

CHAPTER XXVI.

FISHERIES.

§ 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 Commonwealth Fisheries Office, a 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 have been collected and supplied by State Fisheries Authorities through the Statisticians of the several States. Statistics have been 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.

In interpreting fisheries production statistics, allowance should be made for incomplete coverage. Returns are collected in most States from licensed professional fishermen only, and as a result the published tables fall short of total fish production to the extent of the catch by amateur fishermen, the commercial catch by persons not licensed as professional fishermen and unrecorded catch by professional fishermen.

Particulars of whaling have been collected and supplied for publication by the Commonwealth Fisheries Office.

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

2. **Presentation of Fisheries Statistics.**—In the preparation of Australian fisheries production statistics, the quantities of individual products are, in the main, 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, has been 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 has been 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 1028.

§ 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, in common with most other countries of the Southern Hemisphere, 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 consumption of fish in Australia per head of population is

small. Consequently, 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 quantities of fish are imported each year.

This apparent paradox 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 frequently been overfished with a consequent diminution of stocks while those species of fish which dwell near the surface of the sea (the pelagic species) have barely been exploited at all.

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. An increase in the supply of fresh fish available to the Australian consumer will therefore require the development of new fishing areas and it appears that the trawling grounds of the Great Australian Bight are the most suitable for development in this regard.

The principal fishing areas at present are the coastal lakes, streams, estuaries and beaches which for the most part are associated with coastal streams. These offshore demersal grounds fall into two classes—(a) the reefs from which cod, snapper, etc., are taken and (b) the grounds from which flathead, morwong, etc., are taken. The reefs extend intermittently from northern Queensland around the southern part of the continent to Shark Bay in Western Australia. 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 in the Great Australian Bight, however, would require large modern trawlers for commercial exploitation.

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.

(ii) *Crustaceans*. Of the crustaceans exploited in Australia, crayfish are the most important and are 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 and South Australian waters, owing to the opening up of markets in the United States of America for frozen crayfish tails. Crabs of various species are found in practically all coastal waters while prawns are taken in the temperate waters of Queensland and New South Wales. Lobsters are caught in the fresh-water 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 in Tasmanian waters only, 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 Cooktown 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*. Whales 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.

2. *Persons Engaged*.—In the following table, which shows particulars collected in the Population Censuses of Australia at 30th June, 1947 and 1954, the numbers of persons whose "industry" was stated to be "fishing and whaling" are shown together with the numbers engaged in all primary industries and the total work force.

PERSONS ENGAGED: AUSTRALIA.

Particulars.	At Census of 30th June—	
	1947.	1954.
Persons Engaged in—		
Fishing and Whaling No.	10,656	8,637
All Primary Industries No.	563,607	560,100
Total Work Force No.	3,196,431	3,702,022
Persons Engaged in Fishing and Whaling as a Pro- portion of—		
All Primary Industries %	1.9	1.5
Total Work Force %	0.3	0.3

The number of persons engaged in the fishing and whaling industries represents less than two per cent. of the total number of persons engaged in all primary industries and less than half of one per cent. of the total work force of Australia.

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 1030.

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, attention is drawn to the fact that 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 market) 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 values cannot be stated on a net basis, as has been done with most other industries.

In 1958–59, the local value of fishing and whaling amounted to £11,243,000. The most important State was Western Australia with £3,867,000, followed by New South Wales with £2,947,000.

(ii) *Gross and Local Values, 1958–59.* Values of fishing and whaling production for each State are shown for 1958–59 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 will be found in Chapter XXX.—Miscellaneous.

GROSS AND LOCAL VALUE OF PRODUCTION: FISHING AND WHALING, 1958-59.
(£'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	3,413	466	2,947
Victoria	1,433	168	1,265
Queensland	1,530	187	1,343
South Australia	1,230	159	1,071
Western Australia	3,909	42	3,867
Tasmania	664	(a)	664
Northern Territory	86	(a)	86
Australia	12,265	1,022	11,243

(a) Not available.

(iii) *Local Values, 1954-55 to 1958-59.* 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 1954-55 to 1958-59. 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.	Total.(a)
LOCAL VALUE. (£'000.)							
1954-55	2,739	849	1,275	1,046	2,149	556	8,727
1955-56	2,684	734	1,471	995	2,406	505	8,884
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

LOCAL VALUE PER HEAD OF POPULATION. (£.)

1954-55	0.8	0.3	1.0	1.3	3.3	1.8	1.0
1955-56	0.8	0.3	1.1	1.2	3.6	1.6	1.0
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	4.6	1.5	1.1
1958-59	0.8	0.5	0.9	1.2	5.4	1.9	1.1

(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 1958-59.

FISHERIES PRODUCTION: QUANTITY AND GROSS VALUE OF TAKE, 1958-59.

Particulars.	Unit.	N.S.W.	Vic.(a)	Q'ld.	S.A.	W.A.	Tas.(a)	N.T.	Aust.
Fish—									
Estimated Live Weight	'000 lb.	29,632	11,718	9,930	9,990	10,114	2,797	235	74,416
Gross Value	£'000.	1,974	1,185	650	680	668	108	29	5,294
Crustaceans—									
Gross Weight	'000 lb.	3,883	1,311	4,131	4,250	17,641	2,755	..	33,971
Gross Value	£'000.	595	235	501	550	2,314	390	..	4,585
Molluscs—									
Gross (In-shell) Weight	'000 lb.	12,390	206	548	..	(b) 76	4,735	(c)	(d) 17,955
Gross Value	£'000.	813	13	34	..	(b) 11	166	(c)	(d) 1,037
Pearl-shell(e)(f)—									
Weight	'000 lb.	..	..	889	..	1,687	..	253	2,829
Gross Value	£'000.	..	..	156	..	348	..	57	561
Trochus-shell(e)—									
Weight	'000 lb.	..	..	887	..	29	..	..	916
Gross Value	£'000.	..	..	103	..	3	..	..	106

(a) Catch by Victorian fishermen in Tasmanian waters is included in Victoria. (b) Excludes oysters and scallops. (c) Oyster production not available for publication. (d) Incomplete; see footnotes to individual States. (e) Western Australia, season ended December, 1958; Queensland and Northern Territory, season ended January, 1959. (f) Excludes pearl-shell taken by Japanese pearling fleet which operated in Australian waters.

In the table below, similar particulars are shown for the years 1954-55 to 1958-59.

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

Particulars.	Unit.	1954-55.	1955-56.	1956-57.	1957-58.	1958-59.
Fish—						
Estimated Live Weight	'000 lb.	70,422	63,298	75,403	72,016	74,416
Gross Value	£'000	4,645	4,621	5,714	5,228	5,294
Crustaceans—						
Gross Weight	'000 lb.	27,668	25,474	24,815	27,504	33,971
Gross Value	£'000	2,928	2,875	3,284	3,772	4,585
Molluscs(a)—						
Gross (In-shell) Weight	'000 lb.	15,892	15,632	17,444	14,905	17,955
Gross Value	£'000	827	788	861	825	1,037
Pearl-shell(b)—						
Weight	'000 lb.	2,489	2,913	3,724	4,102	2,829
Gross Value	£'000	647	771	1,006	995	561
Trochus-shell—						
Weight	'000 lb.	2,784	2,114	1,911	1,229	916
Gross Value	£'000	350	346	357	184	106

(a) Excludes oyster and scallop production in Western Australia and oyster production in Northern Territory.

(b) Excludes pearl-shell taken by Japanese pearling fleet which operated in Australian waters. For quantities excluded see footnote to table on page 1028.

2. **Fish.**—The development of Australian fisheries proper has almost invariably followed the same sequence at each centre. The earliest fisheries were on-shore followed by demersal reef fishing using long lines. Trawling operations have 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. The fleet of these 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. At the same time, however, the number of steam trawlers based on Sydney has decreased to one. 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 years 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. After the introduction of the pole fishing method in 1950, the catch of tuna increased considerably and amounted to 5.5 million pounds in 1958-59. Practically all this quantity was canned.

At the same time, the demand to justify an increased production of other pelagic fish, such as pilchards, sprats, jack mackerel and anchovies, has not been similarly encouraging. Pilchards caught in southern waters of Australia and sprats taken in Tasmanian waters, usually have 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 fish by the common names of groups of species is shown by States in terms of estimated live weight for the year 1958-59.

FISH: PRODUCTION BY SPECIES GROUPS, 1958-59.

('000 lb. Estimated Live Weight.)

Species Group.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	N.T.	Aust.
Mullet	6,274	1,224	4,378	900	1,263	23	1	14,063
Australian Salmon	2,169	1,241	..	900	4,028	205	..	8,543
Shark	1,587	(a)2,655	17	1,900	423	(a) 793	..	7,375
Tuna	3,891	24	9	1,540	12	17	..	5,493
Flathead	2,856	1,427	227	..	30	59	..	4,599
Barracouta	27	2,852	..	..	..	1,421	..	4,300
Snapper	1,368	143	149	395	1,060	..	..	3,115
Whiting	314	367	471	1,350	488	..	..	2,990
Morwong, Jackass Fish, Perch, Queen Snapper	2,450	111	..	..	4	7	..	2,572
Leatherjacket	1,800	13	(b)	..	53	(b)	..	1,866
Ruff, Tommyruff, Sea Herring .. ..	..	84	..	400	1,376	..	..	1,860
Garfish	247	172	115	450	47	48	(b)	1,079
Other Fish	6,649	1,405	4,564	2,155	1,330	224	234	16,561
Total	29,632	a 11,718	9,930	9,990	10,114	(a)2,797	235	74,416

(a) 1,174,000 lb. of shark taken by Victorian fishermen in Tasmanian waters are included in Victoria.
(b) Less than 500 lb.

The production of fish by these common groups of species are shown in the following table for the years 1954-55 to 1958-59:—

FISH: PRODUCTION BY SPECIES GROUPS, AUSTRALIA.

('000 lb. Estimated Live Weight.)

Species Group.	1954-55.	1955-56.	1956-57.	1957-58.	1958-59.
Mullet	12,528	11,576	11,244	11,566	14,063
Australian Salmon	7,415	7,652	12,164	10,561	8,543
Shark	7,766	6,987	8,438	8,241	7,375
Tuna	997	1,141	2,262	3,230	5,493
Flathead	5,874	4,958	5,015	4,108	4,599
Barracouta	6,949	3,445	5,468	3,903	4,300
Snapper	3,197	3,127	3,427	3,144	3,115
Whiting	2,452	2,804	2,680	3,000	2,990
Morwong, Jackass Fish, Perch, Queen Snapper	2,913	2,712	3,895	3,103	2,572
Leatherjacket	1,809	2,280	1,885	1,658	1,866
Ruff, Tommyruff, Sea Herring	1,460	1,068	1,918	1,563	1,860
Garfish	1,143	1,147	1,633	1,139	1,079
Other Fish	15,919	14,401	15,374	16,800	16,561
Total	70,422	63,298	75,403	72,016	74,416

Total production of fish by States for the years 1954-55 to 1958-59 is shown in the following table.

FISH: PRODUCTION BY STATES.

('000 lb. Estimated Live Weight.)

State or Territory.	1954-55.	1955-56.	1956-57.	1957-58.	1958-59.
New South Wales	26,441	23,062	28,992	27,925	29,632
Victoria(a)	13,833	10,826	14,136	13,348	11,718
Queensland	9,368	9,668	9,447	9,034	9,930
South Australia	8,154	7,328	9,688	9,591	9,990
Western Australia	9,393	9,768	9,545	9,783	10,114
Tasmania(a)	3,115	2,545	3,416	2,175	2,797
Northern Territory	118	101	179	160	235
Australia	70,422	63,298	75,403	72,016	74,416

(a) Catch by Victorian fishermen in Tasmanian waters is included in Victoria.

3. **Crustaceans.**—Crayfish are taken, in pots and traps, in all States. Crayfish fisheries have developed greatly since the 1939-45 War to take advantage of the market in the United States of America for frozen crayfish tails, the total catch increasing from approximately 3,000,000 lb. in 1945-46 to 26,300,000 lb. in 1958-59. Of the total catch in 1958-59, Western Australia produced two-thirds or 17,500,000 lb.

Prawns are taken by otter trawl, mainly in New South Wales and Queensland waters. In 1958-59, Queensland accounted for 3,500,000 lb. and New South Wales for 3,100,000 lb.

Approximately two-thirds of Australia's production of crabs is taken from Queensland waters.

Lobster production is restricted to a single freshwater species, *Euastacus serratus*, from New South Wales streams.

Details of production of crustaceans are shown by States in the table below on a gross weight basis for the year 1958-59.

CRUSTACEANS: PRODUCTION BY TYPE, 1958-59.

('000 lb. gross weight.)

Type.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Aust.
Crayfish ..	(a) 473	(b) 1,294	(c) 25	4,250	17,517	(b) 2,755	26,314
Prawns ..	3,148	17	3,500	..	86	..	6,751
Crabs ..	262	..	606	..	38	..	906
Total ..	3,883	(b) 1,311	4,131	4,250	17,641	(b) 2,755	33,971

(a) Includes take of freshwater lobster. Tasmanian waters is included in Victoria.

(b) Catch of crayfish by Victorian fishermen in (c) Shovel-nosed lobster (*Thenus orientalis*).

The following table contains details of production of crustaceans in Australia for the years 1954-55 to 1958-59.

CRUSTACEANS: PRODUCTION BY TYPE, AUSTRALIA.

(*000 lb. gross weight.)

Type.	1954-55.	1955-56.	1956-57.	1957-58.	1958-59.
Crayfish(a)	20,207	18,456	18,905	21,991	26,314
Prawns	6,648	6,148	5,075	4,687	6,751
Crabs	813	870	835	826	906
Total	27,668	25,474	24,815	27,504	33,971

(a) Includes freshwater lobster.

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. This 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. The Australian production (in shell) was 12,885,000 lb. in 1958-59, of which 12,390,000 lb. was produced in New South Wales and 407,000 lb. in Queensland. Particulars of the small quantities produced in Western Australia and Northern Territory are not available for publication.

Scallops are taken by dredge in Tasmanian waters and by trawl in Queensland waters. Tasmania was the dominant producer in 1958-59 with 4,735,000 lb. out of the total production of 4,786,000 lb. In addition, a small quantity was taken in Western Australia but particulars of this take are not available for publication.

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

Details of production of molluscs are shown by States in the table below on a gross (in shell) weight basis for the year 1958-59.

MOLLUSCS: PRODUCTION BY TYPE, 1958-59.

(*000 lb. gross (in shell) weight.)

Type.	N.S.W.	Vic.	Qld.	W.A.	Tas.	N.T.	Aust.
Oysters	12,390	88	407	(a)	(b)	(a)	(c) 12,885
Scallops .. ..	..	..	51	(a)	4,735	..	(c) 4,786
Squid .. ..	..	118	90	17	..	..	225
Cuttlefish .. ..	..	..	..	57	..	..	57
Octopus .. ..	..	..	..	2	..	..	2
Total	12,390	206	548	(d) 76	4,735	(a)	(e) 17,955

(a) Not available for publication. (b) Less than 500 lb. (c) Excludes States marked (a).
 (d) Excludes oysters and scallops. (e) Excludes oyster production in Western Australia and Northern Territory and scallop production in Western Australia.

The table below shows details of total production of edible molluscs in Australia for the years 1954-55 to 1958-59.

MOLLUSCS: PRODUCTION BY TYPES, AUSTRALIA.

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

Type.	1954-55.	1955-56.	1956-57.	1957-58.	1958-59.
Oysters	(a) 10,415	(a) 9,561	(a) 10,264	(a) 10,562	(b) 12,885
Scallops	5,406	5,988	7,074	(a) 4,207	(a) 4,786
Squid	71	83	106	134	225
Cuttlefish .. ..	..	..	..	..	57
Octopus .. ..	..	..	..	..	2
Abalone .. ..	..	..	..	2	..
Total(c)	15,892	15,632	17,444	14,905	17,955

(a) Excludes Western Australia.

(b) Excludes Western Australia and Northern Territory.

(c) Incomplete; see notes to individual types.

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 referred 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; the others were 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 engine drivers in Australian luggers. By 31st January, 1959, the number of Japanese, employed mainly in Western Australia and in the Northern Territory, had grown to 161, out of a total number of 1,462 employed in the industry. Queensland with a more ready resource 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, 1959, Queensland pearlers employed 746 Torres Strait Islanders in its total personnel of 964. Torres Strait Islanders represented more than half of the total number of 1,462 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 1952-53 was brought into operation. This Act aims at the conservation of pearl-shell 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 meantime 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.

In 1958-59, Australian production of pearl-shell and trochus-shell was 2,829,000 lb. and 916,000 lb. respectively. In addition, Japanese pearlers took 763,000 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 taken are shown for the years 1954–55 to 1958–59.

PEARL-SHELL AND TROCHUS-SHELL: QUANTITY TAKEN.

(‘000 lb.)

Particulars.	1954–55.	1955–56.	1956–57.	1957–58.	1958–59.
Pearl-shell(a)—					
Queensland(b)	896	1,142	1,127	1,131	889
Western Australia(c)	1,250	1,460	2,012	2,218	1,687
Northern Territory(b)	343	311	585	753	253
Australia	2,489	2,913	3,724	4,102	2,829
Trochus-shell—					
Queensland(b)	2,775	2,101	1,900	1,207	887
Western Australia(c)	9	13	11	22	29
Australia	2,784	2,114	1,911	1,229	916

(a) Excludes pearl-shell taken by the Japanese pearling fleet which operated in Australian waters, the quantities of which were as follows:—1954–55, 2,105,000 lb.; 1955–56, 1,657,000 lb.; 1956–57, 1,458,000 lb.; 1957–58, 1,572,000 lb.; 1958–59, 763,000 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.

No complete particulars are available of 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 a harbour, “Kuri Bay”, on Brecknock Island. This station, 130 miles north-east of Derby, produced its first crop of high quality pearls in 1958. Particulars of production of cultured pearls are not available for publication.

Exports of pearls (including cultured pearls) from Australia, were £62,000 in 1957–58 and £64,000 in 1958–59.

§ 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 considerable distances 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 also market fish in their own regions. 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 at the main Melbourne market owned and controlled by the City of Melbourne. In addition, the eight 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 fifteen coastal markets and seven 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 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. A number of vessels have also 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 about 1945-46 when the production of canned fish amounted to 1,700,000 lb. After that year, production increased considerably and reached a peak of 10,900,000 lb. in 1948-49, but gradually declined in subsequent years to 6,008,000 lb. in 1955-56. Production increased again in recent years and in 1958-59 was 7,687,000 lb.

In addition to the fish canned in 1958-59, 285,000 lb. of smoked fish, 1,699,000 lb. of fish paste, over 7,000,000 lb. of frozen crayfish tails 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 1954-55 to 1958-59:—

FISH PROCESSING, AUSTRALIA.

('000 lb.)

Particulars.	1954-55.	1955-56.	1956-57.	1957-58.	1958-59.
Number of Factories	9	11	13	14	18
Fish Used (a)—					
Whole	3,081	3,528	8,072	9,293	10,603
Headed and/or Gutted	6,721	7,075	7,339	5,600	4,825
Estimated Live Weight Equivalent (b)	11,000	11,900	16,700	15,900	16,300
Production—					
Canned Fish (c)	6,645	6,008	8,257	7,856	7,782
Canned Oysters	8	..	(d)	(d)	(d)
Smoked Fish	66	123	487	439	286
Fish Paste	1,055	(d)	(d)	1,700	1,314
Fish Meal	270	(d)	(d)	(d)	(d)

(a) Fish used for canning (including fish loaf), smoking and the manufacture of fish paste, but excluding the weight of oysters 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 for publication.

The varieties canned in the several States differ according to the species caught, but separate details for each variety are not available. In New South Wales, Australian salmon and tuna are the principal varieties. Barracouta is of major importance in Victoria and Tasmania, and Australian salmon predominates in South Australia and Western Australia. Small quantities of sea herrings (or ruff) are also canned in the latter State.

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 previously, 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 1954–55 to 1958–59. For the purpose of compiling this table, the non-commercial fish catch has been estimated at ten per cent. of the recorded catch.

Fish is not a staple item in the diet of Australians and the consumption of fisheries' products remained at the comparatively low level of 9.7 lb. per head in 1958–59, more than half of this quantity being fresh or frozen fish.

ESTIMATED SUPPLIES OF FISH, ETC., AVAILABLE FOR CONSUMPTION, AUSTRALIA.

(lb. Edible Weight per Head per Annum.)

Particulars.	1954–55.	1955–56.	1956–57.	1957–58.	1958–59.
Fresh or Frozen—					
Fish—					
Australian Origin	3.4	3.0	3.3	3.1	3.1
Imported	1.8	1.9	1.8	2.1	2.2
Crustaceans and Molluscs ..	1.2	1.0	0.9	0.8	0.9
Cured (incl. Smoked and Salted) ..	1.0	1.1	0.5	1.3	0.8
Canned—					
Australian Origin	0.6	0.6	0.8	0.7	0.9
Imported	2.2	2.5	1.7	1.8	1.7
Total	10.2	10.1	9.0	9.9	9.7

§ 7. Boats and Equipment.

The boats for the on-shore fisheries are almost invariably small vessels fitted with low-powered petrol engines. The vessels working the reefs are larger (up to 50 feet) and have more power. The otter trawl vessels are steam trawlers, and the Danish seine vessels are 40 to 70 feet in length with diesel engines. The shark boats usually have diesel power and range from 35 to 50 feet in length.

The fishing equipment includes almost every possible type of gear, and appropriate boats are employed. The on-shore equipment includes mesh-nets, trawl-nets and traps

of various types. The demersal reef fishery is worked with traps, hand lines and long lines. The demersal flathead fishery is worked by both otter trawl (with Vigneron-Dahl gear) and Danish seine; in addition, some handlining is carried out. The demersal shark fishery is worked by long lines. The pelagic mackerel fishery employs trolling gear with lures of various types, while the pelagic barracouta fishery employs principally barbless jigs. Tuna is taken by trolling and, more recently, by pole fishing with live bait.

The following two tables show details of the number of boats, value of boats and equipment and persons employed in the taking of fish, crustaceans, molluscs (edible), pearl-shell and trochus-shell together with some other particulars of oyster fisheries.

It should be noted that because of variations in definitions and licensing procedures existing in the several States 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 of the numbers engaged full-time in fishing and whaling as recorded in recent population censuses are shown in § 2, page 1021.

**FISHERIES: BOATS AND EQUIPMENT IN USE AND PERSONS ENGAGED,
ETC., 1958-59.**

Particulars.	Unit.	N.S.W.	Vic.	Qld.	S.A.	W.A. (a)	Tas.	N.T.	Aust.
General Fisheries (b)—									
Boats Engaged ..	No.	2,298	690	4,339	1,475	871	438	28	10,139
Value of Boats and Equipment ..	£'000	2,058	1,217	1,412	610	2,156	870	24	8,344
Persons Engaged ..	No.	2,165	929	9,498	5,927	1,503	923	75	21,020
Edible Oyster Fisheries—									
Boats Engaged ..	No.	1,079	4	38	..	(c)	(d)	(c)	(e) 1,121
Value of Boats and Equipment ..	£'000	359	(f)	11	..	(c)	(d)	(c)	(e) 370
Persons Engaged ..	No.	711	5	94	..	(c)	(d)	(c)	(e) 810
Leases Granted ..	"	4,725	5	235	..	..	..	..	4,965
Length of Foreshore in Leases ..	'000 yds.	851	16	(g)	..	..	..	..	(e) 867
Area of Offshore leases	Acres.	5,508	..	..	..	..	..	..	5,508
Pearl, Pearl-shell and Trochus-shell Fisheries (h)—									
Boats Engaged ..	No.	..	..	63	..	42	..	5	110
Value of Boats and Equipment ..	£'000	..	..	389	..	248	..	40	647
Persons Engaged ..	No.	..	..	964	..	419	..	36	1,419
Total, All Fisheries—									
Boats Engaged ..	No.	3,377	694	4,440	1,475	(i) 913	438	33	(e) 11,370
Value of Boats and Equipment ..	£'000	2,417	1,217	1,812	610	(i) 2,374	870	61	(e) 9,361
Persons Engaged ..	No.	2,876	934	10,556	5,927	(i) 1,922	923	111	(e) 23,249

(a) Year ended 31st December, 1958. (b) Excludes edible oyster fisheries, except in Tasmania, but includes crustacean and other mollusc fisheries. (c) Not available for publication. (d) Included in General Fisheries. (e) Incomplete; see footnotes to individual States. (f) Less than £500. (g) Not available. (h) Excludes Japanese pearling fleet which operated in Australian waters. (i) Excludes details for oyster fisheries.

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

Particulars.	Unit.	1954-55.	1955-56.	1956-57.	1957-58.	1958-59.
General Fisheries(a)—						
Boats Engaged	No.	10,040	10,243	10,475	10,241	10,139
Value of Boats and Equip- ment	£'000.	6,240	6,606	7,039	7,476	8,344
Persons Engaged	No.	19,695	20,647	21,707	20,876	21,020
Edible Oyster Fisheries(b)—						
Boats Engaged	No.	1,094	790	1,031	1,070	1,121
Value of Boats and Equip- ment	£'000	123	115	160	167	(c) 370
Persons Engaged	No.	912	799	870	909	810
Leases Granted	"	5,660	5,474	5,452	5,042	4,965
Length of Foreshore in Leases(d)	'000 yds.	1,043	1,127	970	893	867
Area of Offshore Leases ..	Acres	6,547	5,251	6,037	5,415	5,508
Pearl, Pearl-shell and Trochus- shell Fisheries(e)						
Boats Engaged	No.	127	136	150	151	110
Value of Boats and Equip- ment	£'000	564	727	826	790	647
Persons Engaged	No.	1,506	1,571	1,742	1,487	1,419
Total, All Fisheries(e)(f)—						
Boats Engaged	No.	11,261	11,169	11,656	11,462	11,370
Value of Boats and Equip- ment	£'000	6,927	7,448	8,025	8,433	9,361
Persons Engaged	No.	22,113	23,017	24,319	23,272	23,249

(a) Excludes edible oyster fisheries except in Tasmania, but includes crustacean and other mollusc fisheries.

(b) Excludes particulars for Western Australia, Tasmania and Northern Territory.

(c) Includes some equipment in New South Wales not previously valued.

(d) Excludes Queensland

(e) Excludes Japanese pearling fleet which operated in Australian waters.

(f) Excludes particulars for edible oyster fisheries in Western Australia and Northern Territory.

§ 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) imposed by the Minister for Primary Industry, acting on the advice of the Director of Fisheries who represents Australia on the International Whaling Commission. This catch quota was first introduced in Australia in 1951 and aims at conserving the stock of whales in order that the industry might 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 imposed.

The information summarized in the table below was supplied by the Commonwealth Fisheries Office. There is no prescribed season for sperm whaling but other details relate to seasons extending from 1st May to 31st October of each year.

WHALING STATISTICS: AUSTRALIA AND NORFOLK ISLAND.

Particulars.	Unit.	1955.	1956.	1957.	1958.	1959.
Seasonal Quota(a)	No.	1,840	1,990	1,960	1,960	2,080
Whales Taken(b)	"	1,840	1,990	1,961	1,812	1,673
Whales Processed(b)	"	1,840	1,990	1,961	1,812	1,673
Average Length of Whales Processed(b)	ft.	40.8	41.1	40.7	40.8	40.3
Average Production of Oil per Whale(b)	Barrel(c)	51.8	51.6	52.5	54.1	52.3
Persons Employed—						
At Sea	No.	124	124	140	157	165
Ashore	"	433	396	431	440	468
Whale Oil Produced—Quantity(b)	Barrel(c)	95,258	102,366	102,966	97,698	88,415
Whale Products—Value(b) ..	£'000	1,953	2,233	2,205	1,866	1,727

(a) In terms of humpback whales. For quota purposes, 2½ humpback whales are taken as equivalent to 1 blue whale, 2 fin whales, or 6 sei whales. (b) Excludes sperm whales. In 1959, 138 sperm whales were taken and processed, yielding 5,910 barrels of oil. (c) 6 barrels = 1 ton.

§ 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, will be found in Official Year Book No. 38, page 1082 whilst subsequent developments are outlined below.

2. **Commonwealth Scientific and Industrial Research Organization, Division of Fisheries and Oceanography.**—Details of the establishment, organization and functions of the Division of Fisheries of the Commonwealth Scientific and Industrial Research Organization will be found in Official Year Book No. 38, page 1083. The scientific basis on which the work of the Division is carried out has now been widened, and the name of the Division has been amended to "Division of Fisheries and Oceanography".

Research carried out by the Division has assisted greatly in the development and preservation of Australian fisheries. Details may be found in Official Year Book No. 41, page 848, and in previous issues.

3. **Commonwealth Fisheries Office.**—The Commonwealth Fisheries Office, a division of the Department of Primary Industry, arose out of a Tariff Board recommendation in 1941. Details of the establishment, organization and functions of the office will be found 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 Commonwealth is responsible for extra-territorial waters, whaling, pearling, rehabilitation of ex-servicemen in the fishing industry, fishery training schools, commercial development of fisheries, promotion of uniform conditions governing catches of various species of fish, economic research statistics, information and publications.

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 disposed of 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 has been formed to advise the Minister on specific projects for fisheries development.

Projects which have so far been approved include:—

- (i) The purchase of a modern diesel trawler to investigate the commercial potentialities of trawling in the Great Australian Bight.

- (ii) A survey of the prawn resources off the east coast of Australia.
- (iii) A survey of the pilchard resources off the New South Wales coast.
- (iv) Barracouta survey in Bass Strait.
- (v) Crayfish survey off the south coast of Western Australia.

5. **North Australia Development Committee.**—In 1946, the North Australia Development Committee recommended that a hydrological and oceanographical survey should be made of North Australian waters. It also suggested that a biological survey should be made of the pearl oyster with particular reference to the possibility of instituting pearl culture.

Further reference to these and other recommendations may be found in Official Year Book No. 41, page 848.

The C.S.I.R.O. Division of Fisheries subsequently set up a biological research station on Thursday Island, mainly for the pearl and pearl-shell investigations. Since 1951, a research vessel has been based on Thursday Island and is used for diving, biological and hydrological work.

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

1. **Imports of Fish.**—The value of edible fish and fish products imported in 1958–59 amounted to £6,140,000 compared with £6,146,000 in 1957–58.

In 1958–59, the live weight equivalent of fresh and processed fish imported was estimated to be equal to about 50–60 per cent. of the total Australian catch of fish, crustaceans and molluscs, the imports of canned fish being more than double the output of local factories. Of the total quantity of 24.6 million lb. of fresh fish imported in 1958–59, South Africa contributed 7.6 million lb., United Kingdom 5.4 million lb., New Zealand 5.1 million lb., and Denmark 3.2 million lb. A quantity of 16.8 million lb. of canned fish and fish products was imported in 1958–59 and of this, 6.9 million lb. originated in Japan, 3.6 million lb. in the United Kingdom and 2.6 million lb. in Norway. Particulars of the imports of fish and edible fisheries products are shown below for the years 1956–57 to 1958–59.

FISH, CRUSTACEANS AND MOLLUSCS: IMPORTS INTO AUSTRALIA.

Classification..	Quantity ('000 lb.)			Value (£A.'000 f.o.b. Port of Shipment).		
	1956–57.	1957–58.	1958–59.	1956–57.	1957–58.	1958–59.
Fresh or Frozen(a)	18,799	23,163	24,618	1,514	2,163	2,405
Smoked or Dried	3,482	9,698	6,284	215	649	491
Salted	910	2,231	1,465	76	198	148
Potted or Concentrated (including Extracts)	76	148	117	23	42	34
Canned—						
Herrings	4,984	4,581	4,008	507	480	443
Salmon	5,514	6,761	7,407	1,158	1,460	1,518
Sardines and Pilchards	4,584	4,381	4,456	833	826	829
Crustaceans	218	496	449	72	191	171
Other(b)	1,403	898	476	184	137	101
Total Canned	16,703	17,117	16,796	2,754	3,094	3,062

(a) Includes crustaceans and molluscs. which is included with "Smoked or Dried".

(b) Includes canned molluscs. Excludes frozen smoked

2. **Exports of Fish.**—The value of edible fish and fish products exported (including that produced in other countries) amounted to £3,675,000 in 1958–59 compared with £2,809,000 in 1957–58. Crayfish tails accounted for £3,202,000 and £2,489,000 of the total exports in 1958–59 and 1957–58 respectively.

In 1958–59, exports of items other than crayfish tails remained at the low levels of earlier years, but crayfish tails increased in importance, 7.3 million lb. being exported. Nearly all of this quantity was exported to the United States of America and the Hawaiian Islands.

The following table shows details of the Australian exports of edible fisheries products for the years 1956-57 to 1958-59:—

FISH, CRUSTACEANS AND MOLLUSCS: EXPORTS FROM AUSTRALIA.

Particulars.	Quantity ('000 lb.)			Value (£A.'000 f.o.b. Port of Shipment).		
	1956-57.	1957-58.	1958-59.	1956-57.	1957-58.	1958-59.
Fresh or Frozen(a)—						
Crayfish tails	4,775	5,802	7,281	2,310	2,489	3,202
Oysters in shell	75	13	8	1	2	1
Other	754	802	1,423	200	207	366
Potted or Concentrated (including extracts)	(b)	2	2	(c)	(c)	(c)
Smoked or Dried	8	1	10	1	(c)	2
Salted	14	2	18	1	(c)	(c)
Canned—						
Fish(d)	413	441	474	81	86	86
Crustaceans and Molluscs ..	257	81	72	90	25	18
Total Canned	670	522	546	171	111	104

(a) Includes crustaceans and molluscs; excludes frozen smoked which is included with "smoked and dried". (b) Less than 500 lb. (c) Less than £500. (d) Includes exports of other than Australian produce amounting to:—136,000 lb. in 1956-57; 74,000 lb. in 1957-58; and 59,000 lb. in 1958-59.

3. Imports and Exports of Unmanufactured Shell.—In 1958-59, the unmanufactured shell imports were valued at £44,000 and exports at £832,000. Of the total value of exports, pearl-shell accounted for £612,000 and trochus-shell for £212,000

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.

The following table shows for Australia details of unmanufactured shell imported and exported during the years 1956-57 to 1958-59.

UNMANUFACTURED SHELL: IMPORTS AND EXPORTS, AUSTRALIA.

Particulars.	Quantity ('000 lb.)			Value (£A.'000 f.o.b. Port of Shipment).		
	1956-57.	1957-58.	1958-59.	1956-57.	1957-58.	1958-59.
IMPORTS.						
Total unmanufactured shell ..	633	299	227	122	46	44
EXPORTS.						
Pearl	3,703	3,899	2,840	1,049	1,032	612
Trochus	2,149	1,628	1,405	504	254	212
Other (a)	153	100	67	35	14	8
Total	6,005	5,627	4,312	1,588	1,300	832

(a) Mainly green snail shell previously imported from other countries. Includes green snail and other shell taken in Australian waters for which production particulars are not available.

4. **Imports and Exports of Marine Animal Oils.**—In 1958–59, the value of imports of marine animal oils was £232,000, while exports of these products amounted to £1,156,000.

Of the total quantity of 318,000 gals. of whale oil imported in 1958–59, 257,000 gals. originated from Norfolk Island. Imports of other marine animal oils consisted of 59,000 gals. of cod liver oil, 87,000 gals. of unrefined fish oils and 30,000 gals. of other marine animal oils.

Of the total exports of whale oil of 3,373,000 gals., 1,917,000 gals. were shipped to the United Kingdom.

The table hereunder shows for Australia particulars of marine animal oils imported and exported during the years 1956–57 to 1958–59.

MARINE ANIMAL OILS: IMPORTS AND EXPORTS, AUSTRALIA.

Particulars.	Quantity ('000 gals.)			Value (£A.'000 f.o.b. Port of Shipment).		
	1956–57.	1957–58.	1958–59.	1956–57.	1957–58.	1958–59.
IMPORTS.						
Whale(a)	338	335	318	139	153	125
Other	195	152	176	114	108	107
Total	533	487	494	253	261	232
EXPORTS.						
Whale	3,428	4,022	3,373	1,489	1,673	1,144
Other	3	3	30	1	22	12
Total	3,431	4,025	3,403	1,490	1,695	1,156

(a) Principally from Norfolk Island.