

CHAPTER XXIII.

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.

* 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).

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. The reports submitted by these Committees to a further conference held in July, 1929, were adopted and forwarded to the Federal and State Governments, with a recommendation that the necessary action be taken to carry out the procedure outlined therein.

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.

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 £76,116, £71,714, £44,515 and £44,682 was exported from Australia during 1927-28, 1928-29, 1929-30 and 1930-31 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 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 Fishing 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, 1930.

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 ..	1,381	257,962	3,797	215,871	17,287	604,438	(c)91,365
Victoria ..	962	137,207	1,643	113,757	14,203	159,300	7,100
Queensland ..	995	72,183	1,922	92,800	(d)11,635	150,807	(e)8,618
South Australia ..	760	150,000	852	6122,683	(a)	176,800	(f)
Western Australia..	313	55,453	692	42,400	12,294	125,260	4,917
Tasmania ..	264	55,900	367	26,308	36,586	52,650	21,950
Northern Territory	6	600	20	40	..	480	..
Total ..	4,681	729,305	9,293	613,859	92,005	1,269,735	133,950

(a) Not available.
and 1,650 dozen crabs.

(b) Estimate.
(d) Crabs.

(c) Including £65,435, the value of 9,289 cwt. prawns
(e) Including 50 turtles valued at £25. (f) Included

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

GENERAL FISHERIES.—AUSTRALIA.

Particulars.	1926.	1927.	1928.	1929.	1930.
No. of boats engaged ..	4,940	4,843	5,213	4,546	4,681
No. of men employed ..	7,745	7,987	8,600	8,979	9,293
Fish obtained—					
Quantity ..	cwt. 403,156	443,984	546,949	650,518	613,859
Value ..	£ 1,059,039	1,139,218	1,435,427	1,439,355	1,269,735
Lobsters obtained—Value	£ 1108,092	1140,439	1155,890	1151,208	1133,950

(a) Exclusive of South Australia.

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

EDIBLE OYSTER FISHERIES, 1930.

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 ..	718	36,807	638	5,142	44,576	82,784
Victoria ..	10	200	10	10	17	50
Queensland ..	61	4,285	92	398	10,071	17,308
South Australia (a)	..	..	..	..	..	..
Western Australia	..	..	..	..	..	..
Tasmania ..	(a)	(a)	(a)	(d)	510	(c) 6,270
Northern Territory	1	100	1	1	40	10
Total (b) ..	790	41,392	741	5,551	55,214	106,422

(a) Included with General Fisheries.
value of scallops. (d) Not available.

(b) Exclusive of South Australia.

(c) Including £5,750.

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

EDIBLE OYSTER FISHERIES.—(a) AUSTRALIA.

Particulars.	1926.	1927.	1928.	1929.	1930.
No. of boats engaged ..	1,351	813	835	808	790
No. of men employed ..	752	790	833	804	741
Oysters obtained—					
Quantity .. cwt.	65,992	67,422	64,991	70,773	55,214
Value £	125,084	129,215	121,358	134,223	106,422

(a) Exclusive of South Australia.

(iii) *Pearls, Pearl-shell and Trepanng.* 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 trepanng or bêche-de-mer (*Holothuria*), both in tropical Australian waters and those of Papua and the mandated area of New Guinea. Particulars as returned for the year 1930 are as follow :—

PEARL, PEARL-SHELL, AND BÊCHE-DE-MER FISHERIES, (a) 1930.

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 (b)	Value of Bêche-de-mer obtained.	Value of Tortoise shell obtained.
	No.	£	No.	Tons.	£	£	£	£
Queensland (c) ..	109	80,000	1,024	399	113,399	1,075	13,614	330
Western Australia(c)	127	58,524	777	671	104,299	7,597	470	55
Northern Territory	22	17,600	176	225	33,750	(d)	700	(d)
Australia ..	258	156,124	1,977	1,295	251,448	8,672	14,784	385

(a) No pearl-shelling industry in New South Wales, Victoria, South Australia, and Tasmania.
 (b) Incomplete ; as returned. (c) Also trochus-shell to the value of £39,604 in Queensland and £35 in Western Australia. (d) No details 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.

Particulars.	1926.	1927.	1928.	1929.	1930.
No. of boats engaged ..	348	297	307	289	258
No. of men employed ..	2,893	2,062	2,407	2,334	1,977
Pearl-shell obtained—					
Quantity .. tons	2,098	2,243	2,212	3,112	1,295
Value £	302,848	332,739	345,227	455,578	251,448
Pearls obtained (a)—					
Value £	39,655	22,863	29,615	23,017	8,672
Bêche-de-mer obtained—					
Quantity .. tons	(b)	(b)	(b)	(b)	(b)
Value £	31,186	14,693	17,893	24,706	14,784
Tortoise-shell exported—					
Value £	3,364	2,894	3,113	693	921
Trochus-shell exported—					
Value £	72,812	76,116	71,714	44,515	44,682

(a) Incomplete ; as returned.

(b) Not returned.

2. Fish Preserving.—To encourage the industry, the Federal Parliament provided a bounty of $\frac{3}{4}$ 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 1930 is given hereunder :—

FISHERIES.—REVENUE, 1930.

State or Territory.	Licences.	Leases.	Fines and Forfeitures.	Other Sources.	Total.
	£	£	£	£	£
New South Wales ..	1,651	12,034	211	368	14,264
Victoria	1,382	126	341	..	1,849
Queensland	3,152	2,457	114	30	5,753
South Australia ..	1,716	..	23	..	1,739
Western Australia ..	1,746	63	188	68	2,065
Tasmania	949	..	..	91	1,040
Northern Territory ..	581	1	..	..	582
Total	11,177	14,681	877	557	27,292

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

FISHERIES.—REVENUE, AUSTRALIA.

Particulars.	1926.	1927.	1928.	1929.	1930.
	£	£	£	£	£
Licences	9,890	11,769	12,864	11,614	11,177
Leases	16,439	16,531	16,498	16,332	14,681
Fines and Forfeitures ..	841	748	1,216	1,105	877
Other Sources	1,477	739	760	942	557
Total	28,647	29,787	31,338	29,993	27,292

§ 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 follow :—

FISH.—IMPORTS, AUSTRALIA.

Classification.		1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
Fresh (oysters) ..	cwt.	2,115	1,488	1,308	508	3,793
	£	1,699	1,157	958	420	1,815
Fresh, or preserved by cold process	cwt.	61,151	75,835	72,866	67,503	43,370
	£	180,773	232,894	221,999	206,357	113,317
Potted	(a)				(a)	4,515
	£	146,782	148,424	158,797	137,046	76,154
Preserved in tins ..	cwt.	268,463	209,791	252,379	250,306	117,198
	£	1,418,103	1,141,493	1,265,510	1,342,016	501,080
Smoked, dried, and n.e.i.	cwt.	17,793	13,837	14,007	13,280	9,702
	£	62,984	51,723	48,430	46,556	27,148
Total	cwt.	(b) 349,522	(b) 300,951	(b) 340,560	(b) 331,597	178,578
	£	1,810,341	1,575,691	1,695,694	1,732,395	719,514

(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, which also supplied the largest proportion of fresh fish in 1930-31; the bulk of the remainder coming from New Zealand and the Union of South Africa. The small import of oysters is supplied by New Zealand.

2. Exports of Fish.—The exports of local fish produce for the five years 1926-27 to 1930-31 are given hereunder :—

FISH (AUSTRALIAN PRODUCE).—EXPORTS.

Classification.		1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
Fish, fresh, smoked, or preserved by cold process ..	cwt.	435	496	496	684	688
	£	4,072	4,857	3,674	5,161	6,006
Preserved, in tins, dried, salted, etc.	cwt.	184	283	27	121	101
	£	371	548	40	818	383
Total ..	cwt.	619	779	523	805	789
	£	4,443	5,405	3,714	5,979	6,389

The quantity of fresh fish exported from Australia during 1930-31 was small, amounting in value to only £1,137. The balance, consisting of smoked and dried fishery products, was exported chiefly to Hong Kong and Egypt.

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 1926-27 to 1930-31 :—

PEARL, TORTOISE, AND TROCHUS-SHELL.—EXPORTS, AUSTRALIA.

Article.		1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
Pearl-shell ..	cwt.	45,451	44,119	45,058	58,503	48,353
	£	352,026	337,469	339,016	450,615	354,992
Tortoise-shell ..	lb.	3,662	4,506	4,311	1,541	2,160
	£	3,364	2,894	3,113	693	921
Trochus-shell ..	cwt.	22,851	21,968	18,814	11,184	14,056
	£	72,812	76,116	71,714	44,515	44,682

The bulk of the pearl-shell exported during 1930-31 was consigned to the United States of America and the United Kingdom, the respective values of the shipments amounting to £274,017 and £72,145, while trochus-shell to the value of £44,279 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. A description of the trawling grounds discovered, data regarding oceanography to the east of Australia, and a list of the publications of the Department will be found on pp. 333 to 335 of Year Book No. 14.

In accordance with the recommendations of the Australian Fisheries Conference of 1927-29 the Commonwealth Government decided to construct a vessel to continue investigations, but the project has been temporarily postponed.

§ 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. Early in the year 1923 the Government discontinued trawling operations, as the venture was not a commercial success. The operations of the trawlers, however, revealed some of the richest trawling areas in the world, and these localities are being successfully exploited by private enterprise.