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STAFF NOTES

On June 6, the Minister for Fisheries (Mr Ross Hutchinson), accompanied by the Director (Mr A.J. Fraser), the Chief Clerk (Mr B.R. Saville) and the Minister's private secretary (Mr J.R. Driscoll), will leave by air for Broome. They will visit the pearl culture centre at Kuri Bay to inspect its present stage of development. They will return to Perth by air on June 13.

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We welcome to the staff two new officers, Messrs Johannes Boelo Byleveld and Charles Walter Edward Casselton. Both have joined Head Office staff, the former being appointed to the statistics position vacated by Mr Buchanan, while the latter will take charge of the records. Mr Byleveld was transferred from the Accounts Branch of the Department of Agriculture, and Mr Casselton from the Records Section of the Child Welfare Department.

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At an informal function at Head Office on May 24, we said farewell to Mr W.K. Cherrington and to Mr J.M. Mitchell who had been promoted to positions in the Mechanical and Plant Engineer's Branch of the Public Works Department, and to the Mental Health Services, respectively. On behalf of the staff, the Director presented to both an infra-red ray heater and wished them every success in their future service careers.

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Miss M.A. Bartlett, of Head Office, will enjoy one week's annual leave commencing June 11. Officers to

resume duty this month include Inspector A.V. Green, of Mandurah, who has been on extended sick leave since his road accident, and Mr C.R.C. Haynes, mate of the r.v. "Lancelin", who successfully underwent an eye operation recently.

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Inspector G.D. Houston has resigned from the service as from June 29, to accept employment in the Perth City Council's parking inspection force. Assistant Inspector N.K. Henry has also submitted his resignation.

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Officers to commence annual leave next month include Inspector A.T. Pearce, skipper of p.v. "Dampier", on July 2; Inspector T.B. Baines, of Bunbury, on July 30; and Inspector F.J. Campbell also on July 30. Inspector Campbell, who has been on "Dampier" to gain experience of Geraldton and Abrolhos waters, will take over her command during Inspector Pearce's absence.

PERSONAL PARS

Mr Alexander W. White, Assistant Fisheries Officer of the Aden Protectorate Government, called at Head Office recently and discussed fisheries matters with the Director and with Research Officer B.K. Bowen. Mr White was particularly interested in our crayfisheries and when he mentioned that fishermen of his country operated on the green cray, Mr Bowen was just as interested in the Aden industry. Arrangements have been made for one of the Aden plaited cray-traps (which have the funnel entrance at the side) to be sent to Perth for inspection and experimentation. Mr White is here at his own expense on furlough and plans to spend over 4 months inspecting our fishing industry.

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Four members of the sub-committee on statistics, set up by the Standing Committee on Fisheries, will visit Perth this month for discussions with officers of the Department and local officers of the Commonwealth Departments involved regarding the design and introduction of statistical forms on fishery production. The four visitors will be - Mr A.G. Bollen, Assistant Director, Fisheries Division, Department of Primary Industry, Canberra; Mr G.R. Williams, Divisional Administrative Officer, Division of Fisheries and Oceanography, C.S.I.R.O., Cronulla, N.S.W.; Mr D.D. Lynch, Superintendent of Marine Fisheries Management,

Department of Fisheries and Widlife, Victoria; and Mr F. Bagley, of the Bureau of Census and Statistics, Canberra. They will arrive on June 13 and leave for Adelaide on the morning of June 17.

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Mr J.D. Tipper, Director of the Muogamarra Sanctuary, in the Hawkesbury valley, New South Wales, called during the month to discuss fauna conservation in Australia. Mr Tipper, who was on a 10-day visit to the State, also called on other conservation authorities..

MANDURAH CRAFT BUFFETED

Although surprisingly little serious damage seems to have been suffered by the fishing fleets during the gales experienced in May, many of the small craft at Mandurah were severely buffeted. Reporting on this, Inspector E.I. Forster says that about a quarter of the small craft in Soldier's Cove and the main channel were sunk and, to June 1, many had not been raised.

One fishing boat damaged was LFB M 18, owned by Mr Lionel Renfrey. Caught by the nor'-west gale, she capsized near the bar and was beached on the south shore. Damage estimated at £50 was sustained. This consisted mainly of a broken mast, stove-in planking and damaged prawn nets and frame. Mr Forster quotes local fishermen as saying that they had not experienced a storm which lasted so long.

TORTOISE HUNTERS CAPTURE ASTRONAUT

Well, not exactly! But on one of their forays in search of the elusive short-necked tortoise, Fauna Protection Officer H.B. Shugg and Fauna Warden S.W. Bowler, with their voluntary co-searchers, Misses C.A. Nicholls and D. Rook, did pick up visiting master of communications at Muchea for Project Mercury, Mr Dan Hunter, whose hire-car had broken down. This was about 4.30 a.m. on Saturday morning, May 26. Mr Hunter had been bound for the tracking station for some last minute business before returning to Cape Canaveral, when his car stopped and could not be restarted. It was raining steadily at the time, and he appreciated getting an unexpected lift to the Station, so much so that security was slackened for a few minutes while the "hunters" were shown over the inner sanctum where "Deke" Slayton and he had sat and conversed with human missile, Scott Carpenter.

Up to that time only one short-necked tortoise had been found this year. It was discovered by Misses Nicholls and Rook on the edge of a cleared paddock adjacent to the tortoise reserve. It was under the bole of a dead zamia palm which was one of many that had been bulldozed off the paddock now under cultivation. To cap a most interesting morning, however, Miss Nicholls found a second tortoise. This one was a male. It was discovered on the reserve proper, lying at the base of a clump of sedge and appeared to be in very good condition although its carapace was damaged, apparently by a kangaroo's hind claw.

The searches are being continued, not only to try to widen the area of the distribution of the tortoise, but also to record the movements and occurrences of the little fellows on the reserved areas.

NO AERIAL SURVEY IN SPERM WHALE RESEARCH

In an effort to bolster the whaling industry, which has taken a severe blow in this State as a result of the low humpback quotas necessarily imposed, research has been undertaken towards the development and extension of sperm whaling in the Albany and Carnarvon regions. This Department, and the whaling companies concerned, are co-operating with Division of Fisheries and Oceanography, C.S.I.R.O., in the work which is being co-ordinated and directed by the Western Fisheries Research Committee. The programme is designed to secure a better understanding of the magnitude and vulnerability of sperm whale stocks. Aerial surveys were considered to be an essential part of the programme, and finance to cover their cost was sought from the Fisheries Development Trust Account which is administered by the Minister for Primary Industry in the Commonwealth Government.

The Minister for Fisheries (Mr Hutchinson), who made the approach to the Commonwealth, has now received advice that the Minister for Primary Industry has refused to authorise expenditure from the Account for this purpose. In passing this advice on to the companies concerned, the Minister expressed his disappointment that the Commonwealth Government had not seen fit to co-operate in this important developmental project.

BAR AT WILSON INLET

While Australia has seen many a disagreement around or over bars in her comparatively short history, it

would be difficult to imagine one that had aroused a greater total verbiage than has raged around the bar at Wilson Inlet. We refer to the sand-bar, of course.

In recent years, the Public Works Department, which has assumed responsibility for opening the bar, has opened it in the middle. Vociferous complaints against this practice finally led to the recent conduct of a referendum among the local populace. Inspector Carmichael, of Albany, has now advised that the referendum resulted in a solid expression of opinion in favour of opening the bar under the cliffs on the west side - the voting being 289 to 69. Anyone who is rash enough to prognosticate the effects of this vote may do so - but not in this Bulletin!

CRAYMEAT TRADE DISAPPEARS

Amendments to the Fisheries Act Regulations which prohibited from last November the processing of crayfish into craymeat for retail trading appear to have been most effective.

This opinion is held following a series of thorough inspections carried out in this State and reports on investigations in Melbourne. The inspections included checks at all known fishing centres and freezer works up and down the coast, in the metropolitan area and in country centres as far afield as Kalgoorlie, as well as on interstate bound freezer trucks. Investigations in Melbourne were carried out by the Director and the Chief Clerk personally, and also by an officer of the Victorian Department, through the co-operation of that State's Director of Fisheries and Wildlife. It seems that if there is any local or interstate dealing in craymeat at all, it is of negligible proportions.

OPEN SEASON FOR GREY KANGAROOS EXTENDED

Accepting a recommendation to that effect from the Fauna Protection Advisory Committee, the Minister for Fisheries has decided to allow the open season for grey kangaroos to continue for a further two years in certain areas of the South-West. The season will operate in the following shires -

Albany, Augusta-Margaret River, Balingup, Cranbrook, Bridgetown, Busselton, Capel, Collie, Dardanup, Denmark, Gingin, Kojonup, Nannup, Plantagenet, Preston, West Arthur, Upper Blackwood, Northcliffe ward of the Manjimup Shire and part of Woodanilling.

Despite the open season in those districts, any person wishing to take kangaroos for gain or reward, or to sell their meat or skins, must be licensed. The open season has the effect of allowing farmers to destroy kangaroos causing damage without the need to apply for individual licenses and to authorise licensed professional hunters to operate. It also, of course, permits sporting shooters to follow their sport within the affected districts.

FISH MORTALITY IN SHARK BAY

Early last month, the Minister for Fisheries issued a press release on the result of the investigation ordered by him into the phenomenon of the large-scale fish mortality reported in Shark Bay last April.

It was established that the majority of fish killed were deep-water reef varieties, such as gropers, cods, wrasses, parrot fishes and blow-fishes. The water was olive-green in colour and looked dirty. It was so thick that even in shallow water it was impossible to see the bottom. The surface was covered with a slimy substance, apparently decomposed algae. It emitted a most unpleasant odour, redolent with the smell of stagnation, and it was thought probable that the mortality was caused by de-oxygenation of the water resulting from the take-up of oxygen by the decomposing algae.

FAUNA NOTES

An honorary warden, Mr R.T. Wells, of Mingenew, wrote last month that he was mustering sheep about 6 a.m. on May 4 when he disturbed a fox from a patch of scrub. It was immediately pursued by an eagle. The fox, he said, would run about 2 chains then "bail up". The eagle would settle on the ground nearby until the fox started running again, whereon the strange pursuit would recommence. Mr Wells said that his "hack" these days is a Volkswagon car and with it he aided the hunt by tooting the horn to keep the fox on the move. Unfortunately, he concluded, the fox managed to reach another patch of scrub and Mr Wells had to leave to continue his job so that he did not see the end of the affair.

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Fauna Warden N.E. McLaughlan made an unusual "arrest" on April 30. At Greenmount, on the roadside, at least twenty miles from its natural marine haunts, a little, or fairy, penguin (Eudyptula minor) was found wandering at large. He was taken into protective custody and released in Fremantle Harbour.

CLEARING HOUSE

Trawling by Computer

In recent years, the Soviet fishing fleet has been equipped with factory ships, the most modern fishing gear and the most complex processing equipment. Now, at the Fisheries Institute in Leningrad, Soviet scientists are designing an "automatic" trawler.

For a ship of this size (5,000 tons displacement) a crew of 100 would normally be required. For this vessel there will be just under 20. All operations, including navigation, fish finding, catching and processing, will be carried out by the ship's electronic computer.

What would a typical trip be like? At the beginning of the trip the skipper first gives the computer the position of the fishing ground. At the same time the ship's electronic brain receives signals from the various apparatus on wind force, currents, possible driftage and the most suitable course. The various machinery will then be automatically started and the trawler's course set in the correct direction.

Automatic navigation

As usual, catching begins when a shoal of fish has been detected. In this case signals from the sounding devices will be fed directly to the computer, which calculates in what direction and at what speed the shoal is moving and calculates the point of interception. Instructions are further transmitted to the steering gear and main engine, and the trawler immediately alters course, moving into the best position.

When the trawler has arrived at the grounds, the trawl is automatically shot and the speed adjusted to suit. Miniature acoustic devices are attached to the trawl. As the trawl approaches the shoal the acoustic devices indicate its precise location. The computer picks up the acoustic signals and re-determines how much warp should be run out so that the trawl will centre on the shoal.

After each catch information is transmitted to the devices on board and when the trawl is full it is automatically hauled in. When the trawl has been emptied the electronic brain will determine if it is appropriate to shoot again.

In the fish handling also there will be no particular need for working by hand. Automatic machines will attend to sorting, cleaning and production of fishmeal and

fat. They will also freeze and pack the products. The manual work will consist of adjusting the devices and conducting checks. This will be carried out by highly qualified experts.

The power plant on board trawlers will also undergo re-design. It will supply electric power to a whole range of machines. An A.C. Diesel-electric installation will make it possible to alter the propeller r.p.m. without requiring to alter the r.p.m. of the engine.

New factory ships may be built which can take the catch from the trawlers. The trawlers themselves will not require to go to the factory ship. Special towing vessels will transfer the trawl to the factory ship, where the fish will be graded and passed through the production lines. One conveyor belt will lead to the filleting plant, a second to salting and a third will take the waste products to the fish meal plant.

The designers have already calculated how much such a trawler will cost. It will cost 30 per cent more than a conventional vessel of the same size, but this will be richly repaid. The deep hull, the vessel's seaworthiness and many other factors will make it possible to continue fishing even under storm conditions.

Submarine

Other types of ship at present being studied in Russia, include an automatic submarine which at the same time is a fishing device. A team of Soviet researchers are working now on the design of such a vessel.

Factory ships will also be further developed. New types will be of 6,000-7,000 tons deadweight, and will have active rudders to increase manoeuvrability. This will be accomplished by fitting a special propeller on the rudder. This can then turn the trawler even if the main engine is not working and the ship is drifting. In such a case the active rudder will if necessary give the trawler a speed of 3-4 knots.

(World Fishing London May, 1962)

Norwegian - Soviet Limit Pact

Officials of the Soviet Union and Norway have signed a fisheries agreement based on the principle of reciprocity. Negotiations on the new pact were conducted in

Moscow.

The pact will give Soviet fishermen the right to operate between 6 and 12 nautical miles off the Norwegian coast until October 31, 1970. Similar privileges were extended to British fishermen under the British-Norwegian pact of November 17, 1960.

In return Norwegian fishermen will enjoy special rights to operate in certain waters within the Soviet 12-mile limit, including the Nordfargrunden fishing bank in the Varanger bay area, and the Henöy banks off Cape Niemetski. Both were important fishing grounds for Norwegians until the Soviet Union extended the limit of its territorial waters shortly after World War II.

(World Fishing London May, 1962)

When it "Rains" Fish

During the last century, Major Forbes Mackenzie, when walking on his farm at Ross-shire, found the greater part of one of his fields covered in herring fry 3 to 4 in. long. The farm was situated three miles from the sea, and it is believed that the fish were carried through the air by a freak wind.

Similar occurrences have taken place in Britain before and since, but for the regular falling of fish from the heavens, one has to go to St. Lawrence Island in the Bering Sea. Nearly every winter, fishermen put away their nets and lines, and rely upon frequent "showers of frozen fish".

The cause of these strange deluges is initially snow falling on near freezing water. The snow is so near the temperature of the water that it does not melt, but sinks to the bottom like sand.

The mass of snow accumulating on the sea bed causes the fish to rise to the surface, where they eventually become frozen in the top layer of ice. As the winter progresses and more ice forms, tremendous pressures force the ice upwards and the fish are partially embedded into it. They remain so until the strong winds begin to blow.

Gales of terrific force then lash at the ice, lifting the fish from their temporary anchorage and tossing them to the shores of the Eskimo island. This is such a

frequent occurrence that the natives wait for these fortuitous catches to come their way.

They are no mean catch either, for the fish are sculpin and tomcod, weighing anything up to 10 lb. Among the natives during the "fish raining" season there is always great rivalry to see who finds the biggest prize.

(World Fishing London May, 1962)

Facts Do Not Support Call to Kill Birds and Seals

The call "exterminate the birds and the seals" is made from time to time in many countries with substantial fishing industries. It was made last month in South Africa by a Member of Parliament, Dr A.H. Jonker, who, in a private motion asked the House of Assembly to request the Government "to consider urgent measures for the extermination of seals and at least the most voracious fish-eating seabirds".

Dr Jonker quoted a mass of figures and some rather intricately presented facts to support his argument and the House, apparently overwhelmed by this presentation, passed the Motion. But the Government does not have to act on it and our recollection of previous forays against the birds and the seals is that it will go into the dusty file containing other fanciful suggestions for increasing our fish catch.

For those who are interested and wish to join the small band of sea bird exterminators, Dr Jonker's speech to his Motion can be read in Hansard. We, however, prefer to be guided by the fishery scientists who are as concerned as Dr Jonker about any potential threat to the fishing industry and who do not seem to be losing much sleep over the appetites of the birds.

In our February Issue, we quoted a report on seabirds at Walvis Bay. Last year the pilchard fishery in this area had a catch over more than 378,000 tons; this year the permitted catch is 435,000. In the same area in a year birds are estimated to eat about 27,000 tons of fish.

We are sure that a survey of South African waters will show that the birds and the seals take a similar share of the billions of fish landed each year by the industry.

If we really believed that this relatively meagre appetite justified the extermination of thousands of birds,

then we would deserve the full retribution of nature for our reckless greed.

Dead Fish

If birds do not cause the mass destruction of South Africa's fish, a minute organism did have a lethal few days last month. For nearly a week the shores of the False Bay coast near Cape Town reeked with the stench of hundreds of tons of rotting fish suffocated by a dino-flagellate which the Division of Sea Fisheries found to be Gonyaulax polygramma. This is a non-toxic phytoplankton which suddenly proliferated in a highly concentrated belt. Fish caught between this belt and the coast had their gills clogged with the plankton and others are thought to have died when the oxygen level in the area of water dropped.

Mass mortality of fish due to this type of plankton or to the toxic Gymnodinium occur in many parts of the world, and, when the fish began to be washed up, the Division of Sea Fisheries quite rightly warned the public against eating them. As soon as the nature of the red tide was ascertained, the warning was raised, but it was weeks before the fish market returned to normal.

(The Shipping News South Africa April, 1962)

Detergent Foam Rises 14 Feet

In recent years numerous authorities in various countries have become alarmed at the growing use of synthetic detergents for industrial and household use. The commonly used synthetic detergents are unfortunately not broken down to any extent in the normal sewage purification processes, and remain in the effluents which leave the sewage works and find their way into the streams.

This causes unsightly foaming in the streams, upsets oxygenation capacity and hence the natural stream life, including fish life, and also interferes with the water purification processes of authorities lower down the stream.

In Europe

In Germany it is reported that layers of foam rise as high as fourteen feet in places, preventing light and air from reaching the water and thus preventing self-purification of the river; in some cases it has also prevented smaller ships and boats from using canal locks. Action is being sought through the German Parliament to

restrict the use of synthetic detergents.

In Holland it has been reported that synthetic detergents in sewage effluents and sewage sludge have a deleterious effect on the growth of plants, and prohibition of the use of certain detergents is being recommended.

In Britain a committee has been formed to investigate the matter. This committee consists of Government officials, detergent manufacturers, and sewage purification authorities. Three reports have been issued to date, and a large scale experiment is being tried with a "biologically soft" detergent - i.e., one which is broken down in sewage purification processes. Further reports are awaited.

In the United States there are a number of reports of upsets in water purification processes, and the effects of detergents are now receiving serious investigation.

In South Africa there are already reports of foaming streams, and it has been suggested by the Institute of Sewage Purification that a full investigation of the whole matter of the use of synthetic detergents has become an urgent necessity.

- "South African Municipal Magazine"

(Local Government Journal of W.A. May, 1962)

Queensland Prawn Experts go West

The Nor'West Whaling Co.Ltd., of Carnarvon, Western Australia, has started off on the right foot in its plan to exploit prawns and scallops this winter.

The firm has engaged two top Queensland skippers and linked up with Don Hopper to organise their production line and supply expert processors to manage their factory.

The firm's decision to go for prawns, in the off-season for whales, was announced in March.

Two specially designed trawlers have been built in Fremantle and will operate from Carnarvon where ice-making machinery has been installed and a processing factory established.

One of the Queensland skippers engaged is Bill Good, who sailed his own trawler from Brisbane to Carnarvon,

via Darwin (a matter of 4,000 miles), to start the job.

Marshall Partis, manager of Australian Trawlers (Don Hopper's show in Brisbane) flew to Carnarvon last month to organise the factory and start a production line.

He is expected to return to Brisbane next month when Alan Law, Don Hopper's other processor, will go to Carnarvon to run the factory for the balance of the season.

It is possible that the Hopper organisation will supply a processor to Nor'West each season.

The W.A. prawn season runs from May to October.

Nor'West's decision to approach Don Hopper was a master stroke of management and should pay the company big dividends.

Possibly no Australian is more qualified to advise on prawn fishing and processing than Capt. Don Hopper.

He has been with the industry since its infancy and knows all the pit-falls likely to be experienced by a new project entering the field.

From 1946 to 1952 Capt. Hopper owned and operated trawlers, later becoming manager of the fishermen's co-op. at Ballina (N.S.W.).

Plate Freezer Pioneer

He operated the first plate freezer brought to Australia in 1953 and perfected a method of processing prawns which has been copied in other parts of the world.

In 1956 he visited England to further his studies in quick freezing and subsequently, in 1957, opened his own processing factory in Brisbane.

His firm, Australian Trawlers Pty. Ltd., sold its own wholesale and distribution subsidiary organisation recently to New Zealand Fish Distributors in Brisbane.

Australian Trawlers now is strictly a processing firm and distributes its products interstate through Sanford Limited, Wm. Angliss, Felan's Fisheries and Wu Hop - all well-known in the Sydney trade.

(Fish Trades Review Sydney May, 1962)

Suspended Animation

Question: I plan to use fish in an experiment involving suspended animation by cooling, the state in which an animal can be frozen alive and then thawed and brought back to normal. Have you any information concerning this process? A.R., North Miami, Fla.

Answer: It is known that some organisms are able to survive temperatures below freezing. However, several factors may help produce damage to the cells of living creatures at low temperatures. Slow cooling through the freezing range forms large ice crystals which may rupture the animal's cell walls. Also, the formation of ice increases the ionic concentration of extracellular and intracellular fluids.

If the rate of cooling through the freezing range is very rapid - approximately 100°C. per second - ice crystals are not formed and the organism is solidified without the formation of crystals. For instance, slightly dehydrated roundworms placed in liquid air (-197°C.) are solidified and can then be revived through rapid warming by immersion in water or mercury at 30°C.

Fish are limited in their tolerance to freezing. Even Arctic fish, which may endure superficial freezing, cannot survive total freezing. Therefore, if you intend to use fish for your experiment it would be best for you first to acclimate them to low temperatures by gradually lowering the water temperature at a rate of not more than 1/20°C. per hour. Once they are close to the freezing range the temperature should be lowered at a fast rate, around 100°C. per second.

(Sea Secrets Miami, Fla. April, 1962)

U.S. Launches World's Largest Tag Programme

The largest single salmon tagging programme ever undertaken has been launched in Washington and Oregon by the U.S. Bureau of Commercial Fisheries.

Nicknamed "Operation Fin Clip", the project will result in the marking of at least 32,000,000 Fall Chinook (Spring) salmon in the Columbia river and its tributaries during the next four years.

The entire programme - including the recovery phase, will cover a 10-year period.

The actual marking of the young fish, by clipping a fin, will be done by personnel of the respective state and federal hatcheries, but the federal government will pay for it. Total cost of the programme, including the recovery phase, will be about $1,000,000.

(Western Fisheries Vancouver April, 1962)