FISHERIES DEPARTMENT, WESTERN AUSTRALIA

MONTHLY SERVICE BULLETIN

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STAFF NOTES

The Superintendent (Mr. A.J. Fraser) as Chairman, and Fauna Protection Officer H.B. Shugg as Secretary, of the Fauna Protection Advisory Committee, will accompany members of the Committee on an inspection of new sanctuaries in the wheatbelt area late this month. The party expects to leave Perth on August 29 and travel to Merredin, Nungarin, Bencubbin, Welbungin, Koorda and Mollerin and return to Perth through Carribin Rock on September 1.

The Supervising Inspector (Mr. J.E. Bramley) returned from Shark Bay and Carnarvon on Friday, July 27.

Miss V.T. Hogan of Head Office resumed duty after annual leave on July 23.

Officers proceeding on annual leave this month include Technical Officer L.G. Smith, who will commence two weeks' leave on August 1; Inspector A.V. Green, of Albany, from August 6 to 26; and Inspector A.J. Bateman, skipper of m.v. "Silver Gull", from August 20 to September 9. Senior Inspector J.E. Munro plans to commence his leave on September 3, followed by Assistant Inspector G.H. Lyon on September 10 and Inspector Davidson on September 23.

Relieving Inspector A.K. Melsom will in turn be in charge of the Albany, Metropolitan and Fremantle districts during the above periods.

We welcome to the staff Mr. Robert J. Murray, who commenced as a cadet inspector on July 9. After duties in the Metropolitan district, Mr. Murray will transfer to Geraldton on August 6, to assist Inspector R.M. Crawford. Assistant Inspector R.J. Baird who is at Geraldton at present, will return to the Metropolitan district.

Inspector Carmichael, Whaling Inspector at Babbage Island, will be in Geraldton for a week from August 13 to give evidence at Court in departmental prosecutions. During this period Inspector N.E. McLaughlan, of Shark Bay, will act as whaling inspector.

Inspector R.M. Crawford has been promoted to Inspector, Grade 1, Classification G-II-2, from July 6, 1956.

DEPARTMENTAL VESSELS

The Supervising Inspector (Mr. J.E. Bramley) reports that the "Misty Isle" is now in first-class condition. Hull repairs have been effected and her deck renewed. Her engine has also been overhauled and refitted, and is now functioning perfectly.

The p.v. "Kooruldhoo" will remain at the Abrolhos for about one week after the season ends on August 15. Assistant Inspectors G.H. Lyon and S. La-Roche will then bring her to Fremantle for her annual refit.

BARRACOUTA IN WESTERN AUSTRALIA.

Reports Sought by Department

Press reports from Albany indicate that an invasion of Barracouta to local waters is now taking place on a scale rather larger than usual. These fish are well-known in the Esperance region and appear each winter in the King George Sound area. Their numbers fluctuate and in some seasons they are much more abundant than in others. The winter of 1956 appears to be one such favourable season for Barracouta. The

Department would like to have more information from its district inspectors on this year's invasion and particularly how far westwards the fish have travelled. All officers visiting Augusta and other ports in the South-West are asked to make inquiries of the local fishermen.

In some years the invasion is on such a scale that the Barracouta occur as far north as Fremantle. Perusal of old departmental reports yield interesting particulars.

Thus in 1903 Inspector A. Abjornsson reported that Barracouta appeared in small numbers at Fremantle about the beginning of May and entered the Swan River as far as the Narrows. "The fish were very poor, yet sold well at from 4s. to 8s. per dozen." This seems to be the only record we can trace for the Swan River estuary. In the Albany district the same year 8½ tons of Barracouta were caught commercially. In 1904 the fish apparently were not plentiful north of Bunbury but large shoals were present in the vicinity of Cape Leeuwin. In 1905, however, Barracouta again invaded the Fremantle area; large catches were made, flooding the market, "thus affording the public cheap fish." In the winter of 1906 Barracouta were much less plentiful on the west coast and were unrecorded in later years until 1912. For that year the Bunbury statistics record 50 lb. being caught at Bunbury. There have been a few invasions on the west coast since that date but records are scanty and were not well kept.

The invasion of Barracouta may be correlated with other unusual fish occurrences this winter. Inspectors should make inquiries on the subject and notify Head Office.

WHALING

Operations are reported to be proceeding satisfactorily at both the Babbage Island and Frenchman's Bay stations. The Nor'-West Whaling Company, which it will be remembered acquired the Australian Whaling Commission's station just before the commencement of the season and decided to conduct all its operations from that base, had taken 289 whales by July 21.

Up to the same period the Cheyne Beach Whaling Company had taken 73 whales, including a fin whale measuring 66'6". As the Commonwealth Whaling Act lays down that one blue whale is the equivalent of two fin whales or 2½ humpbacks, the fin whale will count as the equivalent of one humpback in the Company's 1956 season quota.

SPEARGUNS CONTROL ACT

It will be remembered that the above Act came into operation late last year and the waters for one-half mile from Rottnest shores were proclaimed as a prohibited area. In the Government Gazette of July 13, some further areas have been proclaimed where it is illegal to operate spearguns. They include :-

1. The whole of the Rottnest Island reserve (A.16713.)
2. The recently declared Guilderton townsite at the mouth of the Moore River in the Gingin Road District.
3. The whole of the Moore River between the sea and location 787, which is approximately 4 river miles from the mouth.
4. The waters of the Swan River from high water mark on the left bank to 100 yards offshore in all that portion which is contiguous to the Belmont Park Road District.
5. The waters of the Swan River from high water mark on the right bank to 100 yards offshore in all that portion which is contiguous to the Peppermint Grove Road District.
6. Those portions -

   (i) of the Canning and Swan Rivers 100 yards wide, and

   (ii) of Bull Creek (north of a prolongation of the southern alignment

of Bulls Creek Road) within a maximum of 100 yards in width measured from their left banks at high water mark and which portions are contiguous to the Melville Road District.

It should be remembered that fisheries inspectors, as well as police officers, are charged with the responsibility for administering this Act.

QUEENSLAND FISHERIES

Earlier this year, samples of Queensland scallops and prawns were well received in the U.S.A. Since then, the first large shipments of Queensland prawns, totalling £18,700 in value, were recently despatched from Brisbane to the U.S.A., and will be marketed under their American name of "shrimp". With the introduction of trawling methods, the discovery of new areas and the attraction of trawlers from other States, hauls have greatly exceeded local requirements, and a new export industry has developed. A small interstate market has been established in scallops taken from the beds in Hervey Bay.

OPEN SEASONS

(a) An open season for grey kangaroos has been declared in certain regions within the protected area for grey kangaroos. They are the Preston, Upper Blackwood, Gingin, Kojonup, Manjimup and Denmark Road Districts. The open season commenced on July 15 and will close at midnight on December 15. During the intervening five months in those districts, kangaroos may be taken by any person from vacant Crown land, and from privately owned land with the owner's consent, by any person whether licensed or not. However, any person wishing to sell the skins of grey kangaroos must hold an appropriate license issued under the Regulations.

(b) The usual open season for all species of finches has been declared in the Kimberley Land Division. The season is to open on September 1 and will close on

December 31. During this period persons who are licensed to do so may trap any number of finches for gain or reward. Strict regulations apply in respect to the caging, holding, transporting and exporting of finches, and any person interested in trapping in the far north should be referred to Head Office for full particulars.

FAUNA PROTECTION ADVISORY COMMITTEE

Reports by the Chairman and the Secretary were received at a meeting of the above Committee held at Head Office on July 5. Following is a brief summary of the recommendations and decisions made :-

(a) Proposed National Park between Mandurah and Harvey

It was decided that a sub-committee be formed to go more thoroughly into the plan to have a national park in an area adjacent to Lakes Preston and Clifton, and including those lakes. Mr. Angus Robinson, of Coolup, a deputy member of the Committee, was invited to join the sub-committee. Other members appointed were Dr. D.L. Serventy, convenor, and Mr. A.J. Milesi.

(b) Open Seasons

(i) Grey Kangaroos: The Committee agreed to recommend an open season in all the districts in the lower South-West from which a request had been received from the local authority. Members expressed the opinion that open seasons seemed to be ineffectual, judging by past experience. The number of kangaroos destroyed did not seem to be great as skin sales did not increase overmuch and farmers claimed that there were more kangaroos causing damage than before. The Committee felt that the latter was caused through habitat destruction as a result of land settlement, rather than an increase in the overall population. The clearing of their habitat forced the kangaroos into local concentrations which made them more noticeable.

(ii) Finches: In view of the increased number of trappers licensed to operate during the open season this year, the Committee recommended that a departmental officer be made available to check the trapping and caging facilities used and the effects on stocks.

(iii) Emus: The Committee believed that an open season for this species within its protected area was not warranted. Members considered that the emu menace in the lower South-West was exaggerated and that an open season would be of little use if the birds were really a pest, as there was no financial inducement to professional hunters to operate. It was pointed out that where emus were causing damage to property, owners could take out a license to destroy them, or, if they had an existing license to take grey kangaroos, it could be amended to include the taking of emus.

(c) Royalty

Previously, a recommendation had been made by the Committee that outside the protected area royalty be abolished, and inside the area the present charge of ninepence per skin be reduced to sixpence per skin.

The Committee was advised that the matter had been considered by Cabinet, which had decided that there was to be no alteration to the present methods of assessing royalty.

(d) Regulation Amendments

Consideration of amendments to the regulations was deferred until the next meeting, so that additional information could be obtained on a number of points.

(e) Inspection of Sanctuaries

It was agreed that some important fauna sanctuaries created in recent months in the northern wheatbelt should be inspected by the Committee, and, as

reported elsewhere in this issue, the inspection will be made later this month.

DUCK BANDING PROGRAMME

Results obtained from the duck banding programme were reviewed at a meeting of the sub-committee on bird-banding of the Fauna Protection Advisory Committee held on July 31. Those present were Mr. A.J. Fraser (Chairman), Dr. D.L. Serventy (member) and H.B. Shugg, Secretary. Mr. B.K. Bowen (Research Officer) and Technical Officer J. Traynor also attended. Dr. Serventy said that the only obvious conclusion that could be drawn from the recoveries at that stage, was that the duck population of the South-West appeared to be an homogeneous one, although there was some suggestion of movement patterns and of more favoured migrational routes.

It was decided that in future operations in the metropolitan area, the sex and age of the ducks be recorded at the time of banding to allow a more intensive study, and that as many birds as possible would be banded before the commencement of the open season. A recommendation that the possibilities be investigated of establishing traps of a permanent, or semi-permanent, nature within the metropolitan area was adopted. The sub-committee further decided that Dr. Serventy and Mr. Bowen should confer with Mr. N. Stenhouse, a statistician of the C.S.I.R.O., on methods of assessing the information from recoveries to date. It also agreed that the results achieved and deductions drawn from the programme should be published as a technical paper.

GOOD KING PRAWN SEASON

From the commencement of operations on March 27, until the flooding of the Peel Estuary on June 9, king prawn catches were very good, reports Inspector Bowler from Mandurah.

Mr. Bowler added that the grand total of 18,566 lb. caught by local professional fishermen was easily the best of any year in the last ten years, according to the records in his office.

THE CLEARING HOUSE

How Fast do Fish Swim?

by David Gunston

Anglers frequently fall into the error of over-estimating the speeds of fish. The reel screams out its line, the captive struggles mightily and plays cunningly, and all the time appears to swim about faster than is actually the case. Nevertheless there are many kinds of fish which can put up a good speed, even when not hooked, and the whole subject of fish speeds is a fascinating one.

To begin with, no creatures are such masters of their natural element as fish, not even birds, with their apparently effortless soaring and gliding. A fish can remain motionless for as long as it likes, it can move forward or backwards an imperceptible degree, it can spurt forward from scratch at high speed, it can go up or down with supreme ease. Furthermore, the shape of a fish is ideal for swift, sinuous movement, and its underwater streamlining is perfect, as man recognises when he makes submarines and torpedoes.

The simple "jet-propulsion" with streams of water ejected swiftly backwards through the gills, the moulded body shape with its bullet-shaped head and tightly-sealed jaws which allow no water to enter, the smooth-surfaced, inset eyes, the scales and the tapering rear quarters are all admirably suited to speedy progress through the water. The resistance of water, by the way, is something like 700 times that of air, so the really high speeds achieved by fish are little short of miraculous.

It was formerly thought that the fins, particularly the caudal fin, and the tail were the sole and primary means of locomotion, but experiments have shown that a fish without tail or fins is far from helpless. The chief method of progression is through the rippling undulations of the fish's body, aided by the streams of water from the gills. The other organs are useful as steering devices, balancers, brakes and aids to sudden movement, while the swim-bladder inside

all fish, a kind of sack containing gas lying just above the gullet, acts as a sort of hydrostatic lifebuoy, adjusting the gas contents according to the degree of water pressure at varying depths. Thus a fish can move quickly up or down in the water without experiencing any discomfort at the sudden changes in external pressure.

Both the shape and tail formation of fish are good guides to their powers of speedy locomotion. The fastest fish have long, tapering cigar-shaped bodies, broad rather than high, whereas fish with short, high, laterally-compressed bodies (the perch or bream shape as opposed to the salmon shape) are slower moving. Those fish with deeply forked tails are nearly always the fastest over long distances, and those with square or rounded tail patterns are usually slow-movers, although most of them are able to make short dashes at high speed if the need arises.

It is extraordinarily difficult to get reliable proof of fish speeds, for there are many obstacles in the way of checking underwater movements, some of which may be startingly sudden, with any degree of accuracy. Fish speeds have been recorded with a variety of devices: By stop-watch, "fish-o-meter" attached to a rod to register the speed at which the line is run out. Another similar device in which tank fish are harnessed with a fine silk cord which unwinds over a large pulley actuating a sensitive relay once every revolution. A cine film of swimming fish helps estimate their speed by comparing the varying positions on each picture-frame. By timing a swimming fish from the known speed of a ship which it passes in a recorded time is another method. Calculating the speed of the current in a river and then working out the minimum speed a fish must achieve to make headway against it provides another useful method.

The fastest fish of all is the sailfish, a variety of swordfish. It has been known to take out 100 yards of line in three seconds, a speed of nearly 70 m.p.h. Tunny also rush at a good speed, recorded at about 44 m.p.h. maximum by a "fish-o-meter", and a tunny that doesn't spurt off at 40 m.p.h. or over when it first feels the hook is an unusual catch. But for sheer impact of speed, sometimes directed at a boat, the thrust of a swordfish takes some beating. It has been shown that to drive the rapier of a swordfish through

some 20 inches of hardwood sheathed with copper and often faced with oak takes a driving force at the moment of impact of at least 60 m.p.h.

The wahoo has been timed by stop-watch to travel 200 yards in 11 seconds, when hooked, which is an average speed of just over 37 m.p.h., while the fighting tarpon and the mako shark can both reach a maximum speed of about 35 m.p.h., sometimes hurling their bodies completely out of the water.

Among the smaller species, the trout follows the salmon with a maximum speed of about 23 m.p.h., and more than one stop-watch has registered a pike's speed at 20 m.p.h. Devilfish at 14 m.p.h. and bass at 12 m.p.h., both maximums, are speedy adversaries, and even a minnow can swim at over nine miles an hour, according to stop-watch calculations. Here are some other authentic speeds recorded for species of special interest to anglers: perch, 10.2 m.p.h.; roach, 10 m.p.h.; barbel, 7.6 m.p.h.; dace, 9.3 m.p.h.; carp, 7.6 m.p.h.; mullet, 8 m.p.h.; eel, 7.5 m.p.h.; chub, 5 m.p.h. By way of comparison, the bream moves along at only 1¼ m.p.h., although the picture presented by an octopus darting about at 4 m.p.h. runs contrary to the generally accepted opinion that these devilish creatures are slow-moving and sluggish by nature.

A marked eel, is known to have swum 750 miles in 93 days, which gives it an average speed of around 8 miles a day, and a salmon has been known to swim at over 60 miles a day for more than ten days in succession. The usual daily mileage for a salmon in the sea has been estimated at nearer 25 miles per day, however. It should hardly be necessary to add that if any angler ever gets the chance of measuring a fish's speed, over even the shortest distance, it would be a great pity to neglect the opportunity of adding to our knowledge of this subject.

("Outdoors and Fishing" Sydney July, 1956)

Daffynitions

Annoyance: Only form of intense irritation that you can't scratch.

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

What Filleting Machines can Achieve.

Impressive claims for German equipment.

Ever since the end of the war when filleting and skinning machines were first tried in this country, the popular cry has been "no machine can ever fillet like the skilled operative using a knife on the market."

While visiting the International Fisheries Trade Fair at Copenhagen, Charles Ekberg was able to spend a considerable time watching different filleting and skinning machines at work and to examine the results very closely.

As a result of his observations he now says: "No human hand could ever fillet or skin as efficiently as the machines on show. Workers using filleting knives must leave more flesh than these machines, which cut the skin absolutely clean."

Comprehensive tests on these remarkable machines, made by Nordischer Maschinenbau Rudolf Baader, of Lubeck, give figures which are worth quoting.

A firm using the "Baader 38" unit on full production, sometimes working two shifts daily, estimated several times that the unit's yield gave at least two per cent more flesh than hand filleters.

During test periods the unit's yield was between 36 per cent and 40 per cent pure flesh, depending on the quality of the fish and the size of nape to be cut off.

Taking an average fish weighing 2 lb., which the unit would process at about 40 per minute, with a skinned fillet yield of 40 per cent, the "Baader 38" produced 1,920 lb. of skinned fillets per hour.

During the test, hand labour turned out in the same time 1,824 lb. of skinned fillets per hour.

This meant a saving of 96 lb. of skinned fillets per hour, or taking as example a seven and a half hour day, 720 lb. of skinned fillets at no extra cost out of the same amount of raw material.

Further Examples

For a second example of the economy and efficiency of machinery there is another of the German firm's range, "Baader 338".

In this experiment the average fish was taken as weighing 3.1 lb., processed at 35 fish per minute with a yield of 40 per cent for skinned fillets.

The machine produced 2,589 lb. of fish fillets per hour, whereas hand labour managed 2,457 lb.

Thus there was a test saving of 132 lb. of skinned fillets per hour, or in a seven and a half hour working day, 990 lb. more skinned fillets produced out of the same raw material.

One more example: the "Baader 99", a big unit designed for large haddock, cod, pollack, reds and similar fish. This unit has a range of between 20 to 47 inches overall from tip to tail of the fish. Within that range, no adjustment is necessary and the machine measures and adjusts its tools automatically.

"Baader 99", which consists of heading, filleting, skinning machines and knife grinder, will automatically head, fillet and skin the fish.

With this unit on test there was a gain over hand labour of 1,980 lb. of fish over an eight hour shift. Once again, only four operators are needed.

In this case, the average fish weight was taken at 11 lb. with a machine speed of 20 fish per minute.

The hourly production was 5,670 lb. or 42,500 lb. in a seven and a half hour day. These figures mean an average of about 1,420 lb. per operative per hour, there being four operatives.

To get a similar result, 14 filleters and six skinners would have been necessary.

(" The Fishing News" London June 8, 1956.)

FAO Offers Information on Fisheries Technology

More than 2,500 abstracts, covering every branch of fisheries technology, have now been published in World Fisheries Abstracts, a bi-monthly review issued by the Fisheries Division of the Food and Agriculture Organisation of the United Nations, Rome.

The periodical, which is now in its seventh year of publication, is published in three separate editions, English, French and Spanish, and more than 200 periodicals and publications from 31 countries are regularly reviewed in it (including this journal). The subjects covered include fishing boats, factory ships, fish harbours, fishing gear and methods, fish handling and preparation, packaging, processing plants, fresh and frozen fishery products, ice manufacture, salting, drying, smoking, marinating, canning and other processing methods, by-products, seaweeds, chemical analysis and nutritive values of fisheries products.

The abstracts, which are frequently illustrated, are printed in such a way that they may be cut out and filed for ready reference. Nearly 600 of the 2,500 cards refer to fresh and frozen fishery products, more than 400 to fishing boats, nearly 400 to fishing and methods of capture, and more than 200 each to such subjects as salting, drying and by-products. There are nearly 200 dealing with canning, etc., and chemical analysis and composition, while some 150 are concerned with handling and processing, and more than 100 with fish and fisheries in general.

The yearly subscription to World Fisheries Abstracts is only $4.00, or £1, or the equivalent in local currency. Copies of most of the back numbers are also available. Write to the Food and Agriculture Organisation, Viale delle Terme di Caracalla, Rome.

("Fishing Gazette" New York May, 1956.)

Nylon Propellers Won't Break

There is no secret about my work with nylon propellers and blades, said Mr. Hojsgard to Fishing News, while showing at the Fisheries Trade Fair at Copenhagen.

"The substance used is polycaprolaktam. This is granular, and is heated to 300 degrees under an atmospheric pressure of 90. It is then poured into moulds, or castings, cooled, and the smooth, resilient nylon blade is the result."

"Though you can cut the blades or boss with a knife, they will not break or splinter under the most severe conditions."

Mr. Hojsgard told how special tests were carried out in the North Sea in thick ice with a pilot boat using an ordinary bronze propeller as experiment control.

The ship, using a propeller with nylon blades, was put full astern against thick ice with no result. Ten inch blocks of ice were then thrown into the propeller, which did not break for two hours.

Two new nylon blades were then fitted and the unit ran for three weeks in heavy ice before breaking again.

After only half an hour under the same experimental conditions, the bronze propeller smashed completely.

Tried to Break It

"I would like you to make it quite clear that I was deliberately trying to break the nylon blade, " Mr. Hojsgard told Fishing News.

On his Copenhagen stand Mr. Hojsgard invited visitors to hit his nylon blades and bosses with a hammer to try out their strength.

It was after exhaustive experience with fishing vessel engines and variable pitch propeller systems that Mr. Hojsgard turned his attention to synthetics.

A friend, Mr. Berth, of the Dansk Thermo-plastisk Industri, who had been a pioneer in the synthetic field, asked if it were possible to make a small, fixed propeller in nylon.

Both men got together, and bearing in mind the special properties of nylon, the blades were given a rounder shape on the fore edge, rather like the flippers of the smaller species of whale.

This little three-bladed, fixed propeller was delivered to the Swedish outboard motor company, Electrolux Ltd., and was an instant success.

Besides being light (the specific gravity of nylon is about 1.2), it turned out to be stronger than propellers previously used.

First Experiment

Some idea of how the first nylon propeller was handled may be gained from the fact that the boat was run at full speed onto a stony beach so that the engine whipped up and stopped when the propeller hit the stones.

There were only some small hacks in the blades, not sufficient to interfere with its efficiency.

An engine and shaft were arranged so that the propeller was running in a tub of water full of heavy blocks.

The nylon unit hammered continuously against the blocks, but showed no ill-effects from the pounding it had received.

At this time, Mr. Hojsgard and his company were also carrying out work with variable pitch propellers, which they had begun years before. He and his technicians devided to make their blades of nylon. They knew that friction between nylon and water was practically nil, and their experiments had showed it to be extremely strong and resistant to cavitation or "pitting."

Avoiding Galvanising

The work was speeded up considerably when Mr. Hojsgard got a commission from the Bergius Co., of Glasgow, to produce a variable pitch propeller gear with no galvanising effect on sea-water resistant aluminium.

Mr. Hojsgard told Fishing News :

"What should be more desirable than that we should try our nylon idea.

"We made an internally polished mould, which would stand 90 atmospheric pressures, and the first nylon propeller blades were made and fitted experimentally to a 15 h.p. Hundested engine in a pilot boat.

"We tried everything to spoil the blades, and carried out the tests we have described with complete success.

"In our experiments with this propeller, accidentally, a fish box fell onto it, but there was no damage."

Mr. Hojsgard believes his nylon propeller blades and bosses will stand contact with pieces of wreckage, trawl doors, and in fact any obstacle likely to be met with by fishing vessels, without breaking.

Shock Absorbence

He feels that the flexibility of nylon must not be under-valued when it comes to shock absorbence, and the taking of shock which otherwise would be transmitted straight into the engine.

The Hundested Motor Fabrik Ltd., is now producing a nylon propeller for its 150 horsepower trawl engine.

Mr. Hojsgard says there will be no trouble in producing bigger propellers in nylon, though he feels that because of casting difficulties it will be more expedient to bolt the blades onto a bronze or steel boss.

He is at present experimenting with the use of nylon for other parts used in marine engineering.

("The Fishing News" London June 8, 1956.)

Sea Lamprey Provides Shock

The Canadian Minister of Fisheries announced that the sea lamprey, which has been destroying large numbers of lake trout and whitefish in the Great Lakes, possesses an amazing characteristic. It sets up an electrical field around its head and this, when amplified, has been used to light a flash bulb and trigger the shutter of a camera, thus taking its own photograph.

The implications of the phenomenon are still under study.

The new discovery was made by Dr. H. Kleerekoper, Professor of Zoology, McMaster University, Hamilton, Ont., whose work has included research into the effect of sonic and ultra-sonic vibrations on fish. Dr. Kleerekoper is currently supervising a research project being conducted at McMaster for the Fisheries Research Board of Canada.

The research is being done in connection with finding a method of stopping devastation of stocks of commercially valuable fish. Any new fact may open another avenue toward effective control measures. Dr. Kleerekoper's discovery is a result of preliminary investigations leading to chief studies relative to the effects of ultra-sonic vibrations on the lamprey. His observations are of great biological interest, highly intriguing because the lamprey's electrical field is limited to regions around its head.

("Fishing Gazette" New York May, 1956.)

Shark Comes to Life

A seven-foot shark was caught in the Rockport boat basin, displayed for tourist inspection for quite a while, and then was taken across the basin to the TGFC's laboratory, for a check by the aquatic biologists.

Patricia Pew, laboratory biologist, had just removed her arm and hand from the shark's mouth, where she had been taking teeth measurements when the supposedly dead shark suddenly came to life and chewed up a heavy boat oar which was being used as a prop to hold its mouth open.

("Fishing Gazette" New York May, 1956.)