



DEPARTMENT
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STAFF NOTES.

The Director, Mr. A. J. Fraser, will attend the annual meeting of the Pemberton-Warren Trout Acclimatisation Society at Pemberton on Saturday evening, October 10. The following morning he will take the chair at the annual meeting of the Trout Acclimatisation Council of W.A. Technical Officer J. S. Simpson will also attend.

The Research Officer, Mr. B. K. Bowen, and Mr. W. ~~K~~ Cherrington, of Head Office, made a rush trip to Pemberton on September 10. They took with them 20,000 trout ova brought by air from the Trout Hatchery at Snob's Creek, Victoria, and made available by the Victorian Fisheries and Game Department on an exchange basis for experimental purposes.

We welcome to the staff the following officers -

- * Miss Yvonne Lauffer, who commenced duty at Head Office on August 4, 1959, vice Miss Cann, resigned.
- * Mr. Norman Henry, who was appointed Assistant Inspector on August 24, 1959.
- * Master Kevin Enright, who commenced on September 7 as Cadet Inspector.
- * Mr. Dudley Gordon, appointed on September 21 as temporary Assistant Inspector.

Miss Lauffer, who entered hospital on August 27 to undergo an emergent appendectomy, resumed duty after sick leave on September 21.

Technical Officers L. G. Smith and J. S. Simpson will attend the Trout Council of W.A.'s exhibit at the Royal Show on October 5, 6, and 8. They will distribute pamphlets the Council has prepared outlining its new policy in its "Trout for the Inland Scheme". The Council now advises farmers to stock their dams with May fingerling trout instead of September-October fry and suggests that this will give a greater return.

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Technical Officer L. G. Smith will go to Albany early in November for a tour of duty on board the crayfish research vessel "Bluefin".

Mr. P. D. Lorimer of the Fisheries Division of the Commonwealth Department of Primary Industry will complete his term as technical officer on the "Bluefin" on October 6 and will be replaced by Mr. John Sinclair. Mr. Sinclair who was formerly employed in this Department as inspector was appointed to the staff of the Commonwealth Fisheries Office, as the Division was then known, in 1955.

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Senior Inspector J. E. Munro and Fauna Warden S. W. Bowler returned on September 27 from Kalgoorlie where they had been in charge of this Department's exhibit at the Australian Inland Mission's wildlife and general exhibition.

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Assistant Inspector E. H. Barker, who recently completed a tour of duty at the Nor'west Whaling Co's station at Carnarvon, will commence annual leave on October 5.

Other officers to proceed on leave this month include the Research Officer, Mr. B. K. Bowen; the Fauna Protection Officer, Mr. H. B. Shugg; Inspector J. Traynor, and Miss P. J. Pegrum, of Head Office. All will start leave on October 12.

COMMONWEALTH-STATE FISHERIES CONFERENCE.

Arrangements have been completed to commence the annual conference of Commonwealth-State Fisheries authorities in Hobart on November 30. Matters to be discussed will include adminis-

tration of the various State and Commonwealth Fisheries Acts and their general relationship. Operations under the Fisheries Development Trust Account will also be reviewed. The Director, Mr. A. J. Fraser, will be this State's delegate.

JAPANESE FISHERMEN'S EARNINGS.

An interesting note concerning the earnings of Japanese fishermen appeared in the U.S. Fish and Wildlife Service's Bureau of Commercial Fisheries Market News Service (New York, August 13, 1959). The source was attributed to the Japanese Suisan Shimbun of June 14, 1959.

The note says that the Japanese Shizuoka Prefecture Federation of Fishermen's Credit Co-operatives has recently made a survey of the income of 21,097 fishermen's families belonging to 70 co-operative associations in the prefecture. It found that the average family annual income was 619,000 yen (£A736), of which 85.2% was from fishing and 14.8% from other activities, such as farming, home crafts, or day labour. Of this gross income, 51.2% was on the average spent for expenses directly related to fishing and 39.2% for living expenses.

Average annual expenditures for living expenses per family were 242,000 yen (£A282) as compared with a figure of 382,000 yen (£A454) found in a recent survey of urban worker's families, but it was believed that fishermen's families received a considerable unrecorded income in the form of goods. The Shizuoka fisherfolk were found to save on the average 0.6% of their income. Shizuoka ranks fourth among the prefectures of Japan in total landings and is the leading prefecture for tuna landings.

MINISTERIAL DIRECTIVE TO LICENSING OFFICERS.

In the September, 1954, issue of this Bulletin was published a ministerial direction to licensing officers that no license be granted or renewed in any case where the applicant had been convicted of stealing fish or fishing equipment.

The Minister (Mr. Hutchinson) has amended this direction so that it now reads -

A professional fisherman's license shall not, without the specific approval of the Minister, be granted or renewed in any case where the applicant has been convicted of stealing fish or fishing equipment.

The procedure in future will be that upon application by any person so convicted, the licensing officer will advise the applicant that the Minister's approval is first necessary, and that application for the license must be made in writing to the Director. At the same time a comprehensive confidential report in relation to the applicant's general behaviour since his conviction should be forwarded, as well as any other information which might assist the Minister in arriving at a just decision.

COMMONWEALTH-STATE CONFERENCE OF FAUNA PROTECTION.

Representatives of all State fauna authorities and of a number of Commonwealth Departments conferred in Canberra on August 5, 6 and 7 at the invitation of the Comptroller-General, Department of Customs and Excise. The conference had been called to discuss fauna protection laws throughout Australia and the possibility of making them uniform. Delegates also had to consider the general question of exports of native birds and mammals.

It was agreed that the introduction of common policies on protection and preservation of fauna was not practicable on account of the different conditions experienced in each State. General agreement was reached, however, on interstate and overseas export procedure. The new rules should close loopholes in the permit system. It was also agreed to extend invitations to the Commonwealth Departments of Customs and of the Interior to attend future bi-ennial interstate conferences.

WHALING.

The humpback whaling season finished at Albany on August 22 and at Carnarvon on September 21, with a total take of 700 humpback whales, 12 blue whales, 1 fin whale and 1 sperm whale. While the Nor'West Whaling Co. had a poor season, the Cheynes Beach concern recorded its best take since the company commenced operations.

The production table is set out on page 133. A comparison with other years shows that production, and the average length of whales taken, have both declined. A decrease is also recorded in the ratio of males to females captured.

The Cheyne Beach Whaling Co. re-commenced whaling on sperms on September 7. The take to September 30 was 58 whales. Provided sperms remain plentiful, the company intends to operate until December 1.

HUMPBACK WHALING 1959.

STATION	WHALES TAKEN				AVERAGE LENGTH.		PRODUCTION				
	MALES	FEMALES	TOT-AL	% OF MALES IN TOTAL	MALES	FE-MALES	OIL			MEAL ETC.	SOL-UBLES.
							TOTAL	PER WHALE	PER WHALE FOOT		
Carnarvon	256	285	541	47.32	feet. 37.72	feet. 39.70	barrels 24,640 (a)	barrels 44.88 (a)	1.14 (a)	tons 1586 (a)	tons 1150 (a)
Albany	75	84	159	47.17	38.71	40.44	8,244 (b)	49.96 (b)	1.23 (b)	347 (b)	-
TOTALS	331	369	700	47.29	37.94	39.87	32,884 (c)	46.06 (c)	1.16 (c)	1916 (c)	1150 (a)

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(a) includes 6 blue whales, 1 fin whale and 1 sperm whale.

(b) " 6 " " " " " " " " " " "

(c) " 12 " " 1 fin " " 1 " " "

Note: 5.999 barrels = 1 ton.

The disappointing season experienced by the Nor'West Whaling Co. was referred to by the Company's deputy chairman, Mr. G. M. Bunning, at its annual meeting in Perth on September 26. Mr. Bunning reported that the catch was the equivalent of just over 550 humpback whales, little more than half the quota. Mr. Bunning said that the reduced catch suggested that the stock of humpbacks off our coast might be diminishing. It was understood, he said, that this was the personal view of some officers of the Fisheries Division, C.S.I.R.O. Mr. Bunning maintained, however, that the only definite evidence available suggested that seasonal conditions, rather than a decrease in the population, could have been the reason for the abnormally low number of whales taken. The directors of the Company express their confidence in a return to normal conditions next season. They thought this year's operations could not be considered as a guide to the industry's future. The chairman was reported as saying that the directors had always been conscious of the hazards attached to the industry, and had made every effort during the company's ten years of existence to bring operations to the highest efficiency.

KURI BAY PEARLS PRAISED.

While he was in this State, the President of the Nippon Pearl Co. Ltd., Mr. T. Kuribayshi, visited the pearl culture centre at Kuri Bay. He later called on the Minister for Fisheries, Mr. Hutchinson. Mr. Kuribayshi's company is associated with Pearls Pty. Ltd. in the pearl culture venture north of Derby. Commenting on the first harvest of cultures, he said that some of the pearls would be valued at about £2,000 each, and that on the whole they were bigger and better than those produced from Akoya shell in Japan. He said that the company now had forty Japanese operatives working at Kuri Bay.

APPEAL FAILS.

An appeal by John Albert Pell against his conviction of having consigned undersize crayfish was disallowed by the Supreme Court recently. A licensed fisherman of Lancelin, Mr. Pell had been fined £5. in the Police Court.

PEARLSHELL PROMOTION CAMPAIGN.

Advice was received last month that the Government of Queensland had decided to contribute £4,000 to the cost of the promotion campaign. This amount will be paid by the Island Industries Board, Thursday Island, to the Commonwealth Department of Trade as Queens-

land's contribution to the Fund. The West Australian Government had previously contributed £5,000 and the Commonwealth Government has made a number of grants to the campaign for advertising in the fashion design fields of London, Paris and New York. The Commonwealth contribution is believed to be in the vicinity of £35,000 over the past two years.

FISHERMEN'S ADVISORY COMMITTEE.

A meeting of the Fishermen's Advisory Committee was held on September 30 at the Fremantle Court House. The Committee sought evidence from fishermen and others associated with the industry on various matters, including the opening and closing date of the Fremantle crayfishing season, the application of the one-mile offshore closure, a review of the grading of crayfish tails and the export categories, and the use of fish traps for the taking of snapper. The fishermen made representations in regard to a number of vexatious questions, including the application of uniform conservation measures throughout the State and the limitation of boats and fishing gear. The inadequacy of facilities provided at the Fremantle fishing boat harbour was also stressed.

The evidence taken will be considered by the Committee, whose recommendations will be conveyed to the Minister in due course. On October 28, the Committee will leave for Geraldton to hear evidence on and discuss the conservation of the Geraldton-Abrolhos crayfisheries.

W.A. FISH PRODUCTION.

Production of fish in 1958/59 of 27,847,000 lb established a new record in Western Australia. The previous record total was for 1957/58, when the total catch amounted to 23,285,000 lb. The greatest increases were in crayfish, tommy ruff ("sea herring"), snapper, yellow-eye mullet, trevally ("skipjack"), samson fish ("sea kingfish"), cuttlefish, buffalo bream and squid. Decreases were recorded in salmon, mullet, cobbler, sand whiting, King George whiting, prawns, yellow-fin bream, Perth herring and mullo-way ("river kingfish").

Production in the main groups was as follows:-

	<u>1957/58</u>	<u>1958/59.</u>
	lb.	lb.
Crayfish	13,327,286	17,516,853
Scale fish	9,783,426	10,113,809
Molluscs	32,209	92,398
Other Crustaceans	142,166	123,744
Totals	<u>23,285,087</u>	<u>27,846,804</u>

The prime value of the 1958/59 catch was £2,993,064.

DEPARTMENTAL PROSECUTIONS.

July 1 to September 30, 1959.

Date	Defendant	Court	Charge	Result
18. 8.59	Martin J. E.	Albany	Fishing in closed waters	Fined £5
13. 7.59	Polidori A	Fremantle	Assaulting an Inspector	" £10
13. 7.59	Gadaleta G	do	do	" £10
10. 8.59	Gazeley T.	do	U/size crays	" £5
do	Maraldi G.	do	do	" £5
28. 9.59	Helliwell A.	do	do	" £2
do	Castrovinci S.	do	do	" £2
15 9.59	Barrass W.	Geraldton	do	" £10
do	Cousins B. L.	do	do	" £4
do	Birch W. E.	do	do	" £2
9. 7.59	House K. H.	Perth	do	" £5
do	Hugill D. R.	do	do	" £3
28. 7.59	DeLacey M.	do	do	" £15.
11. 8.59	Campeatta A.	do	do	" £5
do	Lopresti R.	do	do	" £5
do	Lopresti S.	do	do	" £5
do	Fletcher G.	do	do	" £5
do	Helliwell A.	do	do	" £5
do	Anderson G.	do	do	" £5
do	Campeatta V.	do	do	" £5
do	Lopresti R	do	Unlicensed	" £5
do	Helliwell A	do	U/size crays	" £5
do	Anderson G.	do	do	" £5
do	Bennett A. R.	do	do	" £7
do	Webster N.	do	do	" £5
do	Brown, F. C. H	do	do	" £5

Date	Defendant	Court	Charge	Result
Fauna Protection Act.				
20. 7.59	Jeffs D.	Midland Junction	Taking grey kangaroos	Fined £5
do	Davies J. M.	do	do	" £5
do	Scrimegour Wm.	do	do	" £1
do	Walker D.	do	do	" £1
do	McKay P.	do	do	" £1
do	O'Meara T.	do	do	" £1
13. 8.59	Rennick J. M.	Busselton	do	" £3
29.9. 59	Rayburn C.	Perth	do	" £5
do	Pollitt J. K.	do	do	" £5
do	Hogan J.	do	Illegal dealing in birds	" £5

A.I.M. WILDLIFE SHOW.

From September 22-25, the Australian Inland Mission held its annual wildlife show and general exhibition in the Kalgoorlie Town Hall. In keeping with the practice of recent years, this Department entered an exhibit under the direction of Senior Inspector J. Munro. He was accompanied by the Fauna Warden, Mr. S. W. Bowler, who assisted at the Show and also carried out patrols in the Goldfields district and called on all Honorary Wardens available. Mr. Munro reported on their return to Perth that the Show was again very well attended. Great interest was shown in the Department's exhibit, which featured sharks and rays and other museum exhibition material. A collection of coloured slides on the pearling and pearl culture industries, and photographs of fish specimens, were also shown.

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SITUATIONS VACANT.

The Southern Trawling Co. Ltd. has called applications for the positions of Master and Mate and First and Second Engineers on its new 500-ton diesel trawler to operate in the Great Australian Bight. The company also requires an executive officer.

Any Western Australians interested should make enquiries at the office of the Department of Primary Industry, 44 St. George's Terrace, Perth.

FISH LANDING FOR SWAN RIVER.

The Department has received advice that the Minister for Works (Mr. Wild) has approved the expenditure of approximately £1,500 for a new landing place for fishermen at South Perth. This has been rendered necessary because of the removal from the Perth foreshore of the landing in use for many years in connection with the reclamation work needed for the Narrows Bridge project. Funds for the landing are being made available from moneys derived from the petrol tax.

COMMERCIAL FISHING ON THE MISSISSIPPI RIVER.

Since June 15, Iowa (U.S.A.) conservation officers have been making a concentrated check of commercial fishing equipment on the Mississippi River along the southern half of that State. So far they have confiscated more than 200 pieces of illegal gear valued at \$4,000-\$5,000. This includes 200 baskets, 107 hoop nets, 7 trammel nets, and one gill net. If not claimed, the gear will be disposed of by the State Conservation Commission.

All this is a result of new, more stringent regulations which became effective on July 4, 1959, says U.S. Fish and Wildlife Service Market News Service of July 23. Owners of fishing equipment must now have a \$15 owner's certificate, and anyone using such gear must have an operator's license costing one dollar. A pole-and-line fisherman can have one trot line and one fish trap without an operator's license, but must pay a dollar for each trot line and trap.

ANNUAL INSPECTORS' CONFERENCE.

In the September issue of this Bulletin, on pages 125 and 126, we published a brief summary of the proceedings on the opening day of the 16th Annual Conference of Inspectors. Hereunder is a summary of the reports and discussions of the two final days of the conference.

Fauna Section.

Fauna Warden S. W. Bowler outlined the patrols he had undertaken during the year in the South-West, Great Southern, Midlands, and Kimberley districts. He also reported highlights of tours of inspection of some of the islands of the Recherche Archipelago and when in company with the Fauna Protection Advisory Committee on its tour through the Great Southern, Esperance, Duke of Orleans Bay and Kalgoorlie Goldfields districts.

Reviewing the increase in policing activities brought about by the inception of the cage bird and pet food trades, Mr. Bowler said that the number of licenses issued had increased markedly compared with the previous twelve months. This referred particularly to bird trappers and dealers' export and import licenses. Mr. Bowler forecast that in the foreseeable future it would be necessary to introduce limits on the number of finches that might be taken by any trapper and to restrict the number of trappers who might operate. He considered that the present open season for kangaroos had enabled mass destruction methods to be adopted. This had reduced the numbers of these animals in some districts to such low proportions that he thought it would be many years before they would become a nuisance again. Before concluding his report, Mr. Bowler dealt with the number of his miscellaneous duties including co-operation of Honorary Wardens, bird banding activities and the nursing of giant petrels blown ashore during winter gales.

The Fauna Protection officer, Mr. Shugg briefly explained the administration of the Fauna Protection Act. He pointed out that in addition to the policing activities generally covered by the Fauna Warden, the Department was charged with ensuring that all possible steps be taken to conserve and preserve sections of our native fauna for economic, aesthetic and scientific purposes. He pointed out that it was generally accepted these days that only preservation of the habitat, and its maintenance in near-natural condition, could ensure the survival of the species.

An active policy in establishing sanctuaries was being prosecuted, and at present a total of 85 such areas comprising $2\frac{3}{4}$ million acres were so set aside. After outlining some of the steps necessary in the management and control of sanctuaries, a series of coloured slides of Dale's Gorge in the Hamersley Ranges was shown.

Inspection Section.

Senior Inspector J. E. Munro said that he was glad to report the occupation of the new Perth district office and boatshed at Ellam Street, Victoria Park. The offices were occupied in November, and subsequently a jetty and ramp for the care of the Department's small craft had been completed. It was a building of which the Department could be truly proud.

Commenting on his patrol activities, Mr. Munro drew attention to the increased crayfish production brought about by the augmented number of men and boats in the industry, and said that the conservation and protection of the crayfishing grounds was becoming progressively more necessary and more difficult. In the Rockingham-Long Point area, where his activities at the beginning of the year had been mainly centred, a considerable traffic in undersize crayfish was discovered, and a constant watch of both amateur and professional fishermen had become necessary. Later patrols had been carried out on the northern beaches at Lancelin, Ledge Point and Cape Leschenault. He said that he regarded the illegal traffic in the Ledge Point area to be sufficiently serious to warrant the appointment of a full-time patrol.

Commenting upon developments in the industry, Mr. Munro referred to the introduction of wire netting covered mild steel framed craypots, which had proved their efficacy. He said that there was every possibility of the well-known fish merchants, Messrs. Kailis Bros., entering the processing field in the coming season. He understood that this firm had made arrangements to buy from fishermen in the Yanchep-Two Rocks area and further afield. He thought the crayfish would be processed at a West Perth site. Mr. Munro said that the present trend of departmental stores, butchers and supermarkets to handle processed fish, was causing a change in the distribution pattern. Fish hawkers who had once operated in most suburbs had almost disappeared, and fish shops were feeling the pinch of competition. They seemed to have no idea of countering the inroads made in their field by their new competitors. Referring to his general activities, Mr. Munro regretted that no schools of any duration had been held.

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Senior Inspector A. K. Malsom, reporting on activities in the Fremantle district, said that 660 professional fishermen's licenses, 245 amateur net fishermen's licenses and 288 fishing-boat licenses, had been issued in 1958. The value of the fleet now exceeded £1,000,000, including the value of two new freezer boats, the Zora and the Liza, each valued at about £15,000. This, he said, brought the total number of freezer boats operating out of Fremantle to 22. In addition, Commonwealth fishing-boat and fishermen's licenses to the value of £316 were issued. Mr. Malsom said that a short but sharp white crayfish season had resulted in the production of over 4 million lb in the Fremantle district. More than half this amount had been landed at the fish market jetty and the breakwater landing. The herring season had opened well and good catches were taken during the first week in May. The price quickly dropped from 8d. to 4d. lb, however, and fishermen stopped fishing.

Inspector R. M. Crawford reported that 330 professional fishermen's licenses and 322 fishing boat licenses had been issued in the Geraldton district. Included in the latter were several new large boats which had been added to the fleet. During the 12 months, he said, 7 fishing boats had been lost but fortunately no loss of life had occurred. He valued the Geraldton fishing fleet at £400,000. Revenue from licenses was £1,731.

The 1958 crayfishing season in the Geraldton-Abrolhos area had been a record and the Geraldton Fishermen's Co-operative, he said, was doing exceptionally well with over 60% of the fishermen being shareholders. Although the price of crayfish dropped from 2/7 to 2/4, the Co-operative's turnover was £267,000. The co-op. had installed four new cookers and employed 110 processors at the peak of the season. The Co-operative was now exploring the market in the U.S. for whole cooked crayfish.

Mr. Crawford also commented on the fauna in the Geraldton district, listing the species which were commonly seen and describing their relative abundance. In concluding his report, he said that the district had expanded to the point where it was impossible for one inspector to administer it properly. He pointed out that with 400 fishermen and over 200 boats to supervise, and 200 miles of coast to patrol it was too much for one senior inspector and one junior inspector. He recommended that a further senior resident inspector be appointed.

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Inspector N. E. MacLaughlan advised that 47 boats and 34 fishermen were licensed in 1958 in the Shark Bay district. These men produced 947,000 lb. of fish, while visiting fishermen took 840,000 lb from Shark Bay waters. The principal species caught were snapper, mullet and whiting. Crayfish totalling 126,533 lb. had also been taken in the comparatively new grounds. He said that there had been no depletion in fish stocks, although the catch was a little less than in the previous year. He attributed the decline to the marketing situation, and pointed out that where only one freezer was really necessary, four were actually operating, each with their own transport. The six small crayfish boats working from South Passage in the period January-August had taken their catches to a processing plant at Denham, and 8 freezer boats had also fished the grounds during the year. Catches were generally poor, which forced the smaller boats to move out and consequently the processing factory closed down.

Concluding his report, Mr. McLaughlan described highlights of his visit to the eastern States on long service leave. In addition to calling at the Fisheries Departments of all States (with the exception of South Australia) and at the Commonwealth Fisheries Office, Canberra, Mr. McLaughlan also visited Bundaberg, Queensland, where he looked at the prawn and scallop fisheries, the C.S.I.R.O. Laboratories at Cronulla, the oyster beds in the Hawkesbury and George's Rivers, the trout hatchery at Jindabyne in the Snowy Mountains area, and also the fish cannery at Eden, N.S.W.

Inspector T. B. Baines, of Bunbury, reported that 68 fishing-boat licenses and 80 professional fishermen's licenses had been issued in the Bunbury district in 1958. Fishermen there had enjoyed a profitable year. Good hauls of trevally (skipjack), tailer and buffalo bream had been made. The 1958-59 season had also been a good one for crabs, and cobbler had been plentiful in June, July and August, he said. Buffalo bream had been sold as crayfish bait for 6d. lb., and cobbler heads had once again been easy to quit as crayfish bait. Mr. Baines advised that yellow-eye mullet had also been plentiful in the estuary. Patrols concerned with the protection of marron had been carried out, he said, at the Wellington and Stirling dams. These crustaceans did not appear to have been plentiful at either place.

Commenting on the fauna of the district, Mr. Baines mentioned the more common species, and said that the wild duck open season had got away to a bad start, as heavy rains inland had attracted the ducks away from the coast. They did not return until late in the season. Kangaroos appeared to be plentiful in the Augusta-Margaret River area.

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Inspector B. A. Carmichael dealt first with the whaling season experienced by the Cheynes Beach Whaling Co. The 1958 humpback season had again been very disappointing, even more so than in the previous year, Mr. Carmichael said. Only 82 humpbacks were taken, 20 less than in 1957, so that barely more than half the quota of 120 had been secured. The company had experienced a series of unfortunate incidents culminating in the chaser Kos VII losing its propeller whilst engaged in hunting operations. Captain Hughes had the misfortune to fall and break an arm while in charge of the chaser "Cheynes". Mr. Carmichael advised that only four pregnant humpback cows had been taken during the season, compared with 14 in the previous year. He said that pregnant cows were usually the last to pass through Albany waters during the run, and he thought it a pity their condition could not be recognised.

Dealing with sperm whaling, Mr. Carmichael reported that 209 sperms had been taken in the season from April 10 to December 16. During June, July and August, the chasers had concentrated on humpbacks so that in effect the sperm season covered only six months of the year. In December, the price of sperm oil dropped to an uneconomic price and the company suspended operations.

Speaking of fish production, Mr. Carmichael advised that the salmon catch had shown an increase over that of the previous year, but tommy roughs (sea herring) had decreased by about 87,000 lb. He suggested that this could have been due to the cannery taking only a limited quantity, as the canned and filleted product did not seem to sell as well as salmon. He also described his patrols, and fishing conditions along the coast to Broke Inlet in the west, where production decreased in 1958, and to Esperance in the east. He also made reference to the apparently increased numbers of grey kangaroos appearing in the district and to his bird observations. These included sightings of banded giant petrels and quail. Only one petrel in the white phase had been seen, he said.

Assistant Inspector H. D. Kavanagh described his work in the patrol vessels "Silver Gull" and "Misty Isle", and some of his experiences at Rottnest Island and Houtman's Abrolhos areas. He referred to the inspections necessary to ensure that regulations relating to the setting of pots, closed waters and the taking of crayfish were enforced.

He also commented on the dumping of 140 bags of dead crayfish by "Miss Phoenix" during the white crayfish run in December. Although processers and crews had worked until 5 in

the morning, it had not been possible to cope with the catches brought in by the catcher boats. In an effort to avoid further wastage, a voluntary limit was set on the number of bags that a catcher boat could bring in for processing. This resulted in some of the catcher boats having to leave half their pots unpulled, but they continued to bring in more than their quota, hoping to have it processed. Consequently, some 40,000 lb. of legal size crayfish had been dumped in a period of four days. The white crayfish, he said had "run" for approximately fourteen days.

Inspector E. I. Forster delivered a complementary report on patrols aboard the "Misty Isle" and later as skipper of the "Silver Gull". Mr. Forster also reported on a new development in the Fremantle fishery, viz., the trawling of squid and cuttlefish in the waters of Cockburn Sound.

Mr. J. E. Bramley, Supervising Inspector, outlined the material he would like to see included in reports and diaries, and the manner in which they should be submitted. He also called for additional information from inspectors of their observations of fish and fauna occurrences, and the names of fishermen working in areas patrolled and the gear they used. He said it was important that when reporting breaches, the Crown Law Department's form of brief be completed in detail. The surname and full christian names of every person apprehended, and their home address (not their working address) should be ascertained and reported. This, he pointed out, would save the Department time and make it easier for the Police Department to serve summonses. Mr. Bramley also drew attention to the necessity for reporting any malpractices observed, so that a direction could be given on action to be taken.

He asked District Inspectors to ensure that the boundaries of closed waters were clearly marked, and called on crews of patrol boats to assist District Inspectors at all times. It was a patrol boat's function to assist the administration of the district in which it was working, particularly in regard to such matters as the collection of fishermen's returns and reporting the names of boats and the men fishing in the areas they patrolled.

Pearling.

Pearling Inspector R. J. Baird advised that the 1958 season had ended with the take of pearlshell 288 tons less than that of the previous year. Three hundred and ninety-four pearl fishers were engaged in the industry, he said, 16 being European, 38 full blood natives, 11 halfcasts, 115 Japanese, and 214 Indo-

nesians, Malays and Chinese. Only 14 professional fishermen's licenses had been issued during the year, and poor fishing had been experienced. He attributed this to the hot weather experienced and the higher water temperatures which prevented fish from penetrating into Roebuck Bay. Indeed, the fish were so scarce that the fishermen were forced to give up fishing. Referring to the Pearls Pty. Ltd's pearl culturing venture at Kuri Bay, Mr. Baird reported that the first harvest had been successful and culture pearls of fine quality had been recovered. He said that while no definite valuation of the Australian cultured pearl had been decided, it was thought that the price for a top grade cultured pearl would be about one-third of the value of a good natural pearl. The Kuri Bay product was superior to the Japanese and was a lot larger - the Australian cultured pearl ranging in size from 50-90 grains, whereas the best Japanese pearl was about 40 grains.

Referring to the fauna patrol carried out during August and September with Warden S.W. Bowler, Mr. Baird said it had been a very interesting experience and a good deal of information had been obtained about the fauna of the Kimberley region. Unfortunately, he added, one of his strongest impressions was the "don't care" attitude of the majority of station owners towards the fauna, and their lack of hospitality. Mr. Baird concluded his address with the showing of selected slides on the pearling and pearl culture industries.

Research Section.

Mr. B. K. Bowen, Research officer, summarised the research projects his section had in hand. These were the set-net experiments being carried out in Mandurah waters, fertilisation of farm dams and limnological studies thereon, fertility and mortality rates in the trout hatcheries at Pemberton, and prawn and scallop testing at Exmouth Gulf and Shark Bay.

He then briefly described an ecological survey of Bernier and Dorre Islands, the first of its kind carried out under the auspices of the Department. The survey, he said, had been undertaken to give the Fauna Protection Advisory Committee information on the needs of the fauna of the island, so that it could make recommendations to the Minister in respect of an application to lease parts of the islands for tourist purposes. Mr. Bowen led the survey party, other members of which were Dr. W. D. L. Ride, Director, Dr. G. F. Mees, Curator of Birds, and Mr. A. M. Douglas, Entomologist, of the W.A. Museum; Mr. R. D. Royce, Senior Botanist, Department of Agriculture; and Mr. H. Tindale-

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Biscoe, Department of Zoology, University of W.A. The party was landed first on Dorre Island, and later on Bernier Island, having been transported from Carnarvon on the research vessel "Lancelin" under the command of Assistant Inspector D. Wright, with Inspector N.E. MacLaughlan as sailing master and Mr. C.R.C. Haines as mate. Mr. Bowen went on to show slides to illustrate the flora and fauna of the island, specimens of which proved to be most interesting, including some species believed to be new to science. He said that a complete report was being prepared and would be published in due course.

Captain H.C.W. Piesse outlined r.v. "Lancelin's" activities in prawn and scallop surveys of the waters of the nearer North-West, and Technical officer R. J. McKay showed slides and described the activities of commercial trawlers on the prawning grounds.

Technical officer L. G. Smith summarised the results of his year's activities in bream tagging, the set-net experiments at Mandurah and trout transport and liberation.

Technical officer J. S. Simpson outlined the survey work on farm dams.

Whaling.

Assistant Inspector D. Wright described operations at the Nor'West Whaling Co.'s station at Babbage Island, Carnarvon, in 1958. The season was in full swing by July 7, he said, with catches of from 7 to 19 whales a day. The best day's catch was 20 on July 10, and the best weekly catch was 120 for the week ended July 10. The whales were all in good condition, the blubber being up to 8" in thickness. Smaller whales approximately 35-38ft in length were found to be plentiful in the Shark Bay area, and their blubber and meat proved to be in excellent condition. In mid-August, Mr. Wright continued, the daily catches became smaller, and although blubber measurements were about the same, the quality deteriorated, becoming more fibrous. By the beginning of September, the catches of larger whales had dropped off, the catcher boats reporting numbers of cows with calves, and small whales of about 36 feet. By October 1 the weekly catch was very poor and a large number of the Station's staff was dismissed. By October 19, only an odd cow and calf were sighted, and the season officially closed on October 21.

In the total catch were a blue whale and 3 bryde whales. When the first of the latter was brought in by the catcher "Manilya", it was thought to be a sei or minke whale. Measurements were made of the fins, jaw, baleen, ovaries, and ear plugs, and samples of the stomach contents were taken and sent to C.S.I.R.O. headquarters at Cronulla. There they were positively identified as bryde whales. They were grey in colour and cigar shaped, with short flippers and thick tough baleen, dark in colour with very coarse hairs. Mr. Wright said that in the first two, fish were packed tightly in the throat and baleen. These were quite fresh.

Dealing with the station's treatment plant, Mr. Wright reported that the special equipment designed to treat whale blood to add more protein to the meal had been continually blocked by rubbish, e.g., bagging, pieces of baleen, shrapnel and bone from the deck. These had caused overflow in the blood drains and treatment was abandoned. Seven whale marks had been recovered, four of them being of Russian origin. Information subsequently received revealed that the latter had been fired into whales about 2,000 miles south-west of Fremantle while the other three marks had been fired from the "Warreen" and "Lancelin".

Another interesting point mentioned by Mr. Wright was the occurrence of giant petrels in the area, including a banded bird in the white phase. The catching of large quantities of mullet by fishing line with congealed blood as bait, and the appearance of several dugongs feeding in the shallows off the station jetty were other items of interest. He said that a cow and a calf were often observed around the end of the season near the catwalk of the jetty, and appeared not in the least afraid of swimmers, some men getting close enough to touch the cow. Mr. Wright concluded his report with a comprehensive list of the avifauna and complete details of hunting and production statistics. Finally, he showed a selection of coloured slides.

General Business.

Among the many items of general business discussed, the following may be considered to be of particular moment:-

Inspector N. E. MacLaughlan requested that fish traps be banned in the waters of Shark Bay. He said he was not concerned with the use of traps in waters outside the Bay, but only within the Bay itself where snapper were localised. He thought it would not take long for them to be trapped out. He also pointed out that snapper fishing was a very popular sport with anglers, whose sport could be completely ruined. The Director said he would arrange for the "Lancelin" to investigate the effects of using fish traps and the taking of snapper.

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Senior Inspector J. E. Munro requested that a patrol boat be stationed at Ledge Point where, he said, some fishermen were operating in close season and apparently were determined to defy the Department. The Director refused the request, as it was considered better use could be made of the available staff by the formation of a flying squad. A suggestion by the Fauna Warden (Mr. Bowler) that a permanent station be established at Lancelin Island was refused for the same reason.

The Research Officer (Mr. Bowen) requested that the Fisheries regulations be reprinted to enable members of the staff and members of the public to obtain copies. He also suggested that the annual inspector's conference be held at a set time each year. The Director said he would review the regulations on his return from annual leave. After some discussion it was agreed that future conferences be held in the spring.

Senior Inspector J. E. Munro, supported by Inspector J. Traynor, requested that penalties for breaches of the Fisheries Act be increased. The Director advised that he had discussed this matter with the Minister who had indicated that he would prefer to introduce amending legislation for this purpose only in conjunction with other important amendments.

Conclusion.

Before closing the conference, the Director outlined possible and desirable developments in the industry. It was proposed at Geraldton to establish a fishermen's centre, including a multi-cradle slip, a new jetty and a landing of some sort. A road was also required with parking facilities. At Fremantle, where harbour facilities for fishing craft were admittedly the worst on the coast, there was a big scheme in hand to enlarge the fishing boat harbour. It was planned to provide a sheltered area of some 76 acres.

The Director asked that all members of the staff put forward any suggestions they might have for the improvement of the industry and the administration of the Department. He referred to the growth of the Department in recent years and the fine spirit which he said had always permeated the staff and which, he was sure, would continue as all appeared to have a desire to see the industry grow and prosper.

He thanked all officers for the great support he had received in the past. He said that the staff should not take it as a personal affront if all their suggestions and recommendations were not carried into effect. He himself was in the same situation at times. The Minister did not always accept his recommendations, as was his privilege, but he (the Director) lost no sleep over it. What must be appreciated was that the Director was sometimes in a better position to see all sides of a question than individual members of the staff. That should not, however, stop the staff from presenting their point of view at all times.

DEVELOPMENT OF U.S.S.R. TUNA INDUSTRY.

In a recent article A. V. Mikheev, a member of the Fisheries Division of the U.S.S.R. State Planning Authority, discusses the development of a tuna fishing industry for the U.S.S.R. Mr. Mikheev points out that in order to create the broad range of fishery products called for by the present U.S.S.R. 7-year plan, commercial exploitation of such species as tuna, sardines, and saury (or mackerel pike) must be developed as soon as possible. He points out that sardine fishing by Soviet vessels in the tropical Atlantic and saury fishing in the Pacific are already on a commercial basis, but that much work remains to be done on tuna fishing, where experience so far has been on a small scale.

The present 7-year plan calls for an annual tuna catch of some 22 million pounds by 1965. To attain this production, it is planned to build a number of specialised boats to be based in the Far East for year-round tuna fishing in the Pacific, and a larger number of combination tunaboat-trawlers to be based in Baltic and Black Sea ports for seasonal tuna fishing in the tropical Atlantic.

The writer believes that the U.S.S.R. fishing industry should concentrate first on the development of long-lining and seining, as techniques in which Soviet fishermen are more experienced. Pole-and-line fishing, because of the specialised skill which it requires and because of the difficulties associated with the use of live-bait, should be left for development at a later stage.

Soviet attempts to develop a tuna fishery have been attended by many difficulties so far says Mr. Mikheev. The attempt to start off using the most complex types of tuna fishing methods and those least suited to Soviet conditions has had negative results and has delayed the development of the fishery.

We in Australia can perhaps learn a lesson from that last statement. This Department's attitude has always been that to start off in a small way, and then to build on the foundations thus laid, is a much more desirable thing than failing because of inexperience of more specialised and difficult techniques.

ARTIFICIAL HABITATS FOR OCEAN FISH.

One or two overseas publications have carried reports or stories of recent attempts to create new game fish habitats in hitherto barren ocean waters. In some of the States of the U.S.A., notably Alabama, California, Maryland and North Carolina, "junked" motor cars, disused street cars (trams), and even artificial rocks purchased from a Hollywood film company, have been deposited in the sea for this purpose. The Californian project, says that State's Department of Fish and Game, was designed "to take advantage of the well-known fact that fish tend to congregate around sunken ships, rocks and other objects in the water".

Apparently the project is fairly expensive. One report says that in 1955 the Alabama Fish and Game Commission spent \$70,000 dumping 250 disused car bodies in ocean waters to a depth of 10 fathoms. That sort of money (it is the equivalent of almost £50,000 in our money) is just not available here, despite the fact that we would like to carry out a few experiments. Another fly in the ointment, of course, is the scarcity of old automobile bodies in this State, as compared with the American States.

The efficacy of underwater objects to attract fish has been proved even in Western Australia. Many years ago, around the turn of the century, an Italian fisherman whose dinghy had sunk in Safety Bay was searching for it and was greatly surprised when he located it to find that the waters in its immediate vicinity were teeming with snapper. He conceived the idea of providing an artificial "wreck" to see whether this was mere coincidence. He nailed or lashed together a number of old packing cases and sunk them in the Bay, and the same thing happened, and continued to happen. The result was that all fishermen working the snapper season in Warnbro Sound commenced the practice of using "wrecks," as they are always known, and the practice survives to the present day.

MUSEUM WANTS MAMMALS.

Dr. W. D. L. Ride, Director of the W.A. Museum, is at present attempting to collect material for a handbook on the mammals of Western Australia that he intends to publish. Dr. Ride has requested that any specimens of small mammals such as rats, mice and bats which are found, should be placed in a jar of methylated spirits and sent to the Museum.

To ensure that the specimen is properly preserved, a slit should be made in the lower abdomen with a pair of scissors to allow the spirit to gain direct contact with the viscera (organs of the body). The slit will not harm the specimen even though it may be large, as it can be easily repaired. If the slit is too small, or is not made at all, the specimen will certainly be worthless.

CLEARING HOUSE.

Walkabout With Eric Worrell.

Just as there are yarns about snakes, so there are yarns about 'roos, but before accepting all the wild stories about 'roos and their depredations to grazing and property, it would be wise to consider investigations being made by highly competent scientists engaged with the Wild Life Survey section of the C.S.I.R.O.

While we do not deny that the 'roos may be pests in some areas where they have concentrated in times of drought, it is too fantastic to believe the unqualified figures quoted by grazier T. M. Scott recently - that two million 'roos are eating enough for four million sheep and so robbing the grazing economy of £14m. yearly. With the limited study which we have done on 'roos, we can state quite definitely that three giant red 'roos (the species in question) do not eat as much as one sheep under captive conditions.

On a " 'roo-country" tour recently with a party of investigators, we drove a thousand road miles and saw just over one hundred 'roos. A member of the party with me was later quoted on the radio and in the press as having seen thousands of 'roos.

The introduction of any virus should not be considered. Several other effective methods of control are available. We have found that a 4'6" fence keeps 'roos in or out, except when under pressure, such as being chased by dogs. 'Roos only knock down fences when these are old and rotted. With the undoubted amount of money being made by graziers today, surely some of this can be spent on fences. After all if the zoos can keep them in, why can't the graziers keep them out?

The rate of reproduction of 'roos is not very fast. It has been calculated that the average is one young per female per year. The female is not adult until she is about three years old, and then the joey is carried in the pouch for seven months before it is old enough to begin to hop out of the pouch and graze for itself. There is a further two or three months before the young one is completely independent. If the joey is lost before this stage a spare embryo carried in the womb is then born within a few days.

There has always been considerable controversy over the mother throwing the joey from the pouch when she is hard pressed. We have a film which shows that the pouch collapses when the mother is exhausted and that the joey then falls out.

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The only real arguments for preserving 'roos seem to be their money making potential as a tourist attraction, and one of sentiment. After all, what's so wrong with being sentimental about the 'roos.

("Australian Outdoors"

Sydney

October, 1959)

Electric Barriers May Keep Sharks Away from Beaches.

Among the research projects tackled by the South African Council for Scientific and Industrial Research is a study of electrical barriers to ward off man-eating sharks from the Union's bathing beaches. This project is described in Research Review.

The shark problem, though there have been sporadic reports of attacks off South African beaches over the past 50 years, only came into prominence at the end of 1957 when a series of gruesome incidents involving bathers in shallow water at popular resorts on the Natal Coast received wide publicity.

The immediate problem was solved by the hasty erection of nets and other mechanical barriers at the larger resorts, but these tend to be costly and are difficult to maintain. It was felt that more satisfactory methods might be forthcoming as a result of a scientific investigation of all the factors involved.

The C.S.I.R. agreed to undertake this and convened a committee of experts in various fields to study the whole question. After collecting all the information available, both locally and abroad, it was decided that the most promising approach lay in the use of electrical fields which are known to exert a powerful influence on the swimming action of fish.

Preliminary experiments were carried out on fresh water fish at the National Physical Research Laboratory in Pretoria. These confirmed that fish can, under the influence of a sufficiently strong direct current field, be made to swim involuntarily towards the positive electrode. It was further established that the effect is proportional to the length of the fish, that is, the bigger the fish the smaller the electrical potential required.

On the basis of this, it was possible to design a barrier consisting of two electrical cables laid parallel to each other a few feet apart on the sea bed and encircling the bathing area to be protected. In theory, pulsed direct current flowing in the cables would cause any shark swimming over them to turn around and flee from the shocks he would receive.

As a refinement, a third cable could be laid along the shoreline to provide a means of sweeping the bathing area clear of any sharks that might have entered overnight when the power was turned off.

It remained to convert theory into practice. In the first place, practically nothing is known about the reactions of sharks to electrical fields, so it will be necessary to find out if they are in fact affected and, if so, the form and strength of the field necessary to bring about the desired result. Secondly, a considerable amount of research will be required to develop suitable designs for the cables and other electrical equipment necessary to establish the electrical barrier in salt water under the conditions obtaining on the bathing beaches.

The venue of the experiments was then shifted to the St. Lucia estuary, a large saltwater inlet on the Natal coast north of Durban. With the assistance of the Natal Parks Board, a basin some 300 feet long by 150 feet wide and 11 feet deep was excavated off the main channel between the lake and the sea. An experimental barrier was erected across the mouth of this basin to see if it would prevent hungry sharks placed in the basin from escaping into the open channel beyond. A large canvas tank was also erected at the waterside to determine the strength and form of the electrical impulses to which they react most violently.

Several sharks had been caught in nets but, contrary to popular belief, the shark is an extremely delicate creature and it has proved most difficult to transport them and keep them alive. One 200-pounder was caught one evening and towed successfully to the basin where it was tethered in readiness for tests in daylight the next day. Unfortunately, it was devoured during the night by a crocodile!

("South African Shipping News"

Cape Town

July, 1959)

Aqua Lung Diver Mistaken for a Seal.

An aqua lung diver, Mr. Anthony Witham, of York, was accidentally shot by a youth on the cliffs as he was diving in Saltwick Bay with five more members of the York City Sub Aqua Club.

The youth who hit Mr. Witham said afterwards he thought he was a seal. A .22 rifle bullet caught the swimmer in the temple but struck a glancing blow. The wound bled profusely but Mr. Witham although taken to hospital and detained overnight, was not seriously hurt.

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Last Shot?

For several years now Whitby salmon fishermen have been campaigning for the destruction of seals on this part of the coast and this incident is regarded locally as a serious setback to their efforts.

The fishermen had offered to pay for a crack rifle shot with a game rifle to come to the area and shoot the seals but the authorities refused permission in view of the possible dangers to people in craft at sea or onshore. This incident at Saltwick is regarded in some quarters as a final setback for any efforts to destroy the seals by rifle fire.

("The Fishing News"

London

August 1959)

Russia's New Whale Fleet.

A new Russian whaling fleet will be operating in the Antarctic next whaling season, according to Russian press reports. These claim that the expedition's factory ship has "probably no equal" among foreign whaling vessels.

The Russians say the ship is equipped to make full use of by-products, with several mechanised lines for processing raw materials, also a research laboratory.

Japan's whaling industry has withdrawn its proposal that each Antarctic whaling fleet should reduce the number of catcher boats from next season (see F.N. emergency issue No 7), according to an industry spokesman in Tokyo. He gave the main reason for this as the rejection by the Norwegian whaling industry of the proposal and setting itself a limit of 5,800 blue whales. British whaling firms had supported the proposal.

He added that the Japanese whaling industry was discussing its voluntary limit for next Antarctic season. The withdrawal of Japan's proposal should not be taken as indicating that Japan intends to increase the number of her catchers.

("The Fishing News"

London

August, 1959)

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Atomic Power Stations to Aid Fisheries?

Scientists at the fisheries research laboratory at Lowestoft are at present working on a theory that in the future, vast marine spawning grounds, heated by the waste heat from coastal atomic power stations may help solve the problems of fish depletion in the North Sea.

The scientists are trying to rear sea fish under artificial conditions, and are carrying out experiments on North Sea plaice. This fish can lay from 50,000 to 70,000 eggs at a time, but under natural conditions fewer than one in 1,000 would survive. In experiments last year the laboratory brought 50 out of 1,000 up to the age of three months. However, it is estimated that 20 million young fish would have to be freed each year to increase the annual catch of North Sea plaice by even 5 per cent, and the hatching and transporting of this vast number of fish is practically impossible at the present time.

Hatcheries.

The only solution would appear to be the setting up of small hatcheries around the coast to build up over-fished stocks, or to release the young fish in places where they are known to grow at two or three times the normal weight, as do plaice on some parts of the Dogger Bank.

("The Fishing News"

London

August, 1959)

U.S. Accuses Skipper of Sinking "Cape Douglas".

Charges of barratry - willful sinking of a vessel to collect insurance - were filed by the F.B.I. against Capt. Odd John Solnordal when his vessel Cape Douglas was raised from 640' of water in Puget Sound in July. Officials reported all sea valve bypasses of the 78' seiner were found open, and that her hull was intact.

Cape Douglas foundered in Puget Sound Dec. 28, 1958, Capt. Solnordal reporting that she had been holed by striking a heavy object. Together with Kenneth Ness, engineer, he escaped from the sinking craft on a raft. The vessel which was insured for \$80,000, was owned by Cape Douglas Co., Inc., of which Capt. Solnordal is majority stockholder.

The remarkable salvage of the vessel was accomplished by Capt. Fred Devine, Portland salvage expert. The vessel was located in one of the deepest spots in Puget Sound some miles from where she was reported to have sunk.

("Pacific Fisherman"

Portland U.S.

August, 1959)

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Portuguese Test Aluminum Dories.

A newly-designed aluminum fishing boat may replace the traditional wooden dory and change the fishing methods on vessels of the Portuguese line-trawl fleet operating in northwest Atlantic waters.

The new boats are being fished experimentally by the 600-ton modern dory vessel the Lousado. This vessel finished spring operations on the Grand Banks and was fishing off Greenland this summer.

The 75 dories which the Lousado was designed to carry were replaced this year by ten 21 foot aluminum boats. These were built in Bergen, Norway. Each of the new boats is powered by an eight hp. Swedish Diesel engine and a variable-pitch propellor. They are capable of speeds up to $6\frac{1}{2}$ knots. Airtight compartments along the boats side and at the stem give the small craft added buoyancy and safety. The boat weighs about 1,800 pounds and has capacity of approximately 2,000 pounds of fish. Each is equipped with compass and oil lanterns and can fish at night if necessary.

Each boat carries two fishermen who use three metal tubs of 15 lines each, for a total length of approximately $2\frac{1}{2}$ miles. The line, once baited, is paid out over the stern along a specially-designed chute. It is brought back over a removable roller on the side by means of a mechanical gurdy.

One of the remarkable features of the new boats is the method of handling fish. Once the fish is aboard it is kept cool and clean by means of a constant flow of sea water which is mechanically pumped in and out of the boat. A hand pump is provided for use in the event of a breakdown. Unloading the fish is another mechanical operation. The bottom of the boat is covered with a small mesh net which enables a hydraulic hoist to unload the catch in a single lift. The catch is unloaded after the boat is lifted aboard the Lousado. These boats can be launched in approximately two minutes and hoisted back, with a full load, in about three minutes.

The Lousado is the only Portuguese vessel engaged in this particular type of experimental fishing at the moment. Four trial runs have been completed and the operations of the new boats have caused the master of the Lousado to predict that the new type fishing boat will prove successful. The advantages are obvious ones, but principally they are those of safety and less arduous toil for the fishermen plus increased efficiency in both fishing methods and handling.

The results of this experimental fishing will be watched closely by the Portuguese fishing industry, but not more so than by the fishermen themselves, who see in the new boats a welcome change from the century-old dory operations.