

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 carried out by the State Governments in the way of experiment and culture, much yet remains to be done before the industry is at all commensurate in extent with the industrial progress or consuming capacities of the Commonwealth. 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.

With the object of reviewing the potentialities of the fishing industry of Australia the Development and Migration Commission convened a meeting of State and Commonwealth representatives. The Conference, which was held in Melbourne during September 1927, affirmed:—

- (1) The importance of establishing a Marine Biological Institution to study the scientific problems connected with Australian fisheries, and to collect and disseminate authoritative information and give advice on matters concerning the fisheries.
- (2) The desirability of establishing an experimental trawling unit to explore the fisheries resources of Australia.

Committees were formed to deal with important problems concerning the preservation, transportation, marketing, and distribution of fish, canning and curing of fish, the production of fish by-products, factors of destruction in fisheries, the development of the oyster industry, etc., on each of which subjects information is now being collected by personal investigations of State and Commonwealth officers and by the Commission's representative in London.

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

* 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).

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.

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, 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 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 £76,280 and £72,812 was exported from Australia during 1925–26 and 1926–27.

(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, 1926.

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 ..	2,116	134,263	2,949	175,693	9,665	491,939	c78,369
Victoria ..	890	110,450	1,318	61,195	16,629	171,346	14,966
Queensland ..	739	57,144	1,459	60,200	d 7,217	135,238	d 8,808
South Australia ..	800	52,000	1,200	b 65,000	(a)	b150,000	(a)
Western Australia..	241	40,656	523	31,368	8,857	87,831	4,420
Tasmania ..	151	21,360	286	9,000	4,500	21,352	1,520
Northern Territory	3	200	10	700	...	1,333	..
Total ..	4,940	416,073	7,745	403,156	46,868	1,059,039	108,092

(a) Not available. (b) Estimate. (c) Including £66,046 the value of 9,311 cwt. prawns and 5,820 dozen crabs. (d) Crabs.

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

GENERAL FISHERIES.—AUSTRALIA, 1922 TO 1926.

Particulars.		1922.	1923.	1924.	1925.	1926.
No. of boats engaged		3,873	3,776	4,346	4,399	4,940
No. of men employed		7,771	7,422	7,885	7,788	7,745
Fish obtained—						
Quantity owt.		a350,350	a319,148	a345,012	a341,133	403,156
Value £		a793,263	a845,354	a882,042	a909,032	1,059,039
Lobsters obtained—Value	£	a54,796	a59,862	a75,893	a103,338	a108,092

(a) Exclusive of South Australia.

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

EDIBLE OYSTER FISHERIES, 1926.

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	1,283	31,480	630	4,866	55,498	103,600
Victoria	5	1,205	7	6	105	392
Queensland	59	6,276	96	484	10,029	17,272
South Australia (b) .. ..	..	..	..	..	..	..
Western Australia .. ..	..	..	..	..	..	..
Tasmania	4	600	19	(a)	360	d 3,820
Total (c)	1,351	39,561	752	5,356	65,992	125,084

(a) Not available.

(b) Included with General Fisheries.

(c) Exclusive of South Australia.

(d) Including £3,100, value of scallops.

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

EDIBLE OYSTER FISHERIES.—(b) AUSTRALIA, 1922 TO 1926.

Particulars.		1922.(a)	1923.(a)	1924.(a)	1925.(a)	1926.
No. of boats engaged		624	694	725	741	1,351
No. of men employed		667	768	805	709	752
Oysters obtained—						
Quantity cwt.		68,516	76,857	67,302	77,990	65,992
Value £		110,305	122,874	113,623	133,161	125,084

(a) Exclusive of Tasmania.

(b) 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 1926 are as follows :—

PEARL, PEARL-SHELL, AND BÊCHE-DE-MER FISHERIES, (a), 1926.

State or Territory.	Number of Boats Engaged.	Value of Boats and Equip.	Number of Men Employed.	Quantity of Pearl-shell obtained.	Value of Pearl shell obtained.	Value of Pearls obtained. (b)	Value of Bêche-de-mer obtained.	Value of Tortoise-shell obtained.
	No.	£	No.	Tons.	£	£	£	£
Queensland ..	125	80,000	1,380	922	121,444	12,760	29,383	947
Western Australia..	209	93,288	1,470	1,113	169,904	26,695	903	388
Northern Territory	14	8,000	43	63	11,500	200	900	20
Australia ..	348	181,288	2,893	2,098	302,848	39,655	31,186	1,355

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

(b) Incomplete; as returned.

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, 1922 TO 1926.

Particulars.	1922.	1923.	1924.	1925.	1926.
No. of boats engaged ..	356	388	387	416	348
No. of men employed ..	2,639	3,005	3,043	3,347	2,893
Pearl-shell obtained—					
Quantity .. tons	2,271	2,292	2,784	2,602	2,098
Value.. .. £	303,452	288,689	444,234	362,285	302,848
Pearls obtained (a)—					
Value.. .. £	38,163	60,717	59,670	65,095	39,655
Bêche-de-mer obtained—					
Quantity .. tons	(b)	(b)	(b)	(b)	(b)
Value.. .. £	65,679	33,370	25,757	13,535	31,186
Tortoise-shell exported—					
Value.. .. £	2,012	2,574	2,025	4,730	3,364
Trochus-shell exported—					
Value.. .. £	25,095	23,142	47,892	76,280	72,812

(a) Incomplete; as returned.

(b) Not 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 1926 is given hereunder:—

FISHERIES.—REVENUE, 1926.

State or Territory.	Licences.	Leases.	Fines and Forfeitures.	Other Sources.	Total.
	£	£	£	£	£
New South Wales ..	1,356	12,691	451	1,215	15,713
Victoria	653	55	112	16	836
Queensland	2,946	2,460	66	3	5,475
South Australia ..	1,159	..	..	..	1,159
Western Australia ..	2,630	1,121	174	242	4,167
Tasmania	1,118	112	38	1	1,269
Northern Territory ..	28	..	..	..	28
Total	9,890	16,439	841	1,477	28,647

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

FISHERIES.—REVENUE, AUSTRALIA, 1922 TO 1926.

Particulars.	1922.	1923.	1924.	1925.	1926.
	£	£	£	£	£
Licences	9,092	10,013	9,551	12,557	9,890
Leases	14,181	13,419	15,944	15,927	16,439
Fines and Forfeitures ..	663	1,029	1,018	781	841
Other Sources	1,076	3,170	905	1,321	1,477
Total	25,012	27,631	27,418	30,586	28,647

§ 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, 1922-23 TO 1926-27.

Classification.	1922-23.	1923-24.	1924-25.	1925-26.	1926-27.
Fresh (oysters) ..	cwt. 2,927	415	1,646	2,899	2,115
	£ 4,091	301	1,222	2,228	1,699
Fresh, or preserved by cold process	cwt. 38,508	50,718	64,409	69,855	61,151
	£ 127,172	165,948	197,690	205,163	180,773
Potted	cwt. (a)	(a)	(a)	(a)	(a)
	£ 69,422	101,085	110,347	130,969	146,782
Preserved in tins	cwt. 175,322	233,318	226,263	228,226	268,463
	£ 867,708	1,158,048	1,120,428	1,164,223	1,418,103
Smoked, dried, and n.e.i.	cwt. 13,633	15,592	13,815	11,362	17,793
	£ 56,190	63,167	51,831	45,079	62,984
Total	cwt. (b) 230,390	300,043	306,133	312,342	349,522
	£ 1,124,583	1,488,549	1,481,518	1,547,662	1,810,341

(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 Canada, the United States of America, Norway, and the United Kingdom. The potted fish comes chiefly from the United Kingdom, while the South African Union supplied the largest proportion of the fresh fish in 1926-27, the bulk of the remainder coming from the United Kingdom and New Zealand. The small import of oysters is supplied by New Zealand.

2. Exports of Fish.—The exports of local fish produce for the five years 1922-23 to 1926-27 are given hereunder :—

FISH (AUSTRALIAN PRODUCE).—EXPORTS, 1922-23 TO 1926-27.

Classification.	1922-23.	1923-24.	1924-25.	1925-26.	1926-27.
Fish, fresh, smoked, or preserved by cold process	cwt. 9,692	5,681	3,449	1,498	435
	£ 66,104	33,259	23,710	7,606	4,072
Preserved, in tins, dried, salted, etc.	cwt. 162	476	386	261	184
	£ 433	1,185	1,401	491	371
Total	cwt. 9,854	6,157	3,835	1,759	619
	£ 66,537	34,444	25,111	8,097	4,443

The quantity of fresh fish exported from Australia is trifling, and the amount of £4,072 shown in the table above consists chiefly of cured bêche-de-mer exported to Egypt 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 1922-23 to 1926-27 :—

PEARL, TORTOISE, AND TROCHUS-SHELL.—EXPORTS, AUSTRALIA,
1922-23 TO 1926-27.

Article.		1922-23.	1923-24.	1924-25.	1925-26.	1926-27.
Pearl-shell	.. { cwt.	41,027	48,017	44,112	48,631	45,451
	.. { £	320,602	377,313	413,095	391,695	352,626
Tortoise-shell	.. { lb.	2,812	3,308	2,432	4,993	3,662
	.. { £	2,012	2,574	2,025	4,730	3,364
Trochus-shell	.. { cwt.	13,196	12,072	16,552	19,787	22,851
	.. { £	25,095	23,142	47,892	76,280	72,812

The bulk of the pearl-shell exported during 1926-27 was consigned to the United States of America and the United Kingdom, the respective values of the shipments amounting to £207,339 and £142,745, while trochus-shell to the value of £68,847 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.