) Excludes Japanese pearling fleet which operated in Australian waters. (g) Excludes particulars of edible oyster fisheries for Western Australia and Tasmania for years prior to 1959-60 and for Northern Territory for all years except 1960-61.

### § 8. Whaling.

The whaling industry was re-established in Australia in 1949, operations being carried out from shore-based stations. In that year, a station began operating at Point Cloates, Western Australia. The Australian Whaling Commission, established in 1949, built a station at Babbage Island near Carnarvon, Western Australia, and began operations towards the end of the 1950 season. In 1956, legislation was passed to dissolve the Commission and its assets were sold to the private company operating at Point Cloates. The operations of this company were transferred to Babbage Island and the Point Cloates station was closed in 1956. Other stations commenced operations in the following years: Cheynes Beach, near Albany (Western Australia), in 1952, Moreton Bay (Queensland) in 1952, Byron Bay (New South Wales) in 1954, and Norfolk Island in 1956.

Each of the stations operating is allowed a quota (in terms of humpback whales) determined by the Minister for Primary Industry, acting on the advice of the Secretary of the Department of Primary Industry, who represents Australia on the International Whaling Commission. This catch quota, which may not be exceeded, was introduced in Australia in 1951 and aims at conserving the stock of whales to enable the industry to continue on a stable basis.

Sperm whaling, which commenced in 1955 on an exploratory basis, is still being carried out on the Western Australian coast, but the catch of this species is not subject to the quotas determined.

There is no prescribed season for sperm whaling, but other details shown in the following table relate to seasons extending from 1st May to 31st October of each year.

### WHALING STATISTICS: AUSTRALIA AND NORFOLK ISLAND.

(Source: Fisheries Division, Department of Primary Industry.)

Particulars.	Unit.	1957.	1958.	1959.	1960.	1961.
Seasonal Quota(a) .. ..	No.	1,960	1,960	2,080	1,850	1,560
Whales Taken and Processed(a)	"	(b)1,961	(c)1,812	(d)1,673	(e)1,530	1,482
Average Length of Whales Processed(f) .. ..	ft.	40.7	40.8	40.3	40.3	38.7
Average Production of Oil per Whale(f) .. ..	Barrel(g)	52.5	54.1	52.3	51.3	45.0
Persons Employed—						
At Sea(h) .. ..	No.	140	157	165	155	175
Ashore(h) .. ..	"	431	440	468	445	(f) 260
Whale Oil Produced—Quantity(f) .. ..	Barrel(g)	102,966	97,698	88,415	78,378	66,675
Whale Products—Value(f) ..	£'000.	2,205	1,866	1,727	1,453	1,304

(a) In terms of humpback whales. For quota purposes, 1 blue whale is taken as equivalent of 2 fin, 2½ humpback, 6 sei or 6 bryde whales. Sperm whales are not subject to quota restrictions. (b) Includes 1 humpback whale taken on special permit. (c) Includes 2 blue whales and 3 bryde whales. (d) Includes 12 blue whales and 1 fin whale. (e) Includes 2 blue whales. (f) Excludes sperm whales, particulars of which are not available for publication. (g) 6 barrels = 1 ton. (h) Estimated. (i) Personnel employed at the beginning of the season were considerably reduced as the season progressed.

## § 9. Inquiries and Research.

1. General.—Research into the Australian fishing industry has been directed mainly towards seeking an explanation of the very slow rate of development and the conditions prevailing within the industry, as well as the paucity of supplies available to the public. Details of the inquiries undertaken and the recommendations arising from them are given in Official Year Book No. 38, page 1082, and subsequent developments are outlined below.

2. **Commonwealth Scientific and Industrial Research Organization, Division of Fisheries and Oceanography.**—The work of this Division was referred to in earlier issues of the Official Year Book (*see* No. 47, p. 1029).

3. **Fisheries Division, Department of Primary Industry.**—The creation of the Fisheries Division of the Department of Primary Industry arose from a Tariff Board recommendation in 1941. Details of the establishment, organization and functions of the division, which was formerly known as the Commonwealth Fisheries Office, are given in Official Year Book No. 38, page 1084.

In accordance with the Tariff Board report, scientific research, as distinct from developmental and administrative functions, was left to the Commonwealth Scientific and Industrial Research Organization, which had established a Division of Fisheries for this purpose in 1937.

The Fisheries Division of the Department of Primary Industry is responsible for the development and administration of all forms of fishing in extra-territorial waters, commercial development of fisheries, management of marine resources (fishing, pearling and whaling), co-ordination of conservation measures imposed by the States and the Commonwealth, economic research statistics, and negotiations with foreign nations on fisheries matters, information and extensions.

4. **Fisheries Development Trust Account.**—In early 1956, the assets of the Australian Whaling Commission, an authority set up by the Commonwealth Government in 1949, were sold to private interests. The finance derived from the sale, authorized by the Fishing Industry Act 1956, was paid into a fund, known as the Fisheries Development Trust Account. Provision was made in the Act for the moneys to be used for the purposes of developing the fishing industry through research, direct financial assistance, the development of particular fisheries, training schemes, and the dissemination of information and advice through various publications and the press.

An Advisory Committee on fisheries development was formed to advise the Minister on specific projects for fisheries development. Projects which have so far been approved following recommendations by this committee include:—the purchase of a modern diesel trawler to investigate the commercial potentialities of trawling in the Great Australian Bight; a survey of the prawn resources off the east coast of Australia; a survey of the pilchard resources off the New South Wales coast; a barracouta survey in Bass Strait; a crayfish survey off the south coast of Western Australia; a tuna survey in Western Australian waters and a training school for fisheries field officers.

5. **North Australia Development Committee.**—Reference to the North Australia Development Committee was made in previous issues of the Official Year Book (*see* No. 47, p. 1030).

## § 10. Oversea Trade in Products of Fishing and Whaling.

1. **Imports of Fish.**—The value of edible fish and fish products imported in 1960–61 amounted to £9,693,000 compared with £8,047,000 in 1959–60.

Of the total quantity of 34.6 million lb. of fresh and frozen fish imported in 1960–61, South Africa contributed 12.9 million lb., United Kingdom 6.8 million lb., New Zealand 5.8 million lb., and Denmark 4.1 million lb. A quantity of 27.5 million lb. of canned fish and fish products was imported in 1960–61, and of this 9.0 million lb. originated in Japan, 6.9 million lb. in the United Kingdom and 4.2 million lb. in Canada. Particulars of the imports of fish and edible fisheries products are shown below for the years 1958–59 to 1960–61.



## IMPORTS OF FISH, CRUSTACEANS AND MOLLUSCS: AUSTRALIA.

Classification.	Quantity ('000 lb.).			Value (£'000.)		
	1958-59.	1959-60.	1960-61.	1958-59.	1959-60.	1960-61.
Fresh or Frozen(a) .. ..	24,618	35,480	34,594	2,405	3,335	3,423
Smoked or Dried .. ..	6,284	9,206	8,695	491	704	692
Potted or Concentrated(b) .. ..	117	175	361	34	54	131
Canned—						
Herrings .. ..	4,008	5,237	7,427	443	586	821
Salmon .. ..	7,407	8,129	10,398	1,518	1,903	2,775
Sardines and Pilchards .. ..	4,456	6,148	7,598	829	1,058	1,241
Tuna .. ..	62	56	424	12	9	63
Other Fish .. ..	269	310	812	66	71	110
Crustaceans .. ..	449	354	544	171	130	238
Molluscs .. ..	145	179	290	23	40	60
<i>Total Canned</i> .. ..	<i>16,796</i>	<i>20,413</i>	<i>27,493</i>	<i>3,062</i>	<i>3,797</i>	<i>5,308</i>
Fisheries Products, not elsewhere included .. ..	..	..	..	148	157	139
<i>Total Fisheries Products</i> .. ..	..	..	..	<i>6,140</i>	<i>8,047</i>	<i>9,693</i>

(a) Excludes frozen smoked which is included with "Smoked or Dried". (b) Includes extracts and caviare.

2. Exports of Fish.—In 1960-61, exports of items other than crayfish remained at the low levels of earlier years, but crayfish still retained its relative importance, its value representing nearly 92 per cent. of the total value of fish, etc., exports. Nearly all of this was exported to the United States of America.

The following table shows details of the total exports of edible fisheries products (including those produced in other countries) from Australia for the years 1958-59 to 1960-61.

## EXPORTS OF FISH, CRUSTACEANS AND MOLLUSCS: AUSTRALIA.

Particulars.	Quantity ('000 lb.).			Value (£'000.)		
	1958-59.	1959-60.	1960-61.	1958-59.	1959-60.	1960-61.
Fresh or Frozen(a)—						
Crayfish tails .. ..	7,281	7,777	6,023	3,202	3,810	3,400
Crayfish, Whole Cooked .. ..	1,431	806	1,783	367	296	649
Other .. ..			1,773			269
Canned—						
Salmon .. ..	57	39	42	8	10	10
Other Fish .. ..	417	111	156	78	17	21
Crustaceans .. ..	58	73	95	15	23	42
Molluscs .. ..	14	33	6	3	15	3
<i>Total Canned</i> .. ..	<i>546</i>	<i>256</i>	<i>299</i>	<i>104</i>	<i>65</i>	<i>76</i>
Fisheries Products, not elsewhere included .. ..	..	..	..	2	25	4
<i>Total Fisheries Products</i> .. ..	..	..	..	<i>3,675</i>	<i>4,196</i>	<i>4,398</i>

(a) Excludes frozen smoked, which is included with "Fisheries Products, not elsewhere included".

**3. Imports and Exports of Unmanufactured Shell.**—Imports of unmanufactured shell include quantities of pearl, trochus and green snail shell from New Guinea, Papua and the Pacific Islands which are subsequently re-exported from Australia.

Imports of unmanufactured shell for the three years 1958–59 to 1960–61 were, respectively, 227,000 lb. (£44,000); 156,000 lb. (£18,000); and 114,000 lb. (£10,000). Exports during the same years were:—4,312,000 lb. (£832,000); 3,572,000 lb. (£752,000); and 3,629,000 lb. (£717,000). Pearl and trochus shell accounted for most of this, the quantity and value exported in 1960–61 being:—pearl-shell, 3,089,000 lb. (£661,000); trochus-shell, 519,000 lb. (£51,000).

**4. Imports and Exports of Marine Animal Oils.**—Imports of marine animal oils during the three years 1958–59 to 1960–61 were, respectively:—494,000 gals. (£232,000); 588,000 gals. (£266,000); 774,000 gals. (£338,000). Whale oil constituted the major part of these imports.

Of the total quantity of 486,000 gals. of whale oil imported in 1960–61, 348,000 gals. originated in Norfolk Island. Imports of other marine animal oils consisted of 115,000 gals. of cod liver oil, 127,000 gals. of unrefined fish oils and 45,000 gals. of other marine animal oils.

Exports of marine animal oils during the three years 1958–59 to 1960–61, consisting almost entirely of whale oil, amounted to:—3,403,000 gals. (£1,156,000); 3,062,000 gals. (£900,000); 2,304,000 gals. (£885,000). Of the total exports in 1960–61, whale oil accounted for 2,298,000 gallons valued at £865,000.