

## 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, 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.

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, and transport and marketing of the proved supplies have not been satisfactorily dealt with.

In New South Wales, as shown in § 5 herein and § 6 of this Chapter in Official Year Book No. 17, the matter of exploiting trawlable fish was undertaken by the State Government, which also took steps to improve the conditions under which ordinary coastal fishing is carried on. In Queensland, State trawling was undertaken in 1919, and good trawling areas have been located and charted between Cape Moreton and Caloundra.

(ii) *Economic Investigations.* Although 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 bringing about uniformity in fisheries laws. All live fish imported into Australia are examined on shipboard in order to prevent the importation of undesirable fish. With the object of ascertaining the movements of oceanic fishes, and of estuarine fishes which make periodical oceanic migrations, reports are furnished regarding the various kinds of fishes, etc., and their movements along the coast. Details regarding the activities of the States in fish-culture were given in Official Year Book No. 6, pp. 471–2. By arrangement with the Commonwealth Fisheries Department some years ago 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 in § 4, 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 13 lbs. The heavy imports of dried and preserved fish indicate, however, that there is 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.

\* A specially contributed article dealing with the Marine and Fresh Water Fisheries of Australia appeared as § 6 of this Chapter in Official Year Book No. 17 (vide pp. 752 to 767 therein).

4. *Oyster Fisheries*.—Natural oyster beds 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, Victoria, and Tasmania.

5. *Pearl-Shell, Pearls, Beche-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, Western Australia and the Northern Territory. 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 £23,142 and £47,892 was exported from Australia during 1923-24 and 1924-25.

(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 bring in 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. The Royal Commission appointed in March, 1912, 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 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.

## § 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, 1924.

State or Territory.	No. of Boats Engaged.	Value of Boats and Equip- ment.	No. of Men Em- ployed.	Total Take of—		Value of Take.	
				Fish.	Spiny Lobster (Crayfish).	Fish.	Spiny Lobster (Crayfish).
	No.	£	No.	cwt.	doz.	£	£
New South Wales ..	1,723	131,428	3,289	165,778	7,206	522,201	c 47,417
Victoria (e) ..	857	108,658	1,267	90,063	20,827	144,582	18,664
Queensland ..	630	47,105	1,199	56,820	..	124,379	f 2,909
South Australia ..	750	45,000	1,265	(a)	(a)	b 126,500	(a)
Western Australia ..	252	33,582	497	27,252	9,106	76,307	4,553
Tasmania (d) ..	131	18,300	354	doz. 33,841	8,675	9,048	2,350
Northern Territory	3	(a)	14	1,480	..	5,525	..
Total (d) ..	4,346	384,073	7,885	..	45,814	1,008,542	75,893

(a) Not available. (b) Estimate. (c) Including £38,200, the value of 5,324 cwt. prawns and 3,682 dozen crabs. (d) Incomplete. (e) Year ended 30th June, 1925. (f) Crabs.

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

GENERAL FISHERIES.—AUSTRALIA, 1920 TO 1924.

Particulars.		1920.	1921.	1922.	1923.	1924.
No. of boats engaged .. ..		3,624	3,684	3,873	3,776	4,346
No. of men employed .. ..		7,634	7,846	7,771	7,422	7,885
Fish obtained—						
Quantity .. .. cwt.		a397,250	a377,614	a350,350	a319,148	a345,012
Value .. .. £		a689,568	a708,670	a793,263	a845,354	a882,042
Lobsters obtained—Value	£	a44,885	a43,329	a54,796	a59,862	a75,893

(a) Exclusive of South Australia.

(ii) *Edible Oyster Fisheries.* The returns from oyster fisheries are given in the next table.

EDIBLE OYSTER FISHERIES, 1924.

State or Territory.	Number of Boats Engaged.	Value of Boats and Equip-ment.	Number of Men Em-ployed.	Number of Leases.	Oysters Taken.	
					Quantity.	Value.
	No.	£	No.	No.	cwt.	£
New South Wales .. ..	611	27,048	593	4,502	49,412	85,140
Victoria (b) .. ..	32	4,995	84	8	2,478	3,965
Queensland .. ..	81	8,395	125	561	15,412	24,518
South Australia (c) .. ..	..	..	..	..	..	..
Western Australia .. ..	1	(a)	3	2	..	..
Tasmania .. ..	4	600	19	..	420,000 (doz.)	d 4,940
Total .. ..	729	41,038	824	5,073	..	118,563

(a) Not available.

(b) Year ended 30th June, 1925.

(c) Included with General Fisheries.

(d) Including £4,100, value of scallops.

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

EDIBLE OYSTER FISHERIES.—(c) AUSTRALIA, 1920 TO 1924.

Particulars.	1920.	1921.	1922.(a)	1923.(a)	1924.(a)
No. of boats engaged .. ..	(b) 532	(b) 591	624	694	725
No. of men employed .. ..	(b) 539	(b) 602	667	768	805
Oysters obtained—					
Quantity .. .. cwt.	72,767	63,804	68,516	76,857	67,302
Value .. .. £	108,694	96,808	110,305	122,874	113,623

(a) Exclusive of Tasmania.

(b) Exclusive of Victoria.

(c) Exclusive of South Australia.

(iii) *Pearls, Pearl-shell and Trepang.*—Figures regarding the production, trade, etc., for these items, so far as they are ascertainable, are given hereunder. As regards pearls, for obvious reasons no correct estimate can be obtained of the value of those found. Pearl-shell (*Margaritifera*) is widely distributed in North Australian waters over an area facing some thousands of miles of coastline, though not intensively over the whole distance. The north-west beds are the most prolific, but those around and to the north of Cape York are also of importance. There is need for further investigation into the occurrence of this valuable shell, as well as of trochus, green snail, window-pane shell (*Placuna*), the various types of trepang or bêche-de-mer (*Holothuria*), both in tropical Australian waters and in those of Papua and the mandated area of New Guinea. Particulars as returned for the year 1924 are as follows :—

## PEARL, PEARL-SHELL, AND BÊCHE-DE-MER FISHERIES, (a), 1924.

State or Territory.	Number of Boats Engaged.	Value of Boats and Equip-ment.	Number of Men Em-ployed.	Quantity of Pearl-shell obtained.	Value of Pearl-shell obtained.	Value of Pearls obtained.	Value of Bêche-de-mer obtained.	Value of Tor-toise-shell obtained.
	No.	£	No.	Tons.	£	£	£	£
Queensland ..	153	70,000	1,444	1,245	200,334	(b)	23,548	986
Western Australia..	229	124,677	1,599	1,525	241,830	59,470	223	..
Northern Territory	5	(b)	(b)	14	2,070	200	1,986	60
Australia ..	387	194,677	3,043	2,784	444,234	59,670	25,757	1,046

(a) No pearl-shelling industry in New South Wales, Victoria, South Australia, and Tasmania.

(b) Not available.

The figures for tortoise-shell and trochus-shell as returned are defective, as the necessary information is not collected in full detail. In the following summary of production during the past five years, export figures of Australian origin are inserted for both of these items :—

## PEARL, PEARL-SHELL, AND BÊCHE-DE-MER FISHERIES.—AUSTRALIA, 1920 TO 1924.

Particulars.	1920.	1921.	1922.	1923.	1924.
No. of boats engaged ..	515	334	356	388	387
No. of men employed ..	3,738	2,403	2,639	3,005	3,043
Pearl-shell obtained—					
Quantity .. tons	2,126	1,422	2,271	2,292	2,784
Value.. .. £	337,917	189,276	303,452	288,689	444,234
Pearls obtained (a) ..					
Value.. .. £	68,610	36,163	38,163	60,717	59,670
Bêche-de-mer obtained—					
Quantity .. tons	(b)	(b)	(b)	(b)	(b)
Value.. .. £	70,898	52,201	65,679	33,370	25,757
Tortoise-shell exported—					
Value.. .. £	1,864	1,243	2,012	2,574	2,025
Trochus-shell exported—					
Value.. .. £	37,602	26,285	25,095	23,142	47,892

(a) Incomplete ; as returned.

(b) Not returned.

2. Fish Preserving.—To encourage the industry, the Federal Parliament provided a bounty of  $\frac{1}{2}$ 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 1924 is given hereunder :—

## FISHERIES.—REVENUE, 1924.

State or Territory.	Licences.	Leases.	Fines and Forfeitures.	Other Sources.	Total.
	£	£	£	£	£
New South Wales ..	1,452	11,629	521	546	14,148
Victoria (a) ..	606	41	110	3	760
Queensland ..	1,697	2,884	92	9	4,682
South Australia ..	1,070	..	..	..	1,070
Western Australia ..	3,937	1,389	180	327	5,833
Tasmania ..	765	1	115	20	901
Northern Territory ..	24	..	..	..	24
Total ..	9,551	15,944	1,018	905	27,418

(a) Year ended 30th June, 1925.

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

## FISHERIES.—REVENUE, AUSTRALIA, 1920 TO 1924.

Particulars.	1920.	1921.	1922.	1923.	1924.
	£	£	£	£	£
Licences .. ..	11,760	9,164	9,092	10,013	9,551
Leases .. ..	13,432	13,106	14,181	13,419	15,944
Fines and Forfeitures ..	536	472	663	1,029	1,018
Other Sources .. ..	524	586	1,076	3,170	905
Total .. ..	26,252	23,328	25,012	27,631	27,418

## § 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, 1920-21 TO 1924-25.

Classification.	1920-21.	1921-22.	1922-23.	1923-24.	1924-25.
Fresh (oysters) .. { cwt. 2,092 2,297 2,927 415 1,646					
£ 2,708 3,675 4,091 301 1,222					
Fresh, or preserved by cold process { cwt. 17,558 25,130 38,508 50,718 64,409					
£ 81,126 107,999 127,172 165,948 197,690					
Potted .. .. { cwt. (a) (a) (a) (a) (a)					
£ 64,310 72,788 69,422 101,085 110,347					
Preserved in tins { cwt. 103,505 163,034 175,322 233,318 226,263					
£ 649,610 885,781 867,708 1,158,048 1,120,428					
Smoked, dried, and n.e.i. { cwt. 10,179 13,170 13,633 15,592 13,815					
£ 25,774 59,038 56,190 63,167 51,831					
Total { cwt. (b) 133,334 203,631 230,390 300,043 306,133					
£ 850,528 1,129,281 1,124,583 1,488,549 1,481,518					

(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, Alaska, and the United Kingdom. The potted fish comes chiefly from the United Kingdom, while the same country supplied the largest proportion of the fresh fish in 1924-25, the bulk of the remainder coming from the New Zealand and South African Union. The small import of oysters is supplied by New Zealand.

2. Exports of Fish.—The exports of local fish produce for the five years 1920-21 to 1924-25 are given hereunder :—

## FISH (AUSTRALIAN PRODUCE).—EXPORTS, 1920-21 TO 1924-25.

Classification.	1920-21.	1921-22.	1922-23.	1923-24.	1924-25.
Fish, fresh, smoked, or preserved by cold process { cwt. 10,193 9,865 9,692 5,681 3,449					
£ 86,474 89,095 66,104 33,259 23,710					
Preserved, in tins, dried, salted, etc. { cwt. 102 78 162 476 386					
£ 195 306 433 1,185 1,401					
Total .. .. { cwt. 10,295 9,943 9,854 6,157 3,835					
£ 86,669 89,401 66,537 34,444 25,111					

The quantity of fresh fish exported from Australia is trifling, and the amount of £23,710 shown in the table above consists chiefly of cured bêche-de-mer exported to Hong Kong from Queensland.

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 1920-21 to 1924-25 :—

PEARL, TORTOISE, AND TROCHUS-SHELL.—EXPORTS, AUSTRALIA,  
1920-21 TO 1924-25.

Article.			1920-21.	1921-22.	1922-23.	1923-24.	1924-25.
Pearl-shell	..	cwt.	31,480	38,900	41,027	48,017	44,112.
		£	319,143	317,623	320,602	377,313	413,095
Tortoise-shell	..	lbs.	2,922	1,938	2,812	3,308	2,432
		£	1,864	1,243	2,012	2,574	2,025
Trochus-shell	..	cwt.	11,900	14,320	13,186	12,072	16,552
		£	37,602	26,285	25,095	23,142	47,892

The bulk of the pearl-shell exported during 1924-25 was consigned to the United States of America and the United Kingdom, the respective values of the shipments amounting to £252,887 and £147,787, while trochus-shell to the value of £44,086 was dispatched 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 in fishery. 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. Trawling in Australian Waters.

The State Trawling Industry was established in New South Wales 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 2,413 tons of fish, valued at £101,337. Early in the year 1923 the Government discontinued trawling operations, as the venture was not a commercial success, and the assets have since been disposed of. The operations of the Government trawlers, however, revealed some of the richest trawling areas in the world, and these grounds are being successfully exploited by private enterprise.