FISHERIES DEPARTMENT, WESTERN AUSTRALIA

MONTHLY SERVICE BULLETIN

Vol. V, No. 5. May, 1956

STAFF NOTES

The Supervising Inspector, Mr. J.E. Bramley, will visit Mandurah, Bunbury and Shark Bay during the month.

Cadet Inspector K. Kunzli resigned from the service as from April 26.

Assistant Inspector T.B. Baines has joined Assistant Inspector G.H. Lyon on the "Kooruldhoo" at the Abrolhos.

Technical Officer L.G. Smith will carry out a mullet tagging programme at Shark Bay in June.

Inspector N.E. McLaughlan commenced annual leave on April 23 and was married to Miss Sylvia Stephen on April 28. A Ranleigh silver tray was presented to the young couple from the Superintendent and staff with their very best wishes. During Mr. McLaughlan's absence, Relieving Inspector A.K. Melsom is in charge of the Shark Bay district.

Inspector R.M. Crawford, of Geraldton, will commence annual leave on May 15 and will be married to Miss Jean McBean on May 26. During Inspector Crawford's absence, Relieving Inspector A.K. Melsom will take over the Geraldton district.

Inspector H.J. Murray is assisting Inspector W. Davidson in the Fremantle district.

Officers who resumed duty in April after annual leave were Inspector J.L. Gallop, of Bunbury, Assistant Inspector M.J. Simpson, of Mandurah, and Mr. I. Bartholomew, of Head Office.

Mr. Stanley La Roche joined the staff as an assistant inspector on April 23. At the present time he is engaged on duties in the metropolitan district, under Senior Inspector J.E. Munro.

Mr. Roland McKay is expected to commence duties as a cadet inspector on May 14.

Captain H.C.W. Piesse, assisted by Inspector C.R.C. Haynes and Cadet Inspector D. Wright, will bring the research vessel "Lancelin" to Fremantle towards the end of this month.

Inspector R.M. Morton, who has been spending a short time at sea with the pearling fleet to gain personal experience of conditions, is expected to return to Broome shortly.

Inspectors W. Davidson and A.J. Bateman both suffered crayfish poisoning last month, but remained on duty.

Mr. H.B. Shugg, Fauna Protection Officer, will accompany Technical Officer J. Traynor to Dumbleyung on May 10 and will be joined there by Mr. Ray Aitken, a prominent naturalist. The party intends to proceed the next day to the Twertup Creek area, north of Bremer Bay, to carry out a week's fauna survey, with special attention to mallee fowl.

OBITUARY

We read with regret of the death of Mr. Daniel McDaniel last month.

As a young man Mr. McDaniel was engaged in pearling at Onslow, but later moved to Broome where he built up one of the biggest fleets of luggers in the industry.

In recent years he had lived in retirement and had left his business in the charge of his son Terry.

Mr. McDaniel was buried at his birth place, Busselton, on April 9.

To his widow, sons and daughter we extend our sincere sympathy.

PERSONAL PARS

Our congratulations are extended to Mr. and Mrs. A.R. Main who will each be granted a doctorate in philosophy of the University of Western Australia this month.

After serving in the Army and Air Force and having been a prisoner of war in Germany, Mr. Main matriculated at night school under the Commonwealth Rehabilitation Training Scheme in 1946. The following year he enrolled at the University and completed his science degree (with first-class honours in Zoology) in 1949. In 1950, with the assistance of a Fullbright travel grant and a Smith-Munt scholarship, he went to the United States of America where he studied ecology at the University of Chicago. Later that year he worked for a few weeks in the Bureau of Animal Population at the Oxford University, England, and studied techniques used there. Mr. Main then returned to Perth and in 1951 completed his Honours Degree. In 1952 he was appointed lecturer in the Zoology Department and has studied the ecology, life history and evolution of the Western Australian frogs.

Mrs. Main matriculated from the Northam High School in 1946 and commenced her studies at the University in 1947, completing her degree in zoology in 1949, and her Honours Degree in 1950. The following year she went to New Zealand and taught at the University of Otago. Returning to Perth in 1952, Mrs. Main enrolled for her Ph.D., and commenced her work on the ecology and evolution of trapdoor spiders.

Although the two pieces of research were not selected because of any definite relationship, the present indications are that generalisations arising from them may have a wide application in regard to the fauna of Western Australia generally.

COMMONWEALTH FISHERIES OFFICE CHANGES ADDRESS

Notification has been received from Mr. F.F. Anderson, Director of Commonwealth Fisheries, that the address of his office has been changed from Sydney to Canberra.

All correspondence, including that pertaining to the Fisheries Newsletter, should now be addressed to the Commonwealth Fisheries Office, Department of Primary Industry, Barton, Canberra, A.C.T.

'R & I' SAVINGS BANK

The 'R & I' Savings Bank, a new division of the Rural and Industries Bank of W.A., was opened on April 5 by the Premier, the Hon. A.R.G. Hawke.

In a circular letter, the Premier has pointed out that it is to the advantage of all to save and that the encouragement of thrift is one of the objectives of the Government. He draws attention to the fact that moneys lodged with the new bank will benefit our own State and appeals to all officers to lend their support to this new division of the State's own bank.

NEW LEGAL WHITING MESH AT SHARK BAY

The attention of all staff members is drawn to a proclamation in the Government Gazette of March 23, 1956, wherein it was specified that whiting nets having meshes throughout of not less than $1\frac{7}{8}$", shall, when used or intended to be used in the waters of Shark Bay, together with all its loops, bays and affluents, be lawful nets.

SIGNING OF COMPLAINTS

The Crown Law Department has requested inspectors to print the initials and the name of the Justice of the Peace beneath his signature on all complaints and summonses on complaint. The signatures of J.P.'s, like our own, are often difficult to decipher and it causes unnecessary delay to the legal proceedings when the name of the signatory is not clearly stated.

Species	1955 lb.	1954 lb.
Crayfish	11,120,232	10,279,531
Salmon (including salmon trout)	4,912,450	6,126,277
Snapper	1,394,702	1,306,381
Ruff	897,179	618,443
Cobbler	648,561	569,013
Mullet (river or sea)	453,675	395,366
Mullet, Yellow-eye	362,907	300,762
Whiting, Sand	325,202	312,930
Shark	255,229	307,667
Jewfish	212,860	373,794
Tailor	86,650	91,301
Trevally (Skipjack)	72,050	78,248
Whiting, King George	64,173	76,854
Flathead	54,739	22,732
Garfish	43,423	49,380
Cod	40,094	22,673
Samson Fish	36,232	47,491
Bream, Yellow-fin	32,021	54,411
Perth Herring	24,230	5,951
Leatherjackets	21,448	13,932
Prawns	18,638	37,957
Crabs	17,763	16,487
Pike	17,228	15,649
Mackerel, Spanish	16,469	5,273
Bream, Black	13,012	4,694
Groper	12,030	12,793
Tuna	10,095	16,660
Squid	9,502	10,112
Pilchard	8,548	3,319
Snook	8,340	4,136
Bream, Silver	6,782	6,287
Skate	5,553	11,626
Mackerel	5,033	nil
Mulloway	4,159	1,696
Sweep	3,545	4,162
Yellow Tail	3,189	2,223
Others	9,685	5,791
TOTALS	21,227,628	21,212,002

FISH PRODUCTION 1955

The table on page 61 shows the State's commercial fish production for the year ended December 31, 1955. For purposes of comparison, the 1954 production figures are also shown.

The increased crayfish production was offset by the lower salmon catch, and, generally speaking, the take of other species in 1955 was very similar to that of 1954. The total for 1955 was a mere 15,000 lb. in excess of the previous year. All figures represent total weight.

WEEKEND NETTING CLOSURES

The weekend closure of the waters of Peel Inlet and Harvey Estuary against the taking of fish by nets, was altered by proclamation in the Government Gazette on March 2, 1956. The closed period now extends from 8 o'clock on Friday morning in each week to 4 o'clock on the Sunday morning next following.

Officers are reminded that the weekend closure of Leschenault Inlet was altered by proclamation in the Government Gazette on February 24. The whole of the waters of that Inlet lying north of a line drawn from a point marked by a post on Point Mornington to a point marked by a post on the western shore of Leschenault Inlet, is now closed to netting from 8 p.m. each Thursday to 8 a.m. on the following Sunday.

BASIC WAGE INCREASE

Instructions have been received from the Public Service Commissioner that, as a result of the recent quarterly increase of the State basic wage, an increase of £9 per annum will be paid to adult male officers stationed in the metropolitan area. Junior officers will receive a pro rata increase. Only officers in the metropolitan area will receive increases as the basic wage for other areas remained unchanged.

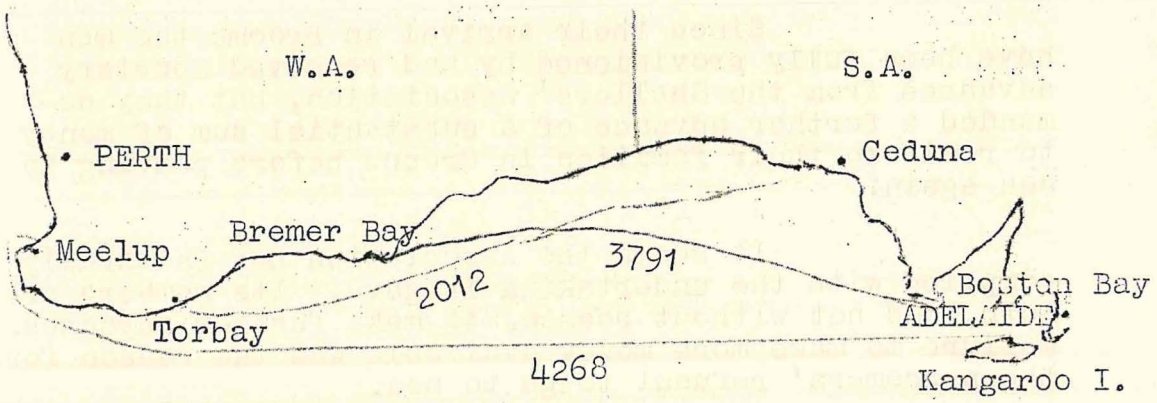
As far as practicable, payments of the higher rate are to be made by May 11, and will backdate to the court judgment of April 23.

SALMON TAG RECOVERIES

Three interesting recoveries in Western Australia of salmon tagged in South Australia have been reported to the Department in the past few days.

The first fish was tagged with large white tag 3791 at Boston Bay, S.A., on March 24, 1954: it was recaptured at Bremer Bay on April 2, 1956, by Mr. North Garnett, of Ongerup.

The second was tagged with large white tag 4268 at American River, Kangaroo Island, S.A., on November 29, 1952: it was recaptured at Meelup about April 11, 1956, by Mr. A.J. Smith, of Busselton.



The third was tagged with small white tag 2012 at Tourville Bay, Ceduna, S.A., on June 19, 1952: it was recovered near Torbay on March 26, 1956, by Mr. Newton Sharp, of Torbay.

The sketch map on this page will give some idea of the distances travelled by these fish.

TROUT DISTRIBUTION

Technical Officer J.S. Simpson will this month make deliveries of advanced fingerling trout to the Blackwood, Harvey, Murray and Serpentine-Jarrahdale Trout Acclimatisation Societies. A total of 10,000 will be planted in streams in the societies' areas. The young fish range in length to about 6 ins.

GREEK DIVERS ON STRIKE

The crew of nine experienced Greek sponge divers recently brought to Broome under sponsorship from the Commonwealth Government and with financial backing from the Broome Shellers' Association, was far from happy with the return (about 11 cwt.) from their first attempt at pearl-shelling.

Since their arrival in Broome the men have been fully provisioned by and received monetary advances from the Shellers' Association, but they demanded a further advance of a substantial sum of money to remit to their families in Greece before putting to sea again.

It seems the Association has faithfully complied with the undertaking it gave. Its members are loth, and not without reason, to make further advances. Failure to make more money available was the reason for the newcomers' refusal to go to sea.

The secretary of the Greek consulate in Perth, as well as an officer of the Commonwealth Department of Immigration, hurried to Broome to confer with the men and the master pearlers in an endeavour to resolve their differences.

In this they were successful. Certain sums have now been provided and the men have returned to the pearling grounds. It is hoped they will be more successful this time than on their former visit.

IDENTIFICATIONS OF MARLIN

Last year a marlin caught off the coast of Western Australia, probably a black marlin (Istiompax australis), could not be identified positively because of the lack of all necessary details. In Vol. III, No. 3 (March, 1954) of this Bulletin, the essential information required to allow proper identification was outlined and is reprinted below for the benefit of new inspectors -

(1) Determine whether the pectoral fins are moveable or rigid. A number of workers are of the opinion that a stiff pectoral fin is a good diagnostic characteristic of the black marlin.

(2) Measure -

- (a) the length of the sword from the eye socket;
- (b) the diameter of the eye;
- (c) the height of the lobe of the first (spinous) dorsal fin;
- (d) the depth of the body (between the parallels, not around the curves).

(3) The colours should be noted in as much detail as possible, preferably with a painting.

(4) A strip of the skin with some of the lateral line pores on it should be preserved.

(5) Any other details such as length, locality, sex, stomach contents, fin counts, number of vertebrae, and the like, would help positive identification.

All inspectors are asked to take particular note of the foregoing as there is still a great deal to be known about the movements and species of marlin found in our waters.

BABBAGE ISLAND WHALING STATION

The Commonwealth Government on April 16 announced its decision to sell the Australian Whaling Commission's Carnarvon station to Nor'-West Whaling Co. Ltd. This company operates the land station at Point Cloates, just south of North-West Cape. Although no figure was mentioned by the Minister for Trade (Mr. McEwen) when making his announcement, it has since been learned that the purchase price was £880,000, or £260,000 more than that tendered by the Government of Western Australia.

According to reports from time to time issued by the Whaling Commission, the total amount advanced by the Commonwealth Treasury was £1,375,000. A substantial portion of this sum has already been repaid and a big sum salted down in Government securities. The net profit since the Commission went into production in 1951 was almost £900,000.

If Nor'-West Whaling Co. Ltd. can operate as successfully as the Commission - and there is no sound reason why it should not - the company, whose overheads must be lower, should pay for the whole plant in 5 years.

It was certainly a good buy.

DUCK BANDING

The Department's duck banding programme continued during April.

Technical Officer J. Traynor, who is in charge of the field work, again was successful in banding over 200 ducks during the month. Operating at Yere Yere and Yathroo stations in the Dandaragan district, he trapped and banded 140 grey teal, 78 black duck, 20 maned gesse and 2 white-eyed duck, the latter being the first of this species banded. Having the previous month completed the original order of 3,000 bands of the English No. 4 size, he was able to commence on a new series of two different sizes - Nos. 3 and 4. The black duck, maned geese and white-eyed duck banded during the month were ringed with No. 4 bands and the grey teal with No. 3.

The No. 3 bands are numbered 4001 to 6000, and the No. 4, 6001 to 8000.

The total number of birds banded this year is 785 - a very satisfactory figure considering that banding did not commence until the middle of February. This makes a grand total of 3199 birds banded since the inception of the scheme in June, 1952.

Recoveries : Six bands were recovered during the month - 5 of them black duck and one grey teal. One of the most interesting recoveries was that of No. 3274, which was from a bird banded at Cape Riche in February, 1955, and recovered by Mr. A.G. Gardiner, of Burekup on the Collie River, 190 miles away from its banding site.

Band No.	Date Banded	Place Where Banded	Date of Recovery	Place Where Recovered	Distance Travelled
			Black Duck		
2329	14.2.54	Moora	1.1.56	5 miles W. of Gingin	50 miles
3523	19.2.56	Kewdale, Belmont	21.4.56	Bokan Lake E. Narrogin District	120 "
3598	21.2.56	Queen's Gardens	21.4.56	Wannamal	60 "
3788	11.3.56	Dumbleyung	12.4.56	Salt Lake, 5 m. sth. of Wagin	22 "
3274	3.2.55	Cape Riche	Apr'56	Burekup, Collie River	190 "
			Grey Teal		
3790	11.3.56	Dumbleyung	12.4.56	On a farm 3 m. south of Dumbleyung	3 "

OPEN SEASON FOR DUCKS

The open season for wild ducks will not close until the 31st of this month.

A number of suggestions had been received that owing to the early pairing off of some birds action should be taken to close the season early this year, as was done last year. It was decided however, that while some early nesting had undoubtedly taken place and the ducks were generally pairing off in the latter part of April, conditions were only normal and quite different from last year when the season was advanced considerably by the February floods. The Department felt satisfied that, although there was undoubtedly a little early breeding, the shooting that took place in May would be less intense than in other months and its effect on future duck populations negligible.

It was considered better to adhere to the usual season rather than cause confusion by altering the closing date, which should only be done when conditions were quite abnormal.

CRAYFISHING 1956

Allowing for the fortnight's delay in the commencement of the season owing to the cyclone, production at the Abrolhos this year promises to be satisfactory. In the Fremantle area the picture is less promising. Reports indicate that the catch per man is likely to be appreciably lower than in previous years, although, due to the increased number of boats working, the overall production figure may not be markedly different. The season still has some time to run, however, and weather conditions could improve or worsen the present general trend.

MARRON SEASON CLOSURE

Officers are reminded that as from May 1 the taking of marron by any means whatsoever is prohibited.

The season will not open again until December 1.

THE CLEARING HOUSE

TIPS ON PAINTING ....

Can you Estimate the Amount of Paint Needed for your Boat?

International Paint Co. Tells How It's Done

Before you start painting your boat you should know exactly how much paint you'll need. You may not buy enough or you may have useless, wasteful leftovers.

How to Estimate

Approximate Coverage
(two coats)
On Average Surfaces

	sq. ft. per gal.
Marine Finish	400
Spar Varnishes	500
"Noskid" Deck Paint	300
Waterline Striping	400
Hard Racing Finish	400
Silver Primacon	350
Antifouling	400
Antifouling	350
Yacht Racing Bronze	500
Copper Paint	400
Wood Surfacer	250
Wood Sealer	400
Canvas Cement	40
Marine Glue	40
Linoleum Cement	40
Double Planking Compound	40

To estimate the approximate number of gallons required for any job, the following information will be helpful.

Bottoms :

Multiply the length of the boat at the waterline by the draft and then by 3.5; divide this

total by the number following the name of the material to be used (see table above).

Topsides:

Multiply the length of the boat over all by the beam and then by 1.5; divide this total by the number following the name of the material to be used.

Decks:

On wood and steel, multiply the length to be coated by the beam, and then by.75; divide this total by 400.

On canvas, first coat, multiply the length by the beam and then by 1.5; divide this total by 400. On subsequent coats, follow the same table as on wood and steel decks.

Cabins:

Multiply the length to be covered by the width and divide the total (if paint or enamel is to be used) by 400. For varnish, divide by 500.

Spars:

Multiply the average diameter by 2.5 and then by the height, making your total in square feet. For paint, divide by 400, and for varnish, divide by 500.

Painting Hints

Before wishing you the best of luck in undertaking the painting of a boat, let us stress that "elbow grease" or labour that goes into it, is the biggest part of the job, hence, it is poor economy to use anything but the finest of materials to work with .. use best available paints!

You can never get a good looking job no matter how carefully you paint if the surface is not properly prepared to receive paint. Therefore, read well the directions on the cans and in this article before you start.

All surfaces should be clean, dry and free from dirt, wax or grease, before painting. If remover is used to take off old paint, be sure to read the directions for the remover before using any new paint.

Before applying any paint or varnish to any wood, it is most important that the wood is sandpapered well to secure a smooth, bur-free surface. The smoother you get the wood, the less time and effort is required to obtain the best finish.

A good tack rag, for picking up dust or lint after sandpapering paint or varnish, can be made with a clean rag or cheese cloth saturated with brushing liquid.

It is unwise to paint in damp, very humid or unsettled weather conditions. The best time to paint is in dry weather when the temperature is between 40° and 80° and the relative humidity not higher than 65%.

The paint must be well mixed. Pour it from one can to another several times and stir after each pouring so that the pigment becomes completely mixed with the liquid. Re-stir occasionally during application.

Do not shake varnish because it tends to create air bubbles. Use varnish just as it comes in the can. If, however, it is necessary to add thinner it is advisable to stir it gently in one direction only, not back and forth.

It is not good practice to paint or varnish out of the can in which the paint or varnish comes. Have another clean can handy and pour sufficient material into it to keep you going for a half hour or so. Then securely cap the original can. The purpose of this is to lessen the chances of dust, etc., getting into your paint or varnish.

Smoother finishes will be secured by brushing the paint or varnish with a fore-and-aft motion only; avoid brushing up and down. Finish off by lightly brushing with the tip of the brush in one direction only.

Both roller and good bristle brushes can be used, but use only good tools. Clean them after

every usage and they will save you time and money and give you better jobs.

Most marine paints are actually made with a specially formulated varnish base and they should, therefore, be applied exactly as you would apply varnish, namely: flow them on freely, brish them out with a fore-and-aft motion, and level off with the tip of the brush.

Always lightly sandpaper between coats. This gives the next coat better adhesion and also helps the appearance of the finish. Before applying the next coat, dust off carefully and wipe down with a clean rag dampened with brushing liquid.

Thinner added to paints and varnishes reduces the thickness of the film and correspondingly, reduces its life. Therefore, thinner should not be added except under extraordinary conditions and then only sparingly. Read the directions on the can before adding anything. Also, it might be well to try brushing out a small area first to find out if the paint will go on reasonably easy; if it does, forget about thinning.

If drying is too fast add a small quantity only of brushing liquid, about a tablespoon to the quart.

If the paint or varnish must be applied under cold or damp conditions, its drying will be retarded. In these cases, it is better to apply thinner coats by adding not more than two tablespoons of special thinner to the quart.

Do not add any drier to any marine paint. Enough drier has been incorporated into the paint during manufacture and adding more could very well ruin the entire job.

The principal metalic pigments used in the manufacture of marine paints are Titanium, Zinc and Lead. Titanium and Zinc predominate in finish coatings because of their greater whiteness and their inertness to discoloration from sulphide gases, to which many boats are exposed. Lead is used principally in putties, cements, etc., and in priming coats, all of which shall be coated over, thereby preventing their exposure to sulphide gases.

So, now you know all about it. Go to it, and let's hear how you make out when you come to see us at the Boat Shows.

Important Notice

In presenting the recommendations contained in this article, the following aspects of the painting operation are presumed:

1. That the directions on the containers will be carefully read before applying any of the products mentioned.

2. That all the paints mentioned herein will be thoroughly stirred before using so that all the pigment is mixed completely with the liquid and kept stirred.

3. That all surfaces will be dry, clean, and free from rust or grease before painting.

4. That all painting will take place under conditions suitable for the practical application of paint products.

5. That all coatings will be applied by Brush or Roller; spraying is not recommended for marine work. Spraying always requires the addition of thinners, thereby lessening the thickness of the film and correspondingly, its life.

("Fishing Gazette" New York February, 1956)

State Lobster Research Project Continues

Francis W. Sargent, Director of the Division of Marine Fisheries of the Massachusetts Department of Natural Resources, announced that sixty-two deep-water, offshore lobsters were liberated at the entrance of Beverly Harbour by Daniel B. Pierce, Shellfish Assistant, Division of Marine Fisheries - the lobsters were tagged with serially-numbered, monel tags for the purpose of eventually determining whether or not these offshore lobsters tend to return to the deep waters far offshore or whether they remain in the local coastal areas.

Sargent disclosed that 415 lobsters were also tagged and released in several locations along the edge of the Continental Shelf, southeast of the Nantucket Lightship for the purpose of studying possible lobster migration patterns.

These lobsters were part of a 7,000 pound haul of lobsters, having been caught aboard the U.S. Fish and Wildlife Service research trawler Delaware in waters from two hundred to four hundred fathoms deep.

Participating in the joint Federal-State project aboard the research trawler Delaware were John T. Hughes, Massachusetts Division of Marine Fisheries lobster culturist and Kenneth Boylston of Scituate, a representative of the South Shore Lobster Fishermen's Association.

Sargent urged all fishermen to return to the Division of Marine Fisheries any tags discovered in traps or trawls so that lobster migration may be tabulated.

("Fishing Gazette" New York February, 1956)

Fishermen's Loan Act Allows Repayment Over Eight Years at 5% Interest Rate.

Fishermen may now borrow up to $4000 from banks or credit unions, and pay it back over eight years at an interest rate of only five percent.

The Fisheries Improvement Loans Act, which went into effect December 12, allows money to be borrowed for every kind of capital investment needed to carry on fishing operations. Loans made under the Act are not financed by the Federal Government, but part of the risk to the lender is borne by Ottawa through a guarantee to reimburse them for a certain part of their losses.

If a bank or credit union makes guaranteed loans to borrowers to a total amount not exceeding $500,000, the government would absorb losses sustained by the lender up to 15 percent of the total. Government guarantee for loans which total over $500,000 is set at 10 percent. The present Act covers loans made by all lenders during the next three years up to a total amount of $20 million.

Money will be loaned for: purchase or construction of a fishing vessel; a shore installation or fishing equipment; major overhaul or major repair of a fishing vessel; construction, repair or alteration of any building used for fishing operations.

Fishermen will be required to make a down payment amounting in most cases to 30 percent of the amount of their loan. Terms of repayment will be related to the individual circumstances of the borrower. The bank or credit union will take security in connection with each loan on one of the following forms: a promissory note signed by the fisherman and endorsed by one or more other persons; security on an insured fishing vessel, or in the case of loans amounting to $1000 or less, an assignment by the fisherman of money payable to him.

("Western Fisheries" Vancouver B.C. February, 1956)

Albacore Tuna May Make Round Trip in Pacific

The albacore tuna, which suddenly appears off the Southern California coast in mid-July and disappears again in September, may be making a round trip across the Pacific Ocean during the period it is gone from California shores.

This possibility came to light recently with the recovery off California of an albacore tagged by the state's Department of Fish and Game in almost the same spot 11½ months before.

Previously, four California-tagged albacore had been recovered by Japanese fishermen - two off Japan and two in mid-Pacific. One of these fish had been tagged at the same time and place as the one just recovered off California, and had been at sea six months - just half the time it took the California recovery to get back to the original tagging spot.

("Western Fisheries" Vancouver B.C. February, 1956)

How Borneo Cutch is Produced

Traditional Giving Way to Modern Methods

The use of cutch, and particularly that produced in Borneo, in the tanning and preserving of

fishing nets, goes far back in time.

The natives of Borneo discovered that the extract of the bark of a certain species of mangrove trees, which grow so abundantly on the edges of the sea around their coasts, on the shallow water mud-banks, and up the tidal rivers, gave great protection to their nets and they also dyed them to a dark red-brown colour.

In early days (and even today) the cutch, or mangrove bark extract, was simply prepared in an open pot over a fire, the bark being thrown in and boiled for a long period until all its tannin was removed, and the infusion concentrated sufficiently for the processing of nets.

For 50 years and more, however, this simple native process has been handled in a more scientific fashion, and modern plants have been erected to deal efficiently with large tonnages of bark, and convert them to cutch in solid block or tablet form, convenient alike to the fishermen or the net factory. The cutch is packed usually in cases - made on the spot from local timber - and shipped all over the world, wherever there is fishing.

The collection of the large quantities of bark involved is a procedure on its own. Bark must arrive fresh at the factory, it must be from the right species of mangrove, while supplies must be so arranged that they come in steadily or deterioration will set in if stored for any length of time.

As the bark today may come as far as 100 miles from the factory, by boat, some idea of the problems involved may be gathered.

Once at the plant, the bark is treated, in a series of large, open vats, to successive applications of hot water, until all tannin has been extracted, and the resulting liquor passed, after settling to remove certain insoluble matters, to the evaporators.

Here, in closed vessels, under vacuum, the weak liquor is concentrated to about 50 per cent solid concentration, and then passed to the "finisher", where more water is removed, and the cutch, now of some 80 per cent solids, is poured as a thick, treacle-like liquor

into moulds, where, on cooling, it sets to the brittle solid well known to fishermen.

As coal is not available to the factories, the mangrove timber is used as fuel, while - for it also is resistant to salt water - it is used extensively for piling of wharfs, houses, etc.

The factories are isolated communities, and so have to be self-sufficient. A store forms the centre of activity, where food and clothing for the native workers, and indeed all necessities are provided.

The mangrove tree is self-planting, the seedlings being of very rapid growth to a height of several feet; thereafter growth is slow, so that as the years have passed, large areas have been cleared and are only slowly recuperating.

The importance of cutch in the last war was recognised by the bombing of the factories to deny the product to the Japanese. Great difficulties have had to be faced in rehabilitating the plant and industry since the war, so that it is only now that Borneo cutch is again readily available to world markets.

Labour difficulties add to the problem, as Borneo is developing, with a consequent drain of men from old industries to the new, such as oil, bauxite and lumber.

A British company has recently opened a new factory in New Guinea to supplement supplies from its Borneo operations, so that additional supplies will shortly become available. Contributed by Lambeth & Co. (Liverpool) Ltd.

("World Fishing" London March, 1956)

Singapore Fisheries Have Been Revolutionised

Singapore fishing fleet has been revolutionised in the last five years.

Production of fish from offshore grounds has risen from nil in 1950 to 2,000 tons annually.

The establishment of a fisheries loans fund in 1951 provided suitable craft and gear with which to extend fishing operations into offshore grounds. The fleet is now mechanised on a scale unapproached by other countries in the region.

("The Fishing News" London March 9, 1956)

Aureomycin Treated Fish Landed

First fish reputed to have been treated with Aureomycin on board a trawler was landed at Rockland recently from the Birds Eye trawler Crest, Mike Mahar, skipper, Lee Benner, first mate. Accompanying the trip was Edward Kline of the American Cyanamid Company of New York and Princeton, N.J. and Dan Heald of the Boston laboratories of Birds Eye Division of General Foods. The trip was one of 15 days and a small portion of the catch only was treated. Later the fish were taken to the laboratories for tests. The idea was to prove or disprove the preservative qualities of Aureomycin. If successful it would mean longer trips, both in distance and in time, and the landing of a high quality fish.

("Fishing Gazette" New York February, 1956)

Whales and the "bends"

In Britain's "Nature", Dr. F.C. Fraser and P.E. Purves put forward the theory that the whale's spout largely consists of mucus, gas and globules of emulsified oil which are expelled on surfacing. The interesting theory is that because oil has an affinity for nitrogen (it absorbs six times as much as the blood can) it is absorbed in the droplets of oil and spouted away so the whale can go to great depths without the divers "bends".

("Outdoors and Fishing" Sydney April, 1956)