SECTION XI.

FISHERIES AND PISCICULTURE.

§ 1. Commercial Fisheries.

1. **Early Fishing Excursions of Malays.**—Economic fisheries in Australia date back to a period long before the exploration of the northern and north-western shores of the continent by Tasman and Dampier. The Malays of Macassar, in their proas, made fishing excursions amongst the reefs and shoals skirting the coast, collecting and curing trepang and bêche-de-mer, a practice continued up to the present time. They arrive ordinarily at the beginning of the north-west monsoon, and return to Macassar after a few weeks, as the south-east monsoon sets in. Besides the bêche-de-mer, the Malays barter rice, tobacco, and gaudy handkerchiefs for tortoise shells, pearl shell and seed pearls, collected by the aborigines.

2. **Fish Stocks.**—Australasia, extending from 10° to 45° south latitude, produces an abundant and varied fish fauna, embracing both tropical and temperate characters, including destructive, as well as edible species, and on its shores both crustaceans and amphibians. In the rivers and lakes, indigenous varieties thrive side by side with imported ones, introduced and acclimatised for industrial and sporting purposes by Governments and angling societies. Exploitation of aquarian products—for some classes of fish for the whole year, for others during the breeding season only, or until a certain size is attained—is expressly forbidden where necessary ; areas are closed against net-fishing, and a minimum size of mesh for nets is sometimes fixed. Even where the State has not interfered, the sea-fishers in some districts have made regulations for the purpose of controlling the market supply, and these they rigorously observe.

3. **Economic Fisheries.**—Australia's food fishes, though abundant, have not led to the development of an industry of national importance, though fresh and salt water fisheries pay handsomely in other countries, and could no doubt do so in Australia. It has been authoritatively stated that "The collection and distribution of the knowledge of the world's work in fish-culture would make an acre of water more valuable than an acre of land, and the toilers of the sea could reap manifold their present harvest." This would involve also better arrangements for the distribution of fish than exist at present.

4. **Lake and River Fishing.**—Lake and river fishing take even lower industrial rank than marine fishing, though local catches furnish on the aggregate a not inconsiderable amount of food supply.

5. **Distribution of Supplies.**—The economic arrangements as to distribution impose at present serious difficulties on the development of fishing generally, since there is a wide divergence between the price paid by the consumer and the return received by the producer.

6. **Oyster Fisheries.**—Natural oyster beds, whose ample product is of excellent quality, exist in the shallow waters of inlets and estuaries of several parts of the Australian foreshore. By husbanding the natural crop, and by judicious transplanting, the oyster output has been very materially augmented. The areas are leased by the Government to private persons, lengths of foreshore being taken up and profitably exploited.

7. **Pearl-shelling.**—Pearl-shelling is carried on in the tropical districts of Queensland, South Australia (Northern Territory), and Western Australia. The pearl oyster inhabits the whole northern coast from Cape York to North-west Cape, a length of shore of 2000 miles. The aggregate value of the pearls taken is not large, it being estimated that upwards of 4000 shells may be opened without discovering a pearl worth £1; but the shells are marketed in considerable quantities, and the industry gives employment to many people, both directly and indirectly. A great number of those engaged in the raising of the produce are coloured, and consist of Japanese, Chinese, and Malays.. The fishing is now generally conducted with the aid of diving apparatus, in water varying from four to twenty fathoms in depth. The inshore banks and shallower waters have been almost entirely worked out, and the deeper waters, from three to twenty miles off shore, are now being worked.

In tropical Queensland pearl-shell diving is actively pursued, and is by far the most important of the fishing industries, Torres Straits being the centre of production. With it the pursuit of bêche-de-mer is carried on, and tortoise-shell is obtained on the coasts. The industry is supervised by the Marine Department, which administers the Fisheries Acts. A statutory limit is fixed for the minimum size of shell that may be gathered. Experiments have been made in cultivating the pearl oyster on suitable banks. A small variety has been discovered at Stradbroke Island, in Moreton Bay, but the commercial value of the produce is small.

The discovery of mother-of-pearl shell in Port Darwin Harbour in 1884 caused a rush of pearling boats from Torres Straits. But the muddiness of the water, rendered almost opaque by the heavy tides, prevented the divers from satisfactorily working the area and led to an abandonment of the industry within three years from its birth. Prospecting in new patches has since been carried on and the industry has been revived. In addition to pearl and trepang fishing, dry-salted fish is also exported from the Territory.

In Western Australia the centres of the industry are Broome, Cossack, Onslow, and Shark Bay. There are two distinct species of mother-of-pearl shell exported. The principal trade is done in the large shells (*Meleagrina margaritifera*), limited in distribution to tropical waters and extending in habitat from Exmouth Gulf northwards. It is laid under contribution for the larger manufactured articles, such as dessert and fish knife and fork handles, large buttons, and inlaid work. The largest and finest pearls are obtained from it. The second species is that known commercially as the Shark Bay variety (*Meleagrina imbricata*). It is of smaller size and used chiefly for the manufacture of small buttons. The pearls found are of varying value. The Shark Bay pearl-shell is collected by dredging in the deeper waters and gathered by hand from off the shallow banks at low tide.

The system of licensing boats and men engaged in the pearling industry restricts in the States where it is in force, indiscriminate exploiting of the areas, and returns a small revenue.

§ 2. Fisheries Statistics.

1. **Departmental Estimates.**—Statistics of the fishing industry have not hitherto been systematically collected. The returns given below have been furnished by the States departments, and estimates, where they have been made, are official. The data do not lend themselves to presentation on a uniform scheme, and are therefore given for the individual States.

2. **New South Wales.**—Much of the information can be regarded as approximate only. An estimate of the number of men employed gives an annual average of 1730, with 849 boats in use. The average annual quantity of fish marketed per year is 5,790,400 lbs., value £193,013.

GENERAL FISHERIES, NEW SOUTH WALES (EXCLUSIVE OF EDIBLE OYSTERS), 1901 TO 1906.

—	1901.	1902.	1903.	1904.	1905.	1906.
Total take of—						
Fish ... ... Baskets	90,618	118,823	141,280	125,290	123,222	128,854
Crayfish ... ... Dozen	2,161	4,148	4,436	2,757	7,104	4,916

FISHERMEN'S AND FISHING BOAT LICENSES, NEW SOUTH WALES, 1901 TO 1906.

Licenses.	1901.	1902.	1903.	1904.	1905.	1906.
Fishermen's	945	1,204	2,076	2,095	2,091	1,986
Fishing boat	441	518	1,043	1,019	1,061	1,047

REVENUE FROM FISHERIES, NEW SOUTH WALES, 1901 TO 1906.

Year.	From Licenses.	From Leases.	Fines and Forfeitures.	Oyster Spat.	Total.
	£	£	£	£	£
1901	791	3,567	148	*	4,514†
1902	950	3,987	103	*	5,040
1903	1,080	4,248	32	72	5,432
1904	1,010	4,646	193	231	6,080
1905	1,037	4,587	130	75	5,829
1906	1,043	4,796	58	234	6,131

* No oyster spat was sold until 1903. † Includes £8 from other sources.

EDIBLE OYSTER FISHERIES, NEW SOUTH WALES, 1901 TO 1906.

Year.	Number of Leases Granted.	Areas under Lease for Oyster Culture.		Oysters taken.	
		Deepwater.	Foreshore.	Quantity.	Value.
		Acres.	Yards.	Bags.	£
1901 ...	239	6¼	341,644	18,473	27,709
1902 ...	202	6¼	382,069	16,157	24,235
1903 ...	121	6¼	391,942	13,593	20,389
1904 ...	219	...	435,550	12,613	19,000
1905 ...	123	27	404,064	13,858	20,787
1906 ...	155	64	467,592	15,006	22,509

A considerable proportion of the foreshores and shallow areas of the river estuaries are excellent natural oyster-beds, and with constant attention to these beds the annual yield of oysters could no doubt be materially increased. As the table shews, it was less in the years 1903 to 1906 than it had been in the two preceding years.

3. **Victoria.**—Licenses to net in certain waters are issued without fee. Leases have been granted for oyster fisheries, but the return is insignificant. No separate revenue is credited to fisheries, the small amount derived by way of fines being credited to general revenue.

GENERAL FISHERIES (EXCLUDING EDIBLE OYSTERS), VICTORIA, 1901 TO 1906.

Year.	No. of Boats Engaged.	Value of Boats and Equipment.	No. of Men Employed.	Total Take of		Value of Take.	
				Fish.	Crayfish.	Fish.	Crayfish.
	No.	£	No.	cwt.	doz.	£	£
1901	622	28,094	982	72,517	19,003	45,017	6,269
1902	668	32,780	1,038	111,579	19,359	68,194	6,381
1903	651	33,163	1,084	116,750	18,823	70,252	6,258
1904	654	34,610	1,089	113,650	20,560	67,009	8,014
1905	660	34,600	1,039	96,000	19,662	58,230	7,496
1906	693	33,789	1,120	91,700	20,517	55,640	8,720

FISHERMEN'S AND FISHING BOAT LICENSES, VICTORIA, 1901 TO 1906.

Licenses.	1901.	1902.	1903.	1904.	1905.	1906.
Fishermen's	46	38	175	185	67	39
Fishing boat	19	22	42	40	36	38

EDIBLE OYSTER FISHERIES, VICTORIA, 1901 TO 1906.

Year	1901.	1902.	1903.	1904.	1905.	1906.
Number of leases granted ...	5	5	4	4	2	Nil
Length of foreshore in leases ft.	86,610	39,480	7,800	7,200	3,000	...

4. **Queensland.**—No account is kept of the value of boats and equipment, but an estimate, believed to be a very close approximation, has been furnished. An estimate which has been furnished of the total take of fish, gives 1450 tons as the annual average for the years 1901 to 1906, corresponding to an average annual value of £20,300. There are no lobster fisheries. The amount put up in the fish-preserving establishments is not great, but the demand for fish locally tinned is growing. The quantities and values of oysters from 1901 to 1904 given are those exported. Since the latter year the information has not been recorded, and no records are kept of those placed on the local market. The length of foreshore under lease cannot be accurately given. The deep water in Moreton Bay and Sandy Strait is leased as dredge sections, which extend across the channels to the islands, and contain from 100 to 1000 acres each. Within these sections the majority of the oyster banks (ground containing up to 30 acres lying within two feet below low-water mark) are situated on the foreshores of the islands, and on the mud and sand flats

GENERAL FISHERIES (EXCLUDING EDIBLE OYSTER AND PEARL-SHELL), QUEENSLAND, 1901 TO 1906.

Year	1901.	1902.	1903.	1904.	1905.	1906.
Number of boats engaged	240	313	326	245	272	251
Value of boats and equipments £	5,850	8,240	8,700	7,357	7,600	6,795
Number of Men Employed	496	602	602	498	511	446

REVENUE FROM FISHERMEN'S BOAT LICENSES, QUEENSLAND, 1901 TO 1906.

Licenses.		1901.	1902.	1903.	1904.	1905.	1906.
Fishermen's	£	248	301	301	249	256	223
Fishing boat	£	240	313	326	245	272	251

REVENUE FROM FISHERIES, QUEENSLAND, 1901 TO 1906.

Year		1901.	1902.	1903.	1904.	1905.	1906.
From licenses	£	488	614	627	494	528	474
Fines and forfeitures ...	£	...	15	...	2	...	11
Other sources	£	100	104	115	110	127	100
Total	£	588	733	742	606	655	585

EDIBLE OYSTER FISHERIES, QUEENSLAND, 1901 TO 1906.

Year.	Number of Boats Engaged.	Value of Boats and Equipment.	Number of Men Employed.	Number of Leases Granted.	Oysters Exported.	
					Quantity.	Value.
		£			Cwt.	£
1901... ...	83	4,510	127	575	21,658	14,370
1902... ...	118	4,645	189	679	20,682	16,120
1903... ...	132	4,800	172	635	19,482	15,887
1904... ...	109	5,215	171	652	23,900	20,073
1905... ...	130	5,075	200	675	*	*
1906... ...	144	7,025	200	714	*	*

* Information not recorded.

PEARL-SHELL AND BECHE-DE-MER FISHERIES, QUEENSLAND, 1901 TO 1906.

Year.	Number of Boats Engaged.	Value of Boats and Equipment.	Number of Men Employed.	Pearl-shell.		Bêche-de-mer.		Tortoise-shell.	
				Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		£		Tons.	£	Tons.	£	lbs.	£
1901 ...	359	99,300	2,188	924	105,403	52	7,399	5,579	1,935
1902 ...	343	82,800	2,187	961	129,267	71	9,444	3,608	1,521
1903 ...	354	93,300	2,308	970	165,551	59	7,270	2,801	1,326
1904 ...	378	105,900	2,509	798	108,130	45	5,865	2,209	1,027
1905 ...	366	104,400	1,321	543	62,736	105	10,624	2,413	1,320
1906 ...	211	63,300	1,314	444	47,423	131	13,938	3,659	2,007

No record has been taken of the value of pearls obtained, and it is impossible to estimate it.

5. **South Australia and Northern Territory.**—There are no records of the number and value of boats, number of men employed, and take and value of fish. The Act imposing licenses was passed in 1904. In 1905, 600 fishermen's licenses were issued, and 686 in the following year. The revenue from general fisheries was £552 in 1905, made up of £551 from licenses and £1 fine; and £330 in 1906, £267 being from licenses and £63 fines and forfeitures. There are no fish-preserving establishments in South Australia.

From oyster fisheries the revenue in the years 1901, 1902, 1903, and 1904 was only £6 altogether, derived from leases. In 1905 it was £19, all from licenses; and in 1906 £17 from the same source. The figures for edible oyster fisheries, as completely as they can be furnished, are:—

EDIBLE OYSTER FISHERIES, SOUTH AUSTRALIA, 1901 TO 1906.

Year.	Number of Boats Engaged.	Value of Boats and Equipment.	Number of Men Employed.	Number of Leases Granted.	Length of Foreshore in Leases.
		£			Feet.
1901	...	...	...	1	100 x 50
1902	...	...	...	1	100 x 50
1903	...	...	...	1	100 x 50
1904	5	550	6	1	100 x 50
1905	7	720	8	1	100 x 50
1906	6	620	8	1	100 x 50

FISHING INDUSTRY, NORTHERN TERRITORY, 1901 TO 1904.

Year.	No. of Pearling Boats Engaged.	Value of Pearls Taken.	Pearl-shell.		Tortoise-shell.		Dried Fish.		Bêche-de-mer.	
			Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		£	Tons.	£	lbs.	£	lbs.	£	Tons.	£
1901	44	2,000	141	17,168	80	50	28,336	342	64	2,628
1902	50	956	138	20,497	...	...	32,144	422	121	6,110
1903	50	1,183	126	28,391	...	...	40,096	581	105	3,870
1904	49	1,000	133	18,526	...	...	29,680	428	44	1,865

6. **Western Australia.**—In Western Australia the fishing industry has attained considerable importance, as will be seen from the tabular statements below:—

GENERAL FISHERIES (EXCLUDING EDIBLE OYSTER AND PEARL-SHELL), WESTERN AUSTRALIA, 1901 TO 1906.

Year.	Number of Boats Engaged.	Value of Boats and Equipment.	Number of Men Employed.	Total Take of		Value of Take.	
				Fish.	Lobsters.	Fish.	Lobsters.
		£		Tons.	Doz.	£	£
1901	218	8,000	400	1,300	6,610	39,000	1,983
1902	205	8,400	453	1,500	6,900	45,000	2,070
1903	250	10,400	590	1,500	6,990	45,000	2,097
1904	251	11,000	605	1,700	7,500	46,000	2,250
1905	249	11,300	545	1,351	7,000	40,530	2,000
1906	237	12,000	504	1,316	7,000	39,480	2,100

FISHERMEN'S AND FISHING BOAT LICENSES, WESTERN AUSTRALIA, 1901 TO 1906.

Licenses.	1901.	1902.	1903.	1904.	1905.	1906.
Fishermen's	400	453	590	605	545	504
Fishing boat	218	205	250	251	249	237

REVENUE FROM FISHERIES, WESTERN AUSTRALIA, 1901 TO 1906.

Year.	From Licenses.	From Leases.	Fines and Forfeitures.	Total.
	£	£	£	£
1901	870	187	13	1,070
1902	920	200	20	1,140
1903	943	231	25	1,199
1904	951	443	42	1,436
1905	927	195	24	1,146
1906	1,000	375	250*	1,625

* In 1906, 3000 yards of net were forfeited.

PEARL AND PEARL-SHELL FISHERIES, WESTERN AUSTRALIA, 1901 TO 1906.

Year.	Vessels.		Labour.									Quantity of Pearl-shell.	Value of Pearls.	Value of Pearl-shell.	Value of Bêche-de-mer
					Asiatic.										
	Number.	Tonnage.	White.	Aboriginal.	Chinese.	Japanese.	Malay.	Manilla.	Others.	Total Asiatic.	Total Labour.				
												Tons.	£	£	£
1901 ...	232	3,330	132	65	11	280	699	307	61	1,358	1,555	832	30,637	95,568	120
1902 ...	267	3,753	154	75	12	362	787	294	72	1,527	1,756	970	45,080	142,615	162
†1903 ...	337	5,083	193	59	15	665	1,031	283	71	2,065	2,317	996	42,648	128,589	...
†1904 ...	403	5,737	217	78	12	812	1,235	286	60	2,405	2,700	1,340	41,140	129,099	...
†1905 ...	323	4,441	167	69	8	616	1,082	232	54	1,992	2,228	1,155	41,685	119,786	1,045
1906 ...	368	5,118	181	95	16	815	1,021	211	116	2,179	2,455	1,246	59,349	132,065	547

† Incomplete.

7. **Tasmania.**—There are no licenses charged against fishermen or fishing vessels, and consequently no records are kept regarding their numbers or value of equipment. The estimated number of boats engaged in the industry is eighty-one, average crew two men, average value per boat £70. The license revenue is almost entirely obtained for rights to angle for salmon and trout with rod and line. Oyster fisheries are not worked, except in a most primitive way.

REVENUE FROM FISHERIES, TASMANIA, 1901 TO 1906.

Year.	From Licenses.	Fines and Forfeitures.	Other Sources.	Total.
	£	£	£	£
1901	569	8	75	652
1902	598	4	18	620
1903	715	14	4	733
1904	665	21	...	686
1905	607	7	...	614
1906	595	1	...	596

§ 3. Oversea Trade.

That the development of the fishing industry in Australia leaves much to be desired is evident from the fact that the import of preserved fish into the Commonwealth i large, the export inconsiderable. The figures for the trade are as follow:—

IMPORTS OF FISH, COMMONWEALTH, 1901 TO 1906.

Classification.		1901.[1]	1902.[1]	1903.	1904.	1905.	1906.
Fresh (oysters)	cwt.	...	...	7,269	9,468	8,195	9,225
,, ,, ...	£	3,185	4,264	3,526	4,309	3,564	4,075
Fresh, smoked, or preserved by cold process	cwt.	...	...	8,391	8,403	11,386	9,591
,, ,, ,,	£	6,639	6,282	14,759	12,060	16,507	14,632
Potted ...	cwt.	...	...	...	...	...	...
,, ...	£	3,434	3,765	12,898	9,747	8,508	11,934
Preserved in tins ,, ,, ,, N.E.I.[2] ... ,, ...	cwt.	135,300	132,526	118,602 272,572	106,007 249,054	120,213 288,371	135,872 310,656
	£	320,725	293,463	20,913 30,905	15,736 24,662	16,992 27,898	17,336 29,729
Total ...	cwt.[3]	135,300	132,526	155,175	139,614	156,786	172,024
,, ...	£	333,983	307,774	334,660	299,832	344,848	371,026

1. Quantities for 1901 and 1902 are not available for the first three items. 2. Denotes not elsewhere included in the tariff list. 3. Exclusive of first three items for 1901 and 1902, and of potted fish for 1903 to 1906.

The countries of origin of the last two items are shewn in the following table :—

IMPORTS OF PRESERVED FISH, COMMONWEALTH, 1901 TO 1906.

Country whence Imported.		1901.	1902.	1903.	1904.	1905.	1906.
United Kingdom ...	cwt.	67,203	74,619	86,174	70,888	54,852	69,453
,, ,, ...	£	158,008	161,741	173,836	138,534	105,155	131,023
Canada	cwt.	6,709	4,791	5,728	8,564	20,665	15,861
,, ...	£	15,259	10,746	12,470	23,148	54,132	39,455
Hongkong	cwt.	1,764	2,034	1,743	4,261	3,833	3,244
,, ...	£	5,497	6,213	5,428	11,235	10,614	8,438
New Guinea... ...	cwt.	1,336	2,821	2,273	942	...	1,004
,, ...	£	4,772	4,659	3,988	2,311	...	2,000
New Zealand ...	cwt.	1,250	1,282	1,295	942	1,439	1,239
,, ...	£	3,496	4,821	4,082	4,643	7,439	4,517
Other British Possessions	cwt.	888	359	229	257	290	209
,, ,,	£	2,568	1,126	702	701	639	618
Belgium	cwt.	258	265	209	495	576	1,247
,, ...	£	1,066	1,007	954	1,434	2,130	3,693
China	cwt.	900	1,123	1,524	1,111	641	396
,, ...	£	3,747	2,932	2,995	2,772	1,196	1,365
France	cwt.	772	1,541	4,901	312	940	542
,, ...	£	4,212	5,394	19,707	1,538	3,632	2,014
Germany	cwt.	1,130	1,113	2,652	1,748	2,333	3,945
,, ...	£	4,564	3,919	6,174	6,052	7,527	13,234
Japan	cwt.	185	114	485	881	110	248
,, ...	£	728	261	1,074	2,282	265	574
Netherlands... ...	cwt.	...	...	25	36	166	617
,, ...	£	...	...	31	65	727	2,492
Norway	cwt.	364	1,259	1,011	1,034	1,571	2,267
,, ...	£	1,507	2,379	3,397	4,130	6,635	9,941
Portugal	cwt.	318	208	1,933	1,172	1,701	5,972
,, ...	£	1,520	632	6,167	3,582	5,774	15,896
United States ...	cwt.	51,859	39,625	28,851	28,999	47,754	46,559
,, ,, ...	£	112,551	85,607	60,819	70,987	109,485	104,013
Other Foreign Countries	cwt.	353	1,372	482	101	334	405
,, ,,	£	1,230	2,026	1,653	302	919	1,112
Total Quantity ...	cwt.	135,299	132,526	139,515	121,743	137,205	152,208
Total Value ...	£	320,725	293,463	303,477	273,716	316,269	340,385

EXPORTS OF FISH, 1901 TO 1906.

Article.		1901.[1]	1902.[1]	1903.	1904.	1905.	1906.
Fish, smoked, or preserved by cold process	cwt.	...	...	70	35	416	264
	£	376	957	117	48	641	468
N.E.I.[2]	cwt.	...	...	2,127	2,713	6,234	6,128
,, ...	£	13,216	19,172	15,413	12,485	23,145	24,589
Total	cwt.	...	...	2,197	2,748	6,650	6,392
	£	13,592	20,129	15,530	12,533	23,786	25,057

1. Quantities for 1901 and 1902 are not available. 2. See note on page 393.

EXPORTS OF PEARL-SHELL, 1901 TO 1906.

Country to which Exported.		1901.	1902.	1903.	1904.	1905.	1906.
United Kingdom ...	cwt.	29,977	40,273	40,955	40,634	46,462	35,890
,, ,, ...	£	183,069	278,805	365,488	243,025	252,373	216,798
Hong Kong	cwt.	3,645	2	76	208	1	1
,, ...	£	20,440	6	151	594	15	3
Other British Possessions	cwt.	42	...	...	6	...	...
,, ,,	£	276	...	...	65	...	...
Germany	cwt.	429	131	115	74	15	22
,, ...	£	872	412	1,050	672	77	185
United States of America	cwt.	28	1,793	701	...	...	768
,, ,,	£	160	14,053	5,802	...	...	4,487
Other Foreign Countries	cwt.	581	878	503	1,436	1,176	836
,, ,,	£	1,141	1,171	175	566	459	383
Total	cwt.	34,702	43,077	42,350	42,358	47,654	37,517
	£	205,958	294,447	372,666	244,922	252,924	221,856

§ 4. Development of the Industry.

1. **Transport and Marketing.**—The large importations of fish into the Commonwealth indicate the scope for the development of the local fishing industry. Where quick transport by rail or steamer is not provided, the catch of fish in tropical or subtropical waters could only be locally consumed, since speedy marketing is essential. Adequate refrigerating apparatus on railway waggons and coasting steamers, and quick transport to centres of population might, however, alter the economic condition in a satisfactory direction. At the present time the natural wealth of Australia in fish is exploited only to a very slight extent.

2. **Experiment and Culture.**—(i.) *Trawling.* In many respects the fishing industry is capable of modification and development. A good deal has been effected by the States Governments in the way of experiment and culture, but much yet remains to be done before the industry is at all commensurate with the industrial development and consuming capacities of the Commonwealth. The Federal Government has taken in hand the conduct of trawling experiments. The existing fishing is inshore, the supplies being obtained from the vicinity of river estuaries and lakes. Deep-sea fishing, as established and carried on in older countries, is, so far, practically non-existent for Australia.

(ii.) *New South Wales.* In New South Wales, trawling experiments have shewn that considerable areas along the coast are suitable, but practical work on commercial

lines is yet undeveloped. The stocking of rivers and lakes was begun by private enterprise, since which, Government aid has been granted, and eminent success has been attained among other fish with the Californian rainbow trout. Young fry are distributed annually from the trout hatchery at Prospect, and the natural reproduction of the fish in the streams that issue from the mountain ranges is regarded as a valuable asset. In 1902 attempts were successfully made to transport European fishes alive to Australia. A marine hatchery and biological station has been completed at Gunnamatta Bay, Port Hacking, by means of which it is proposed to gradually acclimatise suitable fishes. The natural oyster beds are also being extended.

(iii.) *Victoria.* In Victoria very little has been done in the way of hatcheries and culture, and that little has been mainly the work of private individuals and angling clubs. Trawling experiments were conducted some years ago, but the results were inconclusive.

(iv.) *Queensland.* In Queensland artificial hatching was undertaken by the Acclimatisation Society of Southern Queensland. Here, also, the American rainbow trout has succeeded, fry being distributed from the hatchery at Spring Creek, Killarney. The lung-fish, formerly known only in two streams, has been successfully transplanted to several other streams. Oyster beds are also being developed in several parts, and improved methods of culture have largely increased the output. The trawling experiments of 1901 and 1902 point to the improbability of a great trawling industry being established. The trawling area off Queensland would be a mere strip, because of the presence of the coral region immediately to the north and the fact that the sea deepens very rapidly to the east.

(v.) *South Australia.* In South Australia the indiscriminate exploitation of the Port Lincoln and adjacent oyster beds led to the necessity for their being closed from time to time to prevent the district from being altogether worked out. The future outlook has in this way been improved as regards oyster culture.

(vi.) *Western Australia.* In Western Australia the coastal waters have been examined to ascertain whether suitable trawling grounds exist. The Acclimatisation Committee has successfully hatched and liberated trout, the Mundaring weir being stocked with the Loch Leven variety. Perch were stocked in the lakes near Wanneroo Caves.

(vii.) *Tasmania.* Considerable distributions of ova and fry are annually made from the River Plenty in Tasmania. Besides the supplies to Tasmanian waters, the northern States are also recipients of ova. The figures for the five years 1900-1 to 1904-5 are:—

DISTRIBUTION OF OVA AND FRY FROM THE BREEDING PONDS, RIVER PLENTY, 1900-1 TO 1904-5.

FRY (LOCH LEVEN, RAINBOW, BROWN, AND SALMON TROUT), 1900-1 TO 1904-5.

—	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.
Liberated in northern rivers...	84,500	371,000	15,500	82,521	276,250
,, southern ,, ...	97,000	300,000	20,500	59,305	258,500
,, inland lakes ...	6,000	134,500	5,000	8,000	...
Total	187,500	805,500	41,000	149,826	534,750

In 1900-1, 43,000 trout ova were forwarded to Victoria, 4500 to Queensland, and 63,300 to New South Wales. In 1901-2, 100,000 trout ova were forwarded to Victoria and 50,000 to New South Wales. In 1902-3, 10,000, and in 1903-4, 23,000, ova of brown trout were forwarded to Victoria.

§ 5. Fish Preserving.

The Australian climate, especially in the north, renders the industry of fish preserving difficult, and little development has taken place. Bounties have been provided by the Federal Government for fish preserving. These, together with the augmented harvest that may be expected as a result from the trawling operations shortly to be instituted, will probably lead to a considerable output and consumption of locally preserved fish. The establishments for fish preserving at the present time are very few:—

NUMBER OF FISH PRESERVING ESTABLISHMENTS, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	3	3	2	2	2	2
Victoria	...	...	...	...	...	...
Queensland	3	3	4	4	4	4
South Australia ...	...	...	...	...	...	...
Western Australia ...	2	2	2	3	3	3
Tasmania	...	...	...	1	1	...
Australia	8	8	8	10	10	9