FISHERIES DEPARTMENT, WESTERN AUSTRALIA

MONTHLY SERVICE BULLETIN

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STAFF NOTES

The Superintendent (Mr. A.J. Fraser) visited Albany and Denmark on June 29 and 30. At Denmark he inspected the results of the opening of Wilson's Inlet to the sea reported elsewhere. At Albany he looked over the whaling station and had discussions with executive officers of the Albany, Denmark and Plantagenet Trout Acclimatisation Society. He will return to Perth on July 1.

Captain H.C.W. Piesse will take the p.v. "Lancelin" to the Abrolhos early this month. Also on board will be Mate R.M. Crawford, and Assistant Inspector C.R.C. Haynes. The Superintendent will spend a few days on board later in the month. The "Lancelin" will trawl for prawns and troll for surface fish. Later in the month, in co-operation with Mr. R.G. Chittleborough, of the C.S.I.R.O. Division of Fisheries, he will move north to Shark Bay on whale-marking experiments.

Mr. B.K. Bowen, of Head Office, and Inspector H.J. Murray, of Mandurah, resumed duty during June after annual leave.

Inspector A.K. Melsom, who was in charge of the Mandurah district during Inspector Murray's absence, is now assisting in Fremantle on general duties.

The Senior Clerk (Mr. H.B. Shugg) and the Fauna Warden (Mr. G.C. Jeffery) will leave for Geraldton on July 12. They will go on board the "Kooruldhoo"

(commanded by Inspector G. Coombes) on the following day for a survey of the fauna, particularly the bird life, of the islands of the Abrolhos.

Notification has been received that Mr. Coombes was promoted Inspector, Grade 2, as from June 1.

Cadet Inspector L.W. Duncan left for Pemberton on June 11. He will assist at the trout hatchery for approximately 3 months.

Assistant Inspector T.B. Baines on June 23 proceeded to Point Cloates to take up duty as Whaling Inspector at the Nor'West Whaling Company's station.

Cadet Inspector D. Wright was transferred to the metropolitan district on June 24, under the supervision of the Senior Inspector (Mr. J.E. Munro).

Assistant Inspector G.H.Lyon will transfer to the p.v. "Kooruldhoo" vice Wright on July 4.

Cadet Inspector M.J. Simpson was permanently transferred to the Mandurah district on June 11.

PERSONAL PARAGRAPHS

Dr. D.L. Serventy, Principal Research Officer in the C.S.I.R.O. and Officer-in-Charge of the Western Australian Station of the Wildlife Survey Section, left on the Dominion Monarch on June 16 on the first leg of an overseas trip. He will spend some weeks in South Africa inspecting guano-producing islands and also the artificial platforms installed there for the more effective collection of guano. He will make London his headquarters, working with Dr. A.J. Marshall, Reader in Zoology and Comparative Anatomy at Bart's Hospital Medical College, Charterhouse Square, with whom he will be engaged in studies on the breeding cycles of birds. Dr. Serventy will visit various bird islands in England and Scotland, and on some of his excursions he will be accompanied by Mr. J. Traynor, of this Department, who is now on a visit to Great Britain. Dr. Serventy is accompanied by Mrs. Serventy.

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Dr. Robert Carrick, also a Principal Research Officer of the C.S.I.R.O. Wildlife Survey Section, is at present visiting Western Australia from Canberra, where his headquarters are located. While he has been in Perth, Dr. Carrick, who is the officer in charge of the Australian Bird-Banding Scheme, has called on the Superintendent, and spent some days on Rottnest Island at the Biological Station there. He left on June 28 for Woodstock, near Port Hedland, and from there will go on to the Agriculture Department's Kimberley Research Station, and finally to Darwin. His visit to the Kimberleys is to study the onslaughts of birds like cockatiels, finches, wild ducks and geese on the station's experimental rice plot, where their depredations are quite serious. He will see the extent of the damage done and seek to advise on methods of control.

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A caller at Head Office during June was Mr. Soemartono, a graduate of the Agricultural College, Bogor, Indonesia, and an officer of the Food Research Laboratory, Djakarta. Mr. Soemartono is visiting Australia under a Colombo Plan scholarship, and has already completed a two-year post-graduate course in food technology at the N.S.W. University of Technology in Sydney. Mr. Soemartono, who is specialising in fish processing, will spend five weeks in this State. It is his intention to inspect as many fish processing plants as possible during that time. He has already been to Albany, where he visited Hunt's Cannery, the Cheyne Beach Whaling Company's shore station and the Albany-Denmark Fishermen's Co-operative. He will go next to Geraldton, and on his return spend a week or two in the metropolitan area before moving on to Brisbane and Sydney. He has already visited Victoria, Tasmania and South Australia. Mr. Soemartono expects to return to Indonesia towards the end of the current year.

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DISTRICT INSPECTORS' MID-YEAR CONFERENCE

The annual mid-year conference of district inspectors was this year held at Bunbury from June 15 to 17. Those present were the Superintendent, who

presided, and Messrs. B.R. Saville (Clerk-in-Charge, Head Office), J.E. Bramley (Supervising Inspector), J.E. Munro (Senior Inspector), W. Davidson (Fremantle), H.J. Murray (Mandurah), S.W. Bowler (Geraldton), A.K. Melsom (Relieving Inspector), A.V. Green (Albany), N.E. McLaughlan (Shark Bay) and J.L. Gallop (Bunbury).

In his opening remarks the Superintendent said that he regarded these mid-year conferences, which had been introduced four years ago, as most valuable from the point of view of the administration and, he hoped, of the district inspectors also. The district inspectors were really the eyes and ears of the Department; it was they who kept Head Office informed in relation to developments in their respective districts and permitted the Department to keep its ear to the ground, as it were; and it was they who in the final analysis were responsible for carrying departmental policy into effect, as they were the men who were in constant touch with the people in the industry. He said he regarded the district inspectors' conference as a sort of policy-making convention. The district inspectors, being in actual contact with every part of the industry, were undoubtedly in a better position to appreciate the impact that any policy decision made on the industry. Their advice, offered not only during conference discussions, but also conveyed to departmental executives in a more or less informal manner in off-the-record talks, was given considerable weight in the determination of departmental policy. The conference also provided the senior inspectorial staff with an opportunity of getting to know their colleagues better. The mid-year conferences were held in each district in rotation, so that all officers could get to know what sort of a job all the other officers had to do. He said he felt that for the proper administration of the Department it was desirable that every senior officer had at least a passing knowledge of the problems of all districts. He welcomed to their first conference Mr. McLaughlan, who was the first cadet appointed under the training scheme initiated some five years ago, and now at the unusually early age of 22 years had been appointed as inspector in charge of the most remote of all the fisheries districts (Shark Bay), and Mr. Gallop, who had recently been promoted to inspector in charge of the Bunbury district after some years' service as assistant inspector at Mandurah and elsewhere. He hoped that they

would gain much benefit and enjoyment from their first district inspectors' meeting. He felt sure they would derive much personal satisfaction, as he himself had done, from their association with the Fisheries Department and the fishing industry in general.

The Superintendent referred to the Maritime Pollution Committee which had been established to advise the Government as to steps which should be taken to combat oil and other pollution on beaches, harbours, etc. He said he was a member of the Committee. The scope of the Committee's activities would not at the moment include the pollution of the Swan River or other estuaries. The members felt that investigations should be limited to oil pollution of coastal waters. It had secured information on the subject from various sources in Australia and overseas. The implementation of any oil pollution legislation in respect to extra-territorial waters would need to be discussed with the Commonwealth Government. At present it appeared that laws concerning oil pollution of Australian coastal waters could be made by the Commonwealth Parliament. He asked inspectors to report any occurrences of oil pollution in ports and harbours in their respective districts.

Mr. Fraser stated that the Minister had decided not to introduce a Bill to amend the Fisheries Act during the coming session of Parliament.

He said that for some time it had been apparent that the fish known locally as silver or sand whiting w s referable to more than one species. For example, fish taken in more northerly latitudes, e.g., Shark Bay, appeared to reach a larger size at maturity than those in more southerly waters. The administration of the law in respect to the legal minimum length at which the fish may be taken was in consequence becoming more difficult, and it had been arranged for Mr. B.K. Bowen, of Head Office, who is at present undergoing a course in Zoology at the University, to carry out a project to sort out the seven or eight different species of whiting occurring along our coast. This would involve wertebrae, gill-raker and scale counts. Mr. Gilbert P. Whitley, Curator of Fishes at the Australian Museum, Sydney, had agreed to assist in identifying the species. To carry out the project, Mr. Bowen would require 25 to

30 of each species of whiting from each district, and the assistance of inspectors was necessary to secure the specimens. The method of holding the fish and subsequent transport to Perth would be left to the inspectors themselves. Queries on any point should be referred to Mr. Bowen, who would make available suitable cans and formalin as required.

Mr. Fraser referred to the excellent work being done by officers of the C.S.I.R.O. Division of Fisheries. He said much of their research was undertaken at the Department's request. In that sense, therefore, any assistance rendered to C.S.I.R.O. by the Department's field staff was work done for the Department. It was his desire that the help given by the Department be not in any sense grudging or niggardly, and he wanted officers to put themselves out, if necessary, to assist C.S.I.R.O. personnel. In recent months, in accordance with C.S.I.R.O. policy, a number of research officers had been withdrawn and one or two others were under instructions to return to headquarters at Cronulla. This was a policy decision with which we could not find fault, because the personnel in question had either completed the specific tasks they had been set, or else were on the point of completing them. There was a number of problems in Western Australia still requiring attention by research people, he said, but these were of a more or less domestic nature, and as soon as Mr. Bowen had completed his Zoology training, and received appointment as research officer, he would be assigned to these problems. The more important were fish-farming, fauna conservation and the deterioration of the pearl-shell at Shark Bay.

The following are résumés of some of the subjects discussed -

Amateur Crayfishermen's License :

It was recommended that the Fisheries Act Regulations be amended to provide for the issue of a license for the taking of crayfish by amateurs. The general opinion was that the holder of any such license should be restricted to the use of not more than two craypots.

Restriction of Drop Nets :

It was agreed that some limit should be placed on the number of drop nets which might be used by any one person for the purpose of taking crabs, and a recommendation was made accordingly.

Commonwealth Fisheries Act Licenses :

Each inspector reported that he had explained to local fishermen the requirements of the Commonwealth law, but in no case except Bunbury had any approach been made for the issue of a Commonwealth license. The Superintendent said that in correspondence between the Minister for Fisheries in this State and the appropriate Commonwealth Minister, it had been tacitly agreed that inspectors would issue any Commonwealth license applied for, but that they would not be required to seek out fishermen who failed to take out any such license.

Marine Act, 1948-1953 :

A general discussion took place on the provisions of the new Marine Act manning regulations, which require that fishing-boat skippers hold a ticket, and the effect they may have on fishermen who have expended large sums of money on fishing equipment and are not yet naturalised. It was decided to recommend that the matter be taken up with the Harbour and Light Department, with a view to a competent skipper who was otherwise qualified but not eligible for naturalisation being granted a provisional ticket pending naturalisation, such ticket to be withdrawn if naturalisation were not secured within a reasonable time of the holder becoming eligible.

Yellow-eye Mullet :

Several officers were of the opinion that the legal length of yellow-eye mullet should be increased from 9 to 9½ inches, not because fish at this length were immature, but because of the poor marketability of 9" fish. It was decided to recommend that the views of the various fishermen's associations be sought before taking the matter further.

Marron :

It was agreed to recommend that the taking of marron by any means of capture whatsoever during the close season be prohibited. At present only certain methods of fishing were banned, and this, it was felt, left open too many avenues for evasion of the law.

Open Waters for Duck Shooting :

It was the general opinion of district inspectors that more waters should be open for duck shooting during the open season. Areas specifically mentioned were the northern end of Leschenault Inlet (Bunbury), the Murchison River and parts of the Serpentine lake system within the boundaries of the Mandurah and Rockingham Road Districts.

The Superintendent said he would discuss the matter with the Fauna Protection Advisory Committee at an early meeting.

Closed Waters Generally :

The Superintendent mentioned that with the ever-increasing road traffic, more and more beach areas were being developed as camping resorts for tourists. The Department had been literally inundated with applications from people running these camps for the closure of the beaches fronting their respective properties against the use of fishing-nets. Although such applications, which were rarely based on any sound appreciation of fishery conservation practice, usually received short shrift, they were nevertheless somewhat embarrassing, and the Department would soon be compelled to define some sort of policy. The matter was discussed at considerable length, and although it was acknowledged that anglers had a common law right of fishery, the intention of the statute law was that if stocks of fish were to be conserved, they were to be conserved for the professional fishermen, who were the only class of people engaged in fishing for the provision of food for the public at large. In any case, as the majority of the fish frequenting the beaches were migratory by nature, the closure against netting of one small area of coastline would have no beneficial effect. If fish were

present to be caught by nets, they were there to be caught by line also. One of the difficulties seemed to be that the camp proprietors regarded the availability of fish as a good advertising medium, and it induced people to visit the area. They were not all good anglers, however, and did not always understand the habits of fish. Despite this, if their catches were not good, it was not their lack of ability that was blamed, but always the activities of professional net-fishermen. No final decision was made in regard to this vexed question.

General :

In reply to enquiries by inspectors, Mr. Saville said that if delays occurred in the payment of accounts for travelling expenses, mileage, etc., the fault did not lie with Head Office. If monthly dairies were sent in time to reach Head Office not later than the 2nd or 3rd of the following month, and all necessary certificates were signed, they should receive a cheque by about the 15th of the month. However, many such claims had to be sent back to inspectors for signature or for some other purpose, and that was how delays came about. In regard to local purchases of petrol, oil, etc., for an officer's vehicle, if the duplicate orders were not in hand when the monthly claims were ready to pass for payment, the appropriate deductions could not be made and the vouchers would not be passed.

Mr. Bramley said that inspectors should always aim for efficiency. He said that district inspectors had a great responsibility in training assistants and cadets under their control, and unless they themselves were efficient and displayed interest in their work, they could scarcely expect the juniors to learn their job properly.

Next Mid-Year Meeting :

The Superintendent announced that the next mid-year conference would take place at Mandurah in June, 1956.

FAUNA PROTECTION ADVISORY COMMITTEE

A meeting of the above Committee was held in the Department's board room on Tuesday, June 7. The Chairman (Mr. A.J. Fraser) and all members of the Committee were present. The Secretary (Mr. H.B. Shugg) was also in attendance. The following were the main items discussed -

Sanctuaries :

Considerable discussion took place with regard to proposed sanctuaries and fauna reserves throughout the State. The Secretary, when reporting on progress made, referred to Bibra Lake near Jandakot which the Committee desired to be set aside for the preservation of its aquatic fauna. The Lands Department had advised that this lake was reserved for the purpose of public recreation and had recently been vested in the Cockburn Road Board. Negotiations by the Department with the Board were successful in that the latter had agreed to gazette by-laws restricting the carriage and discharge of firearms on the reserve.

Following advice from an honorary warden in the district, an endeavour was made to secure Thomson Lake, a few miles south of Bibra Lake, as a fauna sanctuary. It was revealed, however, that this lake and its adjoining reserve, which harbours a rich variety of fauna, is vested in the Public Works Department for drainage purposes. An application has been lodged with the Lands Department to have "fauna protection" included as a purpose of the reserve. If this is done it would automatically become a sanctuary for fauna and, to some extent, under the control of the Committee.

A decision is shortly to be made by the Lands Department on the question of reserving for fauna all the rocks and islands between Penguin Island and Cape Peron. Some of these islands are richly endowed with bird life and form the northernmost nesting ground of the fairy penguin.

The Committee reaffirmed its desire to see a large national park and fauna sanctuary declared in the area between Mandurah and Bunbury, embracing all

the waters of Peel Inlet and the Harvey Estuary and the whole of Lakes Clifton and Preston and the adjoining small lakes and swamps. It was decided that representatives of the Committee, together with the Chief Vermin Control Officer, Mr. A.R. Tomlinson, carry out a survey of the area and also meet members of the road boards concerned and discuss aspects of fauna conservation and vermin control in the area.

To clarify the legal position regarding fauna reserves, advice was sought from the Crown Law Department. The Acting Crown Solicitor said that in his opinion :-

(i) any land reserved under Section 29(g) of the Land Act for the conservation of fauna is automatically a sanctuary;

(ii) it is possible to make regulations providing for protection of fauna in a sanctuary notwithstanding that the control of the sanctuary has been vested in another body;

(iii) it is possible to make regulations providing for the control of any such sanctuary by the Committee, but only to the extent of carrying out the purposes and intentions of the Fauna Protection Act;

(iv) no regulations should be gazetted which are inconsistent with any regulations made under the provisions of the Fishing, Vermin, Whaling and Zoological Gardens Acts which over-ride the Fauna Protection Act;

(v) any regulations made in respect to a sanctuary controlled by another body should be made only after close liaison with the other body.

Interstate Fauna Conference :

The Chairman explained that the purpose of the proposed Conference was to improve interstate co-operation on fauna conservation and protection. It had been decided to hold the Conference in September and to formally open it on Tuesday, September 20. Delegates from all the other States and from the

Northern Territory, and observers from the C.S.I.R.O., are expected to be present. They will be taken on a field trip to the Dryandra Forest Reserve in the Cuballing Road District and to the Pemberton forest area and trout hatchery before the formal discussions are commenced. A visit will probably be made to Rottnest Island.

The Committee agreed that a symposium on fauna conservation should be held at the conclusion of the conference. It was decided to invite speakers from the Royal Society, W.A. Naturalists' Club, the Zoology Department of the University and the Wildlife Survey Section of C.S.I.R.O. The Chairman said that speakers would be asked to prepare papers which could later be published as a permanent record.

Open Season :

(a) Kangaroos: After considering replies to a questionnaire from those districts where there was an open season last year, the Committee decided to recommend an open season this year in a reduced number of districts. Members thought that it was of little use proclaiming an open season in those areas where farmers had been unable to take advantage of previous openings. It recommended to the Minister that an open season be declared from July 15 to November 30 in the Upper Blackwood, Plantagenet, Manjimup, Tambellup and Gingin Road Districts.

(b) Emus: The Committee discussed the effectiveness of the open season last year in the Albany, Denmark, Manjimup and Plantagenet districts, and decided that a further open season this year was not warranted in any of the areas where emus are protected.

(c) Bronzewing Pigeons: Complaints had been received from the Capel area that bronzewings were particularly troublesome in the clover paddocks, and caused serious damage. The Committee believed that the position was not serious enough to warrant an open season. It resolved to recommend to any farmers who were troubled that they take advantage of the permit system by obtaining a license authorising the destruction of protected fauna causing damage to property.

(d) Finches: As reports indicated that bird life in the Kimberley Division had enjoyed a good season, and it was anticipated that finches would be plentiful, it was decided to recommend the usual open season this year from September 1 to December 31.

MORE FISHING BOATS DAMAGED

In the early hours of June 11, during a strong westerly blow, two crayfishing boats dragged their moorings at Drummond's Cove in the Geraldton district, and were driven on to the beach. Inspector S.W. Bowler reported that the two boats concerned were the "Marlin", a 20' auxiliary launch valued at £500, and the "La Rose", another 20' auxiliary launch valued at £550. The "Marlin" is owned by Mr. R. Armitage of Geraldton and the "La Rose" by Mr. L.T. Finley, also of Geraldton. The "Marlin" sustained very severe damage to her hull and was almost a total loss. The "La Rose" had damage done to the side of the hull. Neither of the boats was insured.

Fishing launch "Tee Dee" owned and operated by Mr. T. Delaney was badly damaged when it broke its moorings whilst anchored at Horrocks' Beach. After it was blown ashore, it was badly damaged by waves and surf and it is doubtful if it can be repaired. The "Tee Dee" was valued at about £200 by its owner.

TRAVELLING ALLOWANCES

As a result of negotiations between the Public Service Commissioner and the Civil Service Association, rates of certain allowances payable have been increased, retrospectively from June 1.

Travelling allowance has risen by 2/-d a day to 33/-d per day for the first fourteen days. After fourteen days the rate payable is now 30/-d. If it can be shown that no reduction has been made in the tariff after fourteen days, the full amount of travelling allowance will be paid.

In the case of travel not including an overnight stay, the allowance for meals has been

increased from 7/6d to 8/-d.

Transferred officers will now receive an allowance equivalent to fourteen days at 33/-d per day, an increase similar to that applied to travelling allowance.

Officers who are relieving or who are away from headquarters on special work will receive 33/-d a day for the first three weeks. After 21 days the rates payable are 18/-d a day for married men and 10/-d a day for single men.

Officers who are travelling north of the 26th parallel will receive 4/-d per day more in respect of each of these allowances. Shark Bay is included in the area where the extra allowance is payable.

INSPECTORS' CORRESPONDENCE
Departmental and Personal

It has from time to time come under notice that officers transferred to another district take with them their duplicate letter-books. The reason advanced in some cases is that they contain a record of much personal correspondence which it is not desired to leave behind. In consequence incoming inspectors have frequently found themselves very much in the dark as to what has gone on in the past. This difficulty could be overcome quite easily if every district inspector were to provide himself with three letter-books - one for his weekly diaries, one for correspondence relating to the administration of his district, and one for his personal correspondence with the Department (e.g., matters concerning his own service and leave, salary queries, personal explanations and reports, etc.). The diary and personal letter-book would always remain the property of the officer himself, and would be taken with him wherever he moved. The station letter-book, which should always be left behind, would be used by him for all other official correspondence, and any assistant inspector assisting him, and the relieving inspector, would also write all general reports and letters therein. The Relieving Inspector, as well as each assistant and cadet, would have two books, and inspectors doing

seasonal duty, e.g., at Point Cloates, Abrolhos and Lancelin, would hand their books to the Supervising Inspector at the end of each season to be given to their successor at the commencement of next season. In the metropolitan district, the general letter-book would be used by all inspectors, assistants and cadets with headquarters in Perth who are not authorised to have their reports typed in the office. It would be kept by the Senior Inspector and made available when required.

Those officers who do not now possess the necessary letter-books should forthwith requisition the number required.

TRAVEL OF A MARKED GIANT PETREL

After a northwesterly gale, a live banded Giant Petrel was picked up on South Beach, Fremantle, on May 26 by Mr. Len Whitman, of Co-operative Bulk Handling, North Fremantle. It found its way to Mr. N.E. Stewart, of the Wildlife Survey Section of the C.S.I.R.O., who took care of it and later arranged for its release. The bird carried a C.S.I.R.O. band, no. 130-03496. Inquiries elicited the information that it had been ringed as a fledgling earlier this year at Macquarie Island. This is the second fledgling Giant Petrel from Macquarie Island that has been recovered in local waters. The first was caught off the Bunbury jetty on June 19 last year. It was released and caught again off Fremantle in late July by a Mr. Fullerton while fishing. Several Giant Petrels ringed on Heard Island have been recovered in South-western Australia. Others have turned up in South Australia, Victoria, New Zealand and South America.

JAPANESE ARRIVE

It will be remembered that the Commonwealth Minister for Commerce and Agriculture, the Hon. J. McEwen, announced some months ago that the Commonwealth Government had agreed to permit the entry of a limited number of Japanese and Ryukuan specialists into Australia to sustain the Broome and Darwin pearling industries. The quota computed for Western Australia was 78. At the date of publication 70 men have arrived, and of these five have gone to Onslow to

complete that centre's quota. A further seven will be inducted towards the end of this season, when a new boat is to be commissioned at Broome.

The total of 70 is one man short of the number expected and it is not yet known whether he has been delayed enroute or is not coming.

WILSON INLET

The newly formed cut was opened to the sea by the Public Works Department on Wednesday, June 15. Inspector G.C. Jeffery, who was relieving at Albany during Inspector Green's absence, has submitted a report on the results of the opening.

He says that just after 4 p.m. the sand bar, which had been built up during the final excavation work, was broken and the water in the inlet commenced to run out. A good flow was soon apparent and, in less than three-quarters of an hour, the outlet doubled its width, but was not of any great depth. Owing to the bar being opened in the late afternoon, no fish were observed moving out to sea, although there had been large quantities of yellow-eye mullet in the area that morning. The fish probably went to sea during the hours of darkness. Mr. Jeffery had to leave that evening to attend to other duties and was not able to return until Monday, June 20.

On that day, at 9.45 a.m., the tide was very nearly full. There had been a good flow of sea water into the inlet, which had banked up the normal run-off back to about three-quarters of a mile. The bar opening was at least 100 yards wide but was quite shallow - approximating a mere 18" in depth. It had increased its width by moving in a westerly direction towards the rocky side of the inlet. Mr. Jeffery comments that it appeared as if the newly dug cut had no beneficial scouring effect as, after the initial run-off, the water seemed to have by-passed the cut and to have moved in and out on either side. Several local fishermen expressed their disappointment at the state of affairs. They thought that unless there was an unusual flooding, no good whatsoever would come out

of all the money and labour spent.

It will be remembered that the Public Works engineers regarded the location of the cut as experimental. No doubt they will have obtained information which should lead to a more successful opening next year, conditions permitting.

VALUE OF WESTERN AUSTRALIA'S FISHERIES PRODUCTION

Some of the older officers of the Department will remember that in pre-war years almost the whole of Western Australia's fishery production, with the exception of pearl-shell, was consumed within the State. In no year did its value go much beyond £300,000 per annum. This is in sharp contrast to 1954, when the production of the fisheries was worth more than £3,000,000. Allowing for the change in actual money values, these figures show very clearly the growing importance of the fisheries in the State's general economy. The following production values of some of the more important primary industries are enlightening. All figures are the latest available, and are chiefly for the period July 1, 1953, to June 30, 1954. The fisheries figures are for the calendar year 1954.

Industry		Value
Wool		£42,523,000
Wheat		27,712,000
Mining		20,296,000
Dairying		7,999,000
Forestry		3,838,000
Vegetables		3,628,000
Fruit		3,111,000
Fishing -		
Pearlshell	358,000	
Whaling	1,287,000	
Fish and crustaceans	1,409,000	3,054,000
Poultry and eggs		2,930,000
Oats		2,925,000
Barley		1,266,000
Trapping		304,000
Honey		234,000

During the statistical year 1953/4, the total exports from Western Australia to the United States of America were valued at $15,023,000. Wool held pride of place, but crayfish tails ran second,

bringing in $2,974,000. Almost the entire production of pearl-shell goes to U.S.A. It is valued at approximately $850,000 annually.

MARKING CRAYFISH - AN INTERESTING EXPERIMENT

Early in 1954 Inspector S.W. Bowler, of Geraldton, sought approval to carry out experiments involving the marking of a small number of crayfish at the Abrolhos, in the hope that the Department might be placed in possession of factual information concerning the growth-rate of the crustacean. At first the Department hesitated to grant approval for the experiments, believing as it did that the work would merely be duplicating work being carried out in connection with crayfish population studies by Mr. R.W. George, of C.S.I.R.O. Division of Fisheries. However, after Mr. Bowler had discussed the matter with Mr. George, who was quite interested in the proposition, Mr. Bowler was given the green light. Mr. George helped with advice on procedures.

On August 12, 1954, Mr. Bowler, assisted by Assistant Inspector McLaughlan and Cadet Inspector Wright, as well as by crayfishermen C. and B. Hancock and C. Davis, marked all told 82 crayfish, with a carapace measurement ranging from 58 to 70 millimetres (= from approx. $2\frac{1}{3}$ in. to approx. $2\frac{7}{8}$ in.). The fish were punch-marked with a diamond-shape punch in different segments of the telson. The 82 fish marked comprised 13 length-groups, and a distinguishing mark (sometimes a single punch and sometimes a combination of punches) was placed on each fish in the different length-groups. The marked fish were then liberated in three almost completely landlocked pools, two on Mangrove Island and one on Post Office Island, both of which are situated in the Pelsart (Southern) Group.

A number of the marked fish were re-captured by Mr. Bowler during a visit to the Abrolhos between April 19 and 22, 1955. Of the 82 fish released eight months earlier 15 were recovered, 2 from Post Office Island (39 released), 6 from south pool, Mangrove Island (10 released) and 7 from north pool, Mangrove Island (33 released).

The following table, which gives details of releases and captures, tells its own story. One thing which appears to emerge from the experiment is that the growth rate of crayfish in the length-groups used is less than is generally thought. It is noteworthy that there was only one male fish amongst the marked fish recovered.

Details		Carapace length on release													Totals
		58mm	59mm	60mm	61mm	62mm	63mm	64mm	65mm	66mm	67mm	68mm	69mm	70mm	
No. of fish released at each length -															
Post Office Isd.	♂	-	-	-	-	-	-	-	2	-	8	-	3	-	13
	♀	-	-	-	-	-	-	-	5	2	10	-	9	-	26
S. pool Mangrove Island	♂	-	-	-	-	-	-	-	-	1	-	-	1	-	2
	♀	-	-	-	-	-	-	-	-	3	3	1	1	-	8
N. pool Mangrove Island	♂	-	-	-	-	1	2	1	-	-	-	-	4	-	8
	♀	2	3	1	1	4	2	2	-	2	-	-	6	2	25
No. of fish recaptured at each release length -															
Post Office Isd.	♂	-	-	-	-	-	-	-	-	-	1*	-	-	-	1
	♀	-	-	-	-	-	-	-	-	-	1θ	-	-	-	1
S. pool Mangrove Island	♂	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	♀	-	-	-	-	-	-	-	-	3+	2*	-	1ø	-	6
N. pool Mangrove Island	♂	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	♀	-	-	-	2x	--	-	2o	-	-	-	-	2ø	1☆	7

Lengths on Recapture

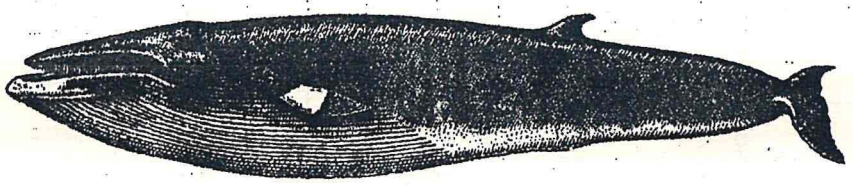
* 69 mm. (growth 2 mm.)
\+ 68 mm. (" 2 mm.)
x 63 mm. (" 2 mm.)
θ 70 mm. (growth 3 mm.)
ø 71 mm. (" 2 mm.)
o 66 mm. (" 2 mm.)
☆ 72 mm. (growth 2 mm.)

MINKE WHALE TAKEN

The Australian Whaling Commission has reported that on June 9 its chaser "Gascoyne" captured a minke whale (Balaenoptera acutorostrata) measuring 36' 9".

Also known as the "Little Piked Whale" and "Lesser Rorqual", this species is said to seldom exceed 33' in length. It is the smallest of all the furrow-throated baleen whales. It may be distinguished readily by the broad, white band which crosses the upper side of the fore flipper and by the entirely white or yellowish-white whalebone. Scottish fishermen gave it the name of "Little Piked" on account of its high dorsal fin.

Strictly speaking, the name B. acutorostrata applies only to the North Atlantic species, since the Antarctic form has been named B. huttoni, and the one which occurs in the North Pacific has been called B. davidsoni. As their external features are very similar, all are generally treated as the one species. On this basis it has a world-wide distribution.



MINKE WHALE (Balaenoptera acutorostrata)

The bluish-grey, brownish-grey, or greyish-black coloration of the head, lower jaws and back, becomes lighter on the flanks. Ordinarily the entire throat, chest, and remainder of the underparts, with the exception of four or five outer folds, are ivory white. Throat folds, from 50 to 70, extend from the chin backwards onto the chest.

Probably this whale feeds more on fish than do its larger relatives. The specimen taken by the "Gascoyne" had a large number of mackerel, averaging about 6 inches, in its stomach.

PEMBERTON TROUT EGGS FOR VICTORIA

(by Technical Officer J.S. Simpson)

It is twentyfour years since a generous donation by the Victorian Fisheries Department made possible the first successful plantings of brown and rainbow trout fry in the waters in the south-west of this State. After an eighty-hour trip by air, rail and truck, eyed ova from Ballarat were placed in troughs at the rear of the Pemberton schoolhouse and the hatching process completed. That was the real beginning of trout acclimatisation in Western Australia.

Much has happened since then. Endless hours of careful study and hard work, by voluntary labour, has resulted in the Pemberton hatchery becoming a fine institution capable of producing and hatching large quantities of eyed ova. Besides meeting the demands of the different acclimatisation societies, it has produced sufficient fry for the stocking of many farm dams under the "Fish for the Inland" scheme.

Two years ago, on July 6, 1953, a consignment of 60,000 eggs was air-freighted from Pemberton to Victoria for the hatchery at Snobb's Creek. Despite the lack of any previous experience in the handling and packing of eyed eggs, the 1953 consignment reached Snob's Creek in good condition. The eggs were spread on trays covered with muslin and stacked in an insulated wooden box. A packing of wet moss kept the muslin and eggs moist, while layers of ice brought the

temperature low enough to delay incubation during transportation.

In view of the previous success, the same methods of packing will again be used, when the further parcel of 60,000 eggs will be despatched to Ballarat on July 4. Like the earlier one, it will be a donation from the Trout Acclimatisation Council of W.A., as some measure of repayment of the initial gift. We will look forward with interest to the report from Victoria on the condition of the ova on arrival and the result of the hatch.

CONVICTIONS RECORDED

April 1, to June 30, 1955

Date	Defendant	Court	Charge	Result
14.6.55	Morrisey, H.J.	Collie	Undersize marron	Fined £2
do.	Kelly, F.	do.	do.	" £2
do.	Newman, J.	do.	do.	" £2
23.5.55	Siggins, L.E.	Fremantle	Undersize Crayfish	" £2
do.	Barrass, W.T.	do.	do.	" £2
do.	do.	do.	do.	" £5
do.	Iannello, C.	do.	do.	" £5
do.	Kentros, J.	do.	Undersize Fish	" £7
do.	Phanos, J.G.	do.	do.	" £7
20.6.55	Scherzo, L.	do.	Undersize Crayfish	" £7
do.	Carrello, S.	do.	do.	" £2

Date	Defendant	Court	Charge	Result
20.6.55	Merlino, A.	Fremantle	Undersize crayfish	Fined £7
27.6.55	Lubicich, M.	do.	do.	" £2
31.5.55	Finlay, S.C.	Geraldton	do.	" £7
do.	Hackett, V.	do.	do.	" £3
do.	Cherico, A.	do.	do.	" £10
do.	Hancock, R.	do.	do.	" £10
19.4.55	Vladich, G.	Perth	do.	" £3
do.	Vatri, A.	do.	do.	" £5
17.5.55	Smith, F.C.	do.	Net on boat in closed waters	" £2/10/-
do.	do.	do.	Obstruction	" £10
do.	do.	do.	Unlicensed	"£2/10/-
do.	McBride, J.J.	do.	do.	"£2/10/-
do.	do.	do.	Net on boat in closed waters	"£2/10/-
7.6.55	Bowden, J.W.	do.	Net in closed waters	" £5
21.6.55	Donatti, P.	do.	Undersize crayfish	" £2
do.	do.	do.	Unlicensed	" £1
28.6.55	Vareschetti, M.	do.	Net in closed waters	" £5
do.	Siggins, L.E.	do.	Undersize crayfish	" £10
6.4.55	Kay, K.	Pinjarra	Undersize Fish	" £2

SALINITY CHANGES IN THE SWAN RIVER

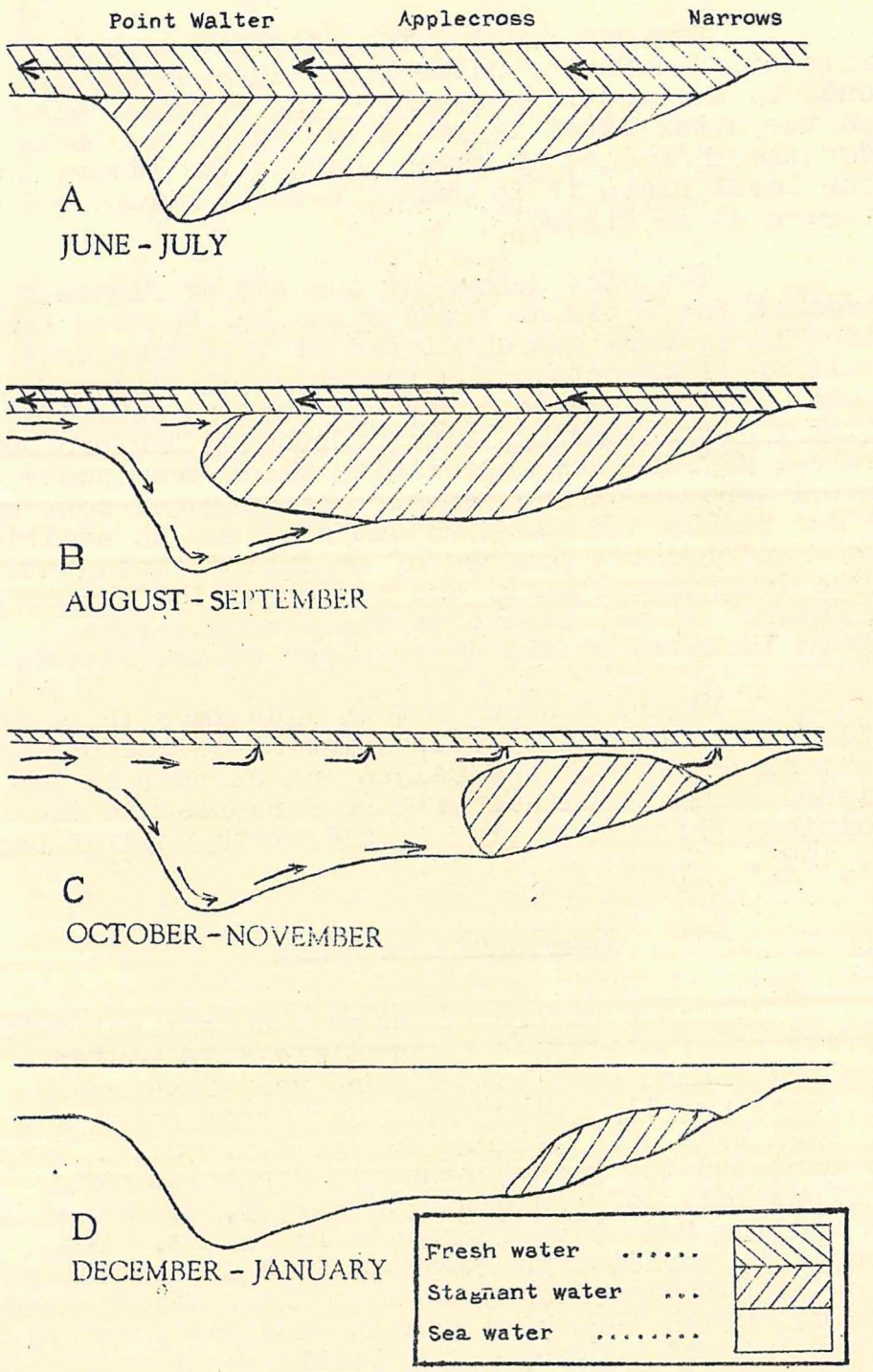
In the October, 1954, issue of this Bulletin were published some remarks made in Parliament by the Minister for Fisheries (Mr. Kelly) in reply to a question asked by Mr. North, M.L.A. He said, it will be recalled, that the region around Applecross contained the only pocket of stagnant water remaining in the Swan by the end of December, 1953, when the summer was only one-third gone.

A recent note from Mr. Rex S. Spencer, of the hydrological section of the Division of Fisheries, C.S.I.R.O., Cronulla, N.S.W., who until quite recently had spent a considerable portion of his official life in Western Australia, says that it can safely be assumed that this is the normal state of affairs near the end of each "recovery cycle", i.e., when the river has recovered, or nearly so, from the effect of the winter rains.

The accompanying diagrams, which have been prepared by Mr. Spencer, may help officers to an understanding of what is generally regarded as being a most complex problem, although it is not really so difficult as it may at first sight appear. In these figures the river bed is shown diagrammatically between Fremantle Bridge and The Narrows; maximum depths of over 60 feet are encountered off Point Walter, after which there is a progressive decrease. The arrows show the direction of the current.

Figure A, which takes in the dead of winter, is quite straightforward. Only the surface layer of freshwater is flowing, and, of course, downstream. The saline waters beneath this layer are low in oxygen, particularly in the Applecross - Crawley region. Figure B shows the position in late winter and early spring, when sea water starts to enter the system and the surface freshwater layer decreases in depth. It will be seen that the sea water spills over into the deeper areas near Point Walter, and then proceeds uphill along the bottom. In effect, this spilling-over permits easier and more efficient mixing than the uphill creep, and this explains why that part of the Swan Estuary below Point Walter is never as stagnant as the area in the vicinity of Applecross, although it is much deeper.

← FREMANTLE PERTH →



Between B and C the stagnant zone is shifted to and fro by water-level changes brought about by barometric pressure - not rainfall discharge. When the water level is low this zone moves downstream under the influence of water leaving the river; as the water level rises it is pushed back by marine water entering as in figure B.

The bent arrows at the top of figure C represent the internal waves which Mr. Spencer has reason to believe are developed at this time as a result of tidal action (by transporting saline water upwards). These waves cause the surface salinity values to rise sharply, thus overcoming the pronounced vertical differences in salinity which previously existed throughout the basin. The stagnant zone by now has really had its head cut off, and in addition it has undergone a process of gradual disintegration at the downstream end by the action of the incoming sea water. At the same time the stagnant zone becomes isolated on the upper slope of the river bed.

Figure D shows how by midsummer there is little or nc stagnancy (depending of course on the amount of rain which has fallen and whether it has finished early or late). Figure D represents the conditions which actually existed at the end of December, 1953.

YELLOWTAIL KINGFISH

In the waters of Geographe Bay, yellowtail kingfish are reported to be prolific this winter. While their size does not compare very favourably with those usually found along our south coast some nice fish have been taken. Messrs E.B. and K. Harris have marketed two good catches in Perth recently. The first lot, sold in Perth on May 25, contained 44 fish ranging from 5 to 65 pounds in weight. The second lot, marketed in Perth on June 23, contained 60 yellowtail varying from 3 to 60 pounds. Nylon hand-lines of 100-lb. breaking strain were used, and fishermen are said to be very enthusiastic about this type of gear. It is reported that cord lines are now practically outmoded for yellowtail kingfish in Busselton waters.

THE CLEARING HOUSE

Lobster Marking

by Eric Hardy F.Z.S.

Unlike the nomadic edible crab, whose wanderings against the tide up the east coast of England are famous, the lobster is a stay-at-home crustacean, and in order to know more about its growth and movements, a number of lobsters are being tagged and tail-punched on the North Wales coast this season. Lobsters with a hole punched in the tail-plate have been out for some time at Puffin Island, off Anglesey, as well as at Looe in Cornwall.

Mr. A.C. Simpson, of the Conway fisheries' station, was recently telling me of the lobster-marking he is doing this season on the south Lleyn, near Pwllheli, covering the area between Criccieth and St. Tudwal's Islands. A numbered yellow plastic disc is to be wired to the base of one of the claws, while the tail-fan plates will be punched in a code according to the lobster's length at the time of marking. Tail-punching survives the moult.

They Don't Wander Far.

On the north side of Lleyn, Lieut.-Colonel R.C. O'Farrell carried out some pioneer marking experiments near Morfa Nevin last year, and he is continuing his private studies of the lobsters between Trevor and Bardsey.

Of sixty lobsterlings he tagged last year (returning those with red tags east of Port Dinlleyn and others with blue tags west of this headland), he tells me that some red-tagged lobsters were subsequently caught in the western area, and out of forty-one recaptures, the longest journey (a red) reached at least one-and-a-half miles.

When the Canadians tagged over 80,000 lobsters on the other side of the Atlantic they revealed the daily wanderings to be less than two miles.

An exceptional British journey of between nine and ten miles by a lobster tagged near Aberdeen may be a record. In any case, there's no proof for the traditional fishermen's view that lobsters migrate offshore for the winter, when catches are few, and come inshore in spring, when catches increase. This seasonal variation in catches is probably due to seasonal variation in sea-temperature, which makes the susceptible lobster less active in colder water.

("The Fishing News" London May 13, 1955)

Electric Ray Paralysed Net Load of Fish

An electric ray fish in the nets of a Pittenweem fisher, working seven miles east of the May Island in the Firth of Forth, electrocuted all the other fish in the catch. The crew were completely unfamiliar with the ray, and pinned it to the deck with a spike until it was dead.

Mr. A. Wood said that when the nets were hauled up, there was a good catch, but there was something peculiar about the behaviour of the fish. The men spotted the strange fish, then the whole catch went stiff - electrocuted, as it was later discovered.

The ray was 36 in. in length and 26 in. wide. It was a female, and there was no sign of young in the reproductive organs. The ray bears its young in life form.

On return to port, Mr. Wood sent the fish to the Marine Laboratory at Torry, where the fish's identity was confirmed.

Statistics show that only 63 similar creatures have been lifted from Scottish waters since 1908. The electric ray uses its unusual powers for defence against other marine life, and for catching other fish for food.

("The Fishing News" London May 13, 1955)

French Airmen Survive Six Days on Sea Water Diet

Using a new-type British life-saving dinghy which has a tent at either end, French Fleet Air Arm men have demonstrated that shipwrecked sailors can live up to six days just by drinking sea water in small, regular doses.

Ten men in charge of Surgeon Commander Paul Aurty took part in the survival test, held recently off Brest. The last of them came ashore after six days.

For the first four days their only ration was sea water. Later they caught and shared 11 small fish, about the equivalent to one large sardine each. "Taking sea water in 50 cubic centimetre doses preserved us completely from thirst and limited our hunger", said Dr. Aury. "We lost from nine to fourteen pounds each but after one day ashore we have regained half the weight lost."

"We were by no means exhausted. When we landed we put our equipment away ourselves, and I made 11 medical examinations the same day and left by road for Lorient.

Contrary to what many people think, sea water is not a laxative. We suffered much from cold. That underlines the primordial necessity of protecting shipwrecked people against the weather by a double-roofed tent. If we had had no tent at all, we should not have held out 24 hours."

("The South African Shipping News Cape Town May 1955)

A Vicious Party

Fishermen in a bay near Ciudadela (Island of Minorca) watched a fight between a small octopus, a moray (an eel-like fish of the Muraena family) and a lobster.

The octopus, which was attacked by the moray, wrapped itself into a tight bundle and made no

attempt to defend itself.

The moray then began to eat the octopus.

Then the lobster appeared and began to eat the moray, whereupon the octopus unfolded itself and attacked the lobster, wrapping its tentacles around it.

Finally, all three disentangled themselves and withdrew some distance apart but watching each other closely.

The fishermen who watched the struggle, thought this a good moment to intervene and they caught all three fish without difficulty, for they were watching each other so intently that they paid no heed to the fishermen.

("The Fishing News" London May 13, 1955)

Pre-Breading -

An Important Step in Fish Stick Production!

by Jack Meletio
Golden Dipt Division
Meletio Sea Food Co.

Stating - "A chef's delight," is the way one cafeteria manager describes pre-breaded foods put up in portion control packs. And it is true that from a chef's point of view pre-breading, in eliminating a messy and time-consuming chore, is unquestionably one of the most significant developments in the food field in recent years. But the pre-breading of certain food items is not just of advantage to the chef alone. There is advantage - and profit - in this relatively new process to everyone involved in preparing and merchandising food.

Many advantages are to be gained from using foods that have already been breaded. Some of these advantages are as follows : Saves time and labour in preparing and applying breading; eliminates the purchase and storage of breading ingredients and

equipment; pre-breading is uniform, and makes for a more attractive and palatable entree; and it provides cost-control.

The cost of breading and fish is combined in one accurate figure per portion, known at the time of purchase, eliminating waste and spoiling of breading materials. Pre-breaded products can be purchased and stored in sufficient quantity to take care of peaks and valleys in demand, without the danger of running short or spoilage of fish not used.

Pre-breading is a process that has, in its development, followed closely behind the growth of two allied processes: The quick freezing of fish and the use of portion-control merchandising methods. For centuries the restauranteur has been a purchaser a manufacturer and a retailer all rolled into one. In this complicated business the mounting overhead that has become an increasing burden in recent years has forced him to look for radical solutions. One solution has been to reduce the manufacturing phase of his operations as much as possible. And that has been the reason for his enthusiastic reception of pre-breaded, frozen fish sticks.

The history of these new developments covers hardly 20 years, assuming proportions of a major industry. Obviously, and for sound reasons, this trend can be expected to continue growing and expanding; as one aspect of this trend, pre-breading is playing an important part. New packaging methods, new and better mixes and improved ways of quick-freezing are constantly being developed.

One of the most important producers of pre-breading materials, the Golden Dipt Division of the Meletio Seafood Company has devoted considerable time and expense in experimental research in this field. The original breading developed by this firm has a history that goes back to 1937. At that time Meletio was a leading distributor of seafood for the St. Louis area.

A client asked the firm to experiment with a breading that would be suitable for frozen fish fillets that he was then introducing into that market. The breading was duly developed but did not prove to

be a success. According to Meletio, the only uniform thing about this breading was its bad reception. Sometimes it would fall off the fish as it was served, and just as often the customers scraped it off. For one thing the breading tended to soak up cooking oil with bad effect on the diner's digestion. It was as plain as the fin on a fish's back that the frozen fillets would never become really big sellers until a uniform breading for them was developed that would please both cook and customer.

Two years of experimenting by the Meletio people produced the desired "fillip for the fillet." It was a ready-mixed breading of flour, eggs and milk, with proper seasoning. It gave fried foods a crisp tasty coating that kept the food flavour in and the cooking grease and oil out. It was given the trade name of Golden Dipt and put on the market.

New Ingredient Prevents Flavour-Loss

The problems involved in developing a breading that would be suitable for the pre-breading of frozen fish sticks also taken on was solved by the Meletio laboratory. What was needed was a basic breading that could be varied to meet the requirements of each processor. Processors had differing ideas on what constituted a desirable colour in the finished dish, some preferring a "golden fried" colour, others showing a preference for a shade not so golden. Another problem was that processors had various opinions as to how thick the breading should be. Preventing flavour-loss due to oxidation was necessary also.

After a series of tests, the Golden Dipt laboratory came up with some workable answers. To prevent flavour-loss they added a new ingredient which they called Mel-Ox3. Perhaps the greatest advantage this new ingredient carried was that under proper refrigerated conditions pre-breaded fish sticks could be stored as long as 12 months without any loss of flavour.

Special Blends of Breading

In addition, the laboratory developed a manufacturing process where it was possible to

formulate special blends of pre-breading mixtures to most economically meet the requirements of individual plants. This made it possible for a processor to specify weight or thickness of his breading and the colour of the product when cooked; he could now actually pre-determine the exact shade of colour his product would have when served.

The Golden Dipt laboratory has worked with many leading processors of fish sticks developing special formulas for eye, weight and colour appeal. Formulas have been devised for breading that will adhere to different varieties of fish, regardless of temper ture when applied. Through this use of specia. formulas, processors have been able to retain their individuality and still have all the cost-saving advantages of a ready-mixed breading.

("Fishing Gazette" New York April, 1955)

Complaints to be Heard Over Russian Whaling Expeditions

Norwegian whalers have complained that the Russian whaling expedition in the Antarctic has not observed correctly the International catching rules during the past season. It was expected that the complaints would be considered by the International Whaling Commission's preliminary talks, which opened in London on Tuesday, April 26.

At these meetings the scientific and technical sub-committees have been discussing questions before the full meeting of the Commission, meeting in Moscow in July.

These meetings, however, are confidential and Fishing News learns that no reports will be issued.

According to Oslo Press reports the Norwegian delegation, headed by the former Governor of the Bank of Norway, Mr. Gunnar Jahn, is proposing a further limitation of the number of whales which may be caught in the Antarctic each season. This year the permitted quota was 15,500 blue whale units.

Norway's view is that maximum catch limits should be laid down for each individual type of whale, with a view to protecting in particular the blue whale, the biggest and most valuable type, which has become increasingly scarce since the war.

("The Fishing News" London April 29, 1955)

Electro-Plating for Kippers

We may soon be sampling fish that have been kippered by electro-plating, says "Crimond", writing in the Northern Scot, regarding the latest proposal of the Herring Industry Board to establish in Stornoway two experimental kippering plats. "The details of the process sound sufficiently fearsome", he says. "'Electrified' smoke is to be 'bombarded' on to 'earthed' fish in the kippering shed.

"That it will result in a full-flavoured properly-treated kipper we are assured. It is not stated, however, whether a hearty meal of the resulting delicacy will require some antidote against a build-up of static electricity!"

("The Fishing News" London May 20, 1955)

Thursday Island Pearling

Production of mother-of-pearl shell at Thursday Island has shown a steady decline over the last few years and a considerable decline since pre-war. The average catch over five years preceding the war was about 1,050 tons per annum. In 1948/49 and 1948/50, when the industry reached a post-war peak owing to high prices then obtainable, it was 961 and 1,191 tons respectively. Each subsequent year production has declined and in 1953/54 landings totalled only 431 tons. Those in the industry attribute the decline to the depletion of shell in shallow water beds. Plentiful supplies are thought to be available in deeper water but these are not obtainable by existing labour. The industry hopes to recruit experienced Japanese divers and revive production by exploiting deep water shell supplies.

("Monthly Summary of Australian Conditions"- National Bank of Australia Ltd. Melbourne June 14, 1955)