

CHAPTER XX.

FISHERIES.

§ 1. General.

1. **Fish Stocks.**—Australia possesses an abundant and varied fish fauna, which embraces both tropical and temperate varieties and includes destructive as well as valuable species. In rivers and lakes both indigenous and imported varieties thrive. The latter have been introduced and acclimatized for industrial and sporting purposes by Governments and angling societies. Exploitation of the fishing areas—for some classes of fish for the whole year, for others during the breeding season only, or until a certain size is attained—is, where necessary, expressly forbidden; proclaimed localities are closed against net-fishing, and a minimum size of mesh for nets is fixed. The sea-fishermen in some districts have made regulations in their own interests for the purpose of controlling the market supply, and these they rigorously observe.

2. **Progress of Industry.**—(i) *Transport and Marketing.* Despite the abundance of edible fish, the progress of the fishery industry in Australia has been slow. Up to the present the questions of transport and marketing of the proved supplies have not been satisfactorily dealt with in the various States.

In New South Wales, as shown in § 5 hereinafter, the matter of exploiting and marketing trawlable fish was undertaken by the State Government, which also took steps to improve the conditions under which the ordinary coastal fishing is carried on. In Queensland, also, State trawling was undertaken in 1919, and some good trawling bottoms have been located and charted between Cape Moreton and Caloundra.

(ii) *Economic Investigations.* In many respects the fishing industry is capable of modification and development. Although some valuable work has been done by the State Governments in the way of experiment and culture, a uniform policy of development for Australia is desirable, and recommendations have been made that the Fisheries Departments of the various States should co-operate with the Federal Government with a view to increasing the productiveness of Australian waters, and that uniform fisheries laws should be adopted by adjacent States.

All live fish imported into Australia are examined on shipboard in order to prevent the importation of undesirable fish.

With the object of ascertaining something of the movements of oceanic fishes, as well as of those estuarine fishes which make periodical oceanic migrations, reports are furnished regarding the various kinds of fishes, etc., and their movements along the coast.

Fuller details regarding the activities of the States in fish-culture are given in Official Year Book No. 6, pp. 471-2.

By arrangement with the Commonwealth Fisheries Department, members of the staff of the Australian Museum, Sydney, accompanied the F.I.S. *Endeavour* on various cruises. Specimens were collected, mounted for scientific purposes, and distributed to

other Australian Museums, a considerable number being put aside for the Commonwealth Fishery Museum. As pointed out later, however, this vessel was lost with all hands in 1914, and has not since been replaced.

3. Consumption of Fish.—It has been said that the Australians are not an "ichthyophagous" race, seeing that the annual consumption of fish per head of population in Great Britain is set down at 42 lbs., while in Australia it has been estimated at only 10 lbs. The comparatively heavy import of dried and preserved fish would appear to indicate that there is great scope for the development of the industry, which now seems to be ill-managed, the price to the consumer being high, while the fisherman's gain is uncertain, and the system of distribution lacks method. Considerable improvement has, however, been effected in recent years, particularly in New South Wales (*vide* § 5 herein).

4. Oyster Fisheries.—Natural oyster beds yielding a product of excellent quality exist on the foreshores in the shallow waters of inlets and estuaries in several parts of Australia. By husbanding the natural crop, and by judicious transplanting, the output has been very materially augmented. The areas are leased by the Government to private persons, lengths of foreshore being taken up under oyster leases. In New South Wales and Queensland the industry has thriven, and small yields are obtained in South Australia and Victoria.

5. Pearl-shell, Pearls, Bêche-de-Mer, etc.—(i) *General.* Pearl-shelling is carried on in the tropical waters of Queensland, the Northern Territory, and Western Australia. The pearl-oyster inhabits the northern and western coastal waters from Cape York to Shark Bay, a length of shore of over 2,000 miles. The shells are marketed in considerable quantities, and pearls also are obtained in Queensland and Western Australia. The fishing is generally conducted with the aid of diving apparatus, in water varying from 4 to 20 fathoms in depth. In Queensland and the Northern Territory the bêche-de-mer industry is carried on, and tortoise-shell is obtained on the coasts. Experiments have been made in cultivating the pearl-oyster on suitable banks. In October, 1911, a pearl weighing 178 grains, and valued at £3,000, was obtained at Broome. Further details regarding pearl-shelling are given in Official Year Book No. 6, p. 463. Trochus-shell to the value of £41,698 and £7,383 was raised in Queensland during 1920 and 1921 respectively.

(ii) *Royal Commission on Pearl-shelling Industry.* In accordance with the "White Australia" policy it was originally determined that the employment of Asiatic labour in the pearl-shelling industry should be restricted, and ultimately cease, and it was proposed that after 31st December, 1913, permits to indent Asiatics for the pearling-fleet should no longer be issued. In view, however, of the disorganization of the industry occasioned by the war, the time was extended to the 30th June, 1918, after which date permits to introduce Asiatic labour were to be granted only in cases where the diver and tender of a boat were Europeans. Since the receipt of the Report of the Royal Commission, referred to hereunder, this proviso was, however, revoked.

In March, 1912, a Royal Commission to inquire into the pearling industry was appointed by the Commonwealth Government, and after visits to the Queensland and Western Australian waters, various sittings, and the issue of a progress report, presented its final report in 1916. The Commissioners stated that, though it might be practicable, they did not consider it advisable or profitable to attempt by any drastic methods to transfer the industry from Asiatics to Europeans. They further stated that, while the labour now employed is almost entirely Asiatic, they did not consider that the "White Australia" policy would be weakened or imperilled by allowing the industry to continue as at present conducted.

At Thursday Island the pearling industry is almost monopolized by Japanese.

§ 2. The Fishery Industry.

1. **Boats and Men Engaged, and Take.**—(i) *General Fisheries.* The returns have been compiled from particulars supplied by the State Departments, and while the data do not generally lend themselves to presentation on a uniform basis, the principal facts have been incorporated in the tables hereunder :—

GENERAL FISHERIES, 1921.

State or Territory.	No. of Boats Engaged.	Value of Boats and Equipment.	No. of Men Employed.	Total Take of—		Value of Take.	
				Fish.	Spiny Lobster (Crayfish).	Fish.	Spiny Lobster (Crayfish).
	No.	£	No.	cwt.	doz.	£	£
New South Wales	971	70,938	g 3,524	6199,988	6,083	6404,943	c 24,449
Victoria (e)	858	105,385	1,279	100,308	17,830	135,150	12,660
Queensland	629	39,712	1,183	47,180	..	87,943	..
South Australia (e)	810	34,000	907	(a)	(a)	240,000	(f)
Western Australia	269	34,880	582	24,351	8,709	70,933	4,355
Tasmania (d)	145	13,475	361	doz. 53,058	5,185	9,496	1,865
Northern Territory(e)	2	90	10	102	..	205	..
Total (d)	3,684	298,480	7,846	..	..	948,670	43,329

(a) Not available. (b) Including 49,661 cwt. fish, valued at £104,289, obtained by State trawlers and private fishermen. (c) Including £12,283, the value of 4,239 cwt. prawns and 654 baskets of crabs. (d) Incomplete. (e) Year ended 30th June, 1922. (f) Included with fish. (g) Number of licensed fishermen.

Returns for the past five years are given in the table below :—

GENERAL FISHERIES.—AUSTRALIA, 1917 TO 1921.

Particulars.	1917.	1918.	1919.	1920.	1921.
No. of boats engaged ..	3,401	3,287	3,838	3,624	3,684
No. of men employed ..	6,773	6,515	7,774	7,634	7,846
Fish obtained—					
Quantity ..	cwt. 463,839	490,612	377,743	385,695	371,929
Value ..	£ 695,718	755,059	877,120	939,568	948,670
Lobsters obtained—Value	£ 28,603	32,250	26,896	44,885	43,329

NOTE.—See notes to previous table.

(ii) *Edible Oyster Fisheries.* The returns from oyster fisheries are given in the next table. Edible oysters are not found in Western Australia, and no information is available regarding the small production of local oysters in Tasmania :—

EDIBLE OYSTER FISHERIES (a), 1921.

State or Territory.	Number of Boats Engaged.	Value of Boats and Equipment.	Number of Men Employed.	Number of Leases.	Oysters Taken.	
					Quantity.	Value.
	No.	£	No.	No.	cwt.	£
New South Wales	489	20,738	470	3,870	37,656	64,884
Victoria (b)	(c)	(c)	(c)	20	1,660	1,384
Queensland	102	12,834	132	592	24,488	30,540
South Australia (c)	..	..	..	..	..	..
Total	..	..	..	d 4,482	d 63,804	d 96,808

(a) Practically no oyster fisheries in Western Australia, Tasmania, and Northern Territory. (b) Year ended 30th June, 1922. (c) Included with General Fisheries. (d) Exclusive of South Australia.

Returns for Australia for the last five years are given in the appended table :—

EDIBLE OYSTER FISHERIES.—AUSTRALIA, 1917 TO 1921.

Particulars.		1917.	1918.	1919.	1920.	1921.
No. of boats engaged ..		577	550	503	532	591
No. of men employed ..		640	598	492	539	602
Oysters obtained—						
Quantity .. cwt.		74,313	78,668	78,430	72,767	63,804
Value .. £		86,550	92,261	100,910	108,694	96,808

NOTE.—See notes to previous table.

(iii) *Pearl and Bêche-de-Mer Fisheries.* The pearling industry is carried on in the tropical waters of Queensland, Western Australia, and the Northern Territory. During the last few years the return from the pearling industry has been adversely affected by labour conditions, coupled with the restriction in the market consequent on the war. Some of the pearling fleets have transferred their operations to Dutch waters. Bêche-de-mer is obtained in Queensland and the Northern Territory, the product being exported to China.

PEARL, PEARL-SHELL, AND BÊCHE-DE-MER FISHERIES, (a), 1921.

State or Territory.	Number of Boats Engaged.	Value of Boats and Equipment.	Number of Men Employed.	Quantity of Pearl-shell obtained.	Value of Pearl-shell obtained.	Value of Pearls obtained.	Value of Bêche-de-mer obtained.	Value of Tortoise-shell obtained.
	No.	£	No.	Tons.	£	£	£	£
Queensland (b) ..	112	56,000	781	188	26,212	(d)	50,152	880
Western Australia ..	216	113,594	1,594	1,227	161,958	36,163	..	..
Northern Territory(c)	6	1,650	28	7	1,106	..	2,049	200
Australia ..	334	171,244	2,403	1,422	189,276	36,163	52,201	1,080

(a) No pearl-shelling industry in New South Wales, Victoria, South Australia, and Tasmania.
(b) Also trochus-shell to the value of £7,383. (c) Year ended 30th June, 1922. (d) Not available.

For obvious reasons the returns in regard to the value of pearls obtained can be regarded as rough approximations only. The trochus-shell raised in Queensland is used principally in the manufacture of "pearl" buttons.

Particulars regarding these fisheries for the last five years are given below :—

PEARL, PEARL-SHELL, AND BÊCHE-DE-MER FISHERIES.—AUSTRALIA, 1917 TO 1921.

Particulars.		1917.	1918.	1919.	1920.	1921.
No. of boats engaged ..		471	401	471	515	334
No. of men employed ..		3,615	2,935	3,453	3,738	2,403
Pearl-shell obtained—						
Quantity .. tons		2,192	1,616	2,300	2,126	1,422
Value .. £		264,295	224,115	387,034	337,917	189,276
Pearls obtained (a)—						
Value .. £		39,333	63,487	74,212	68,610	36,163
Bêche-de-mer obtained —						
Quantity .. tons		624	468	308	..	..
Value .. £		42,064	48,933	42,721	70,898	52,201
Tortoise-shell obtained—						
Quantity .. lbs.		942	695	172	552	2,112
Value .. £		378	350	96	302	1,080
Trochus-shell obtained—						
Value .. £		21,800	37,886	30,280	41,698	7,383

(a) Incomplete; but as returned.

2. *Fish Preserving.*—To encourage the industry, the Federal Parliament provided a bounty of $\frac{1}{4}$ d. per lb. for fish preserved as prescribed during the ten years 1907–8 to 1916–17. The payment, which amounted to only £3,005 during the period, or at the rate of £300 per annum, failed to develop the industry, and the bounty was not renewed on its expiration in 1916–17.

3. *State Revenue from Fisheries.*—The revenue from fisheries in each State during the year 1921 is given hereunder :—

FISHERIES.—REVENUE, 1921.

State or Territory.	Licences.	Leases.	Fines and Forfeitures.	Other Sources.	Total.
	£	£	£	£	£
New South Wales ..	1,463	8,846	114	470	10,893
Victoria (a) ..	610	31	69	32	742
Queensland ..	2,366	3,441	23	..	5,830
South Australia (a) ..	1,000	..	2	..	1,002
Western Australia ..	3,097	788	223	..	4,108
Tasmania ..	602	..	41	84	727
Northern Territory (a) ..	26	..	..	..	26
Total ..	9,164	13,106	472	586	23,328

(a) Year ended 30th June, 1922.

Similar particulars for Australia for the last five years are given in the following table :—

FISHERIES.—REVENUE, AUSTRALIA, 1917 TO 1921.

Particulars.	1917.	1918.	1919.	1920.	1921.
	£	£	£	£	£
Licences ..	9,080	8,903	10,959	11,760	9,164
Leases ..	12,420	12,646	11,969	13,432	13,106
Fines and Forfeitures ..	358	438	523	536	472
Other Sources ..	999	575	3,919	524	586
Total ..	22,857	22,562	27,370	26,252	23,328

§ 3. Oversea Trade in Fishery Products.

1. *Imports of Fish.*—The development of the local fishing industry leaves much to be desired, as is evident from the large imports. For the last five years the imports were as follows :—

FISH.—IMPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Classification.		1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
Fresh (oysters) ..	cwt.	1,583	2,321	520	2,092	2,297
	£	1,098	1,617	762	2,708	3,675
Fresh, or preserved	cwt.	11,080	5,383	9,444	17,558	25,130
by cold process	£	26,306	15,144	39,796	81,126	107,999
Potted ..	cwt.	(a)	(a)	(a)	(a)	(a)
	£	1,300	10,075	97,340	64,310	72,788
Preserved in tins	cwt.	148,421	62,426	148,684	103,505	163,034
	£	788,728	345,918	989,742	649,610	885,781
Smoked, dried, and	cwt.	7,320	2,313	6,106	10,179	13,170
n.e.i.	£	35,602	15,863	38,298	52,774	59,038
Total	cwt. (b)	168,404	72,443	164,754	133,334	203,631
	£	853,034	388,617	1,165,938	850,528	1,129,281

(a) Not available.

(b) Exclusive of potted fish.

Tinned fish constitutes by far the largest proportion of the imports, most of it consisting of salmon from the United States of America, Canada, Norway, and Alaska. The potted fish comes chiefly from the United Kingdom. New Zealand supplies the largest proportion of the fresh fish, the bulk of the remainder coming from the United Kingdom and Canada. The small import of oysters is supplied by New Zealand.

2. **Exports of Fish.**—The exports of local fish produce for the five years 1917–18 to 1921–22 are given hereunder :—

FISH (AUSTRALIAN PRODUCE).—EXPORTS, 1917–18 TO 1921–22.

Classification.		1917–18.	1918–19.	1919–20.	1920–21.	1921–22.
Fish, fresh, smoked, or preserved by cold process	{ cwt.	983	530	790	10,193	9,865
	{ £	4,048	2,591	6,017	86,474	89,095
Preserved, in tins, dried, salted, etc.	{ cwt.	13,413	7,072	9,259	102	78
	{ £	57,254	45,342	66,255	195	306
Total	{ cwt.	14,396	7,602	10,049	10,295	9,943
	{ £	61,302	47,933	72,272	86,669	89,401

The quantity of fresh fish exported from Australia is trifling, and the amount of £89,401 shown in the table above consists chiefly of cured bêche-de-mer exported to Hong Kong from the Northern Territory.

3. **Exports of Pearl and Other Shell.**—The exports of pearl, tortoise, and trochus-shell, of Australian origin, are given hereunder for the five years 1917–18 to 1921–22 :—

PEARL, TORTOISE, AND TROCHUS-SHELL.—EXPORTS, AUSTRALIA, 1917–18 TO 1921–22.

Article.		1917–18.	1918–19.	1919–20.	1920–21.	1921–22.
Pearl-shell	{ cwt.	59,598	49,300	45,040	31,480	38,900
	{ £	347,964	316,154	462,152	319,143	317,623
Tortoise-shell	{ lbs.	1,157	239	1,542	2,922	1,938
	{ £	483	138	1,011	1,864	1,243
Trochus-shell	{ cwt.	..	..	26,000	11,900	14,320
	{ £	..	..	105,894	37,602	26,285

The bulk of the pearl-shell exported during 1921–22 was consigned to the United States of America and the United Kingdom, the respective values of the shipments amounting to £243,554 and £69,656, while trochus-shell to the value of £21,349 was despatched to Japan.

§ 4. The Commonwealth Department of Fisheries.

In 1907 the Commonwealth Government decided to demonstrate what might be attained commercially by the application of modern methods. A Federal Investigation Ship, the *Endeavour*, was constructed specially for the work, and a Director of Fisheries was appointed. Experimental cruises were undertaken, which showed that Australia possesses an asset of considerable value in her sea fisheries. The *Endeavour* was unfortunately lost at sea, with all on board, at the end of 1914, and has not been replaced. A description of the trawling grounds discovered, data regarding oceanography to the east of Australia, and a list of the publications of the Department are given in pp. 333 to 335 of Year Book No. 14.

§ 5. The State Trawling Industry—New South Wales.

The State Trawling Industry was established in 1915, and fishing operations were conducted with seven steel steam trawlers. The catches were landed at Sydney and Newcastle, and the fish distributed through retail shops, of which there were fourteen in the Metropolitan area, one in Newcastle, and five in country towns. During the year ended 30th June, 1922, the State trawlers landed 2413 tons of fish, valued at £101,337. Early in the year 1923 the Government decided to discontinue trawling operations, and most of the assets have since been disposed of.