



CALM LIBRARY ARCHIVE
NOT FOR LOAN

(1) Jan 1953

DEPARTMENT OF PARKS AND WILDLIFE

Vol. II, No. 1

January 1, 1953

STAFF NOTES

Officers at present on annual leave are Messrs. E. J. Brownfield, Clerk-in-Charge, and H. C. W. Piesse (p.v. "Lancelin"), Inspector Connell (p.v. "Silver Gull"), Assistant Inspector G. Coombes and Cadet Inspector N. E. McLaughlan.

Mr. M. Goodlad, Pearling Inspector, Broome, is at present an inmate of St. John of God Hospital, Subiaco. His disability is a result of a motor accident sustained while on duty about 5 years ago. Mr. J. E. Munro, Metropolitan Inspector, is relieving at Broome.

Mr. J. Traynor, Fauna Warden, who was taken ill on the second day of the Inspectors' conference, has now resumed light duty. It is hoped that soon he will be restored to complete health.

Messrs. A. J. Fraser, Superintendent, B. R. Saville, Senior Clerk, G. C. Jeffery, Inspector, Albany, and Miss P. A. Davidson, of Head Office have resumed duty after annual leave.

Mr. V. J. Sinclair has been appointed temporary Assistant Inspector in lieu of Mr. Otto Hello, resigned.

Three of our younger officers, Mr. Ian Bartholomew, of Head Office, and Cadet Inspectors B. A. Carmichael and M. J. Simpson, have received their call-up notices for National Service training. Messrs. Bartholomew and Simpson will serve with the Navy for four months and Mr. Carmichael with the Army for three months.

C.S.I.R.O. PERSONNEL

Mr. J. M. Thomson, Research Officer, C.S.I.R.O. Division of Fisheries, Dunwich, Queensland, is at present visiting Western Australia to prosecute mullet and oyster research. Mr. Thomson, who is a graduate of the University of W.A., will visit Shark Bay and Albany while in this State. In April he will leave Australia for overseas to further his studies on fishery biology.

Mr. W. B. Malcolm, Research Officer, C.S.I. R.O. Fisheries Division, returned to Perth on December 31 following several months' absence in the eastern States and Tasmania. Mr. Malcolm's duties include the study of the Australian salmon (Arripis trutta) and Ruff (A. georgianus). He will remain in this State for approximately twelve months.

Mr. K. Godfrey, Technical Officer, C.S.I.R.O. Division of Fisheries, is at present working on m.v. "Suda Bay" in the Busselton region carrying out investigations in relation to the occurrence of crayfish in that area. "Suda Bay" is at present under charter to C.S.I.R.O. Russell Pty. Ltd., Crayfish tail exporters, of Perth, have made a contribution towards the cost of chartering.

ANNUAL INSPECTORS' CONFERENCE

The tenth annual conference was opened by the Minister for Fisheries (Hon. A. V. R. Abbott, M.L.A.) on the morning of December 8 and concluded on the afternoon of December 12.

The conference was a most successful one, and all present returned to their respective headquarters feeling that they had learned something really worthwhile. A verbatim report of the proceedings will be issued in due course.

Guest speakers included Professor H. Waring, of the University of W.A.; Dr. D. L. Serventy, Senior Research Officer, C.S.I.R.O. Wildlife Survey Section; Messrs. Keith Sheard and R. G. Chittleborough, Research Officers, C.S.I.R.O. Division of Fisheries; Mr. R. D. Wilson, Solicitor, Crown Law Department; and Mr. A. R. Kelly, President, Pemberton-Warren Trout Acclimatisation Society. The Department's sincere thanks are extended

to these gentlemen for giving up their time to address the conference.

One of the highlights of the conference was the screening of a number of films dealing with fishing and whaling. Three British underwater films, "Trawls in Action", "Underwater Vision" and "Report from the Sea Bed", kindly made available by Scott Henderson Pty. Ltd., of Sydney, through their Perth agents, Amson Agencies Pty. Ltd. were also shown. These films, particularly the first-named, were of very considerable interest and value, showing as they did the actual working of an otter-trawl net while on the sea-bottom. They were greatly appreciated.

Other films shown were "Antarctic Whale Hunt", "Shell Fishing", "Purse Seining" and "Hunting the Humpback". The last-named was a W.A. Government Tourist Bureau production depicting whaling from the Australian Whaling Commission's station at Carnarvon, W.A. These four films were from the library of the Visual Education Officer of the Department of Education (Mr. Norman Uren), whose theatre was used for the screening. The Department's thanks are extended to Mr. Uren and the members of his projection staff.

There were two social events associated with the conference; the cricket match on the Wednesday and the al fresco party at the home of Mr. and Mrs. L. G. Smith at Como on the Friday night. The cricket match was held at Belmont between teams representing the city and the country, captained by B. R. Saville and H. J. Murray respectively. Saville won the toss and elected to bat - city batted 12 men and country 13. In view of the extreme heat - the shade temperature exceeded 100° - only one innings was played by each side. The scores were as follows -

City

Bowen, B.K. retired	52
Bartholomew, I, run out	26
Munro, J.E., b. Murray	4
Coombes, G. b. M. Simpson	0
Connell, F.A., c. Jeffery, b. Murray	0
McLaughlan, N.E., b. Murray	0
Saville, B.R., b. J. Simpson	21
Wright, D., c. Baird b. Crawford	4
Sinclair, V.J., b. Crawford	0
Brownfield, E. J. not out	19
Bramley, J. E., run out	1

Barakonski, J.L., c. Gallop b. Jeffery	2
Sundries	12

TOTAL: 141

Bowling - Murray, 3/25; Crawford, 2/3; J. Simpson, 1/19;
M. Simpson, 1/16; Jeffery, 1/15; Baird 0/26; Gallop,
0/15; Thair, 0/0; Carmichael, 0/11; Piesse, 0/1.

Country

Gallop, J.L., c. Wright, b. Bowen	5
Jeffery, G.C. c. & b. Bowen	0
Baird, R.J., c. Bartholomew, b. Connell	0
Crawford, R.M., b. Bowen	3
Bowler, S.W., b. Bowen	2
Piesse, H.C.W., b. Bowen	5
Murray, H.J., b. Connell	5
Simpson, J.S., b. Munro	22
Simpson, M.J., b. Munro	4
Melson, A.K., b. Bramley	3
Carmichael, E.A., c. Wright, b. Saville	5
Thair, J.T., b. Saville	0
Oliver, L.C. not out	6
Sundries	7

TOTAL: 67

Bowling - Bowen, 5/9; Connell, 2/14; Saville, 2/9;
Munro, 2/7; Bramley, 1/0; Coombes, 0/18; Brownfield,
0/6; McLaughlan, 0/3; Wright, 0/1.

Altogether the social side of the conference, which gave city and country an opportunity of getting together again in a different atmosphere from the official, was greatly appreciated. The action of Mr. and Mrs. L. G. Smith in again making their home available for the wind-up party, at which the wives and friends of the staff were also present, was very greatly appreciated.

FAUNA PROTECTION ACT REGULATIONS

The following amendments to the Fauna Protection Act regulations will be gazetted this month:-

(1) Any person taking the red kangaroo, euro and sand wallaby for any purpose whatsoever will not be required to hold any form of license.

(2) Red kangaroo skins will be exempted from payment of royalty.

(3) Any person taking grey kangaroos for any purpose whatsoever outside the boundaries of the South-West Land Division will not be required to hold any form of license.

(4) All grey kangaroo skins, irrespective of where the kangaroos are taken, will continue to be charged with payment of royalty.

Extracts from the Government Gazette will be forwarded to all officers in due course.

TRAVELLING ALLOWANCES AND TRAVELLING TIME

The following circular received from the Public Service Commissioner is referred for the information of the staff -

"1. Following representations by the Civil Service Association of Western Australia (Incorporated) as to the alleged delay in the payment to officers of travelling allowances, I have given an assurance that every effort will be made so that officers' accounts, provided such be in order, will be paid without delay. I shall be glad of your co-operation to ensure that accounts of this nature are paid within a reasonable period and this, I consider, should be within the expiration of fourteen days.

2. The Association has also made representations concerning clause 9 of the Consolidated Allowances Agreement. The Association, in effect, requested that the word "may" appearing in line 3 be substituted by the word "shall". As you are aware, there are many positions which involve officers in fairly consistent travelling outside "normal working hours" and officers when applying for such positions are, or should be, fully aware of that fact. To make it mandatory for time off to be granted when travelling outside normal office hours would be impossible and not consistent

with the work these officers are called upon to perform.

Clause 9 of the Agreement provides that officers who, in the course of their duties, are called upon to travel after the usual time for ceasing duty may, at the discretion of the Commissioner, be granted time off in respect of such time or part of such time spent in travelling.

It will be noted that the clause requires that matters of this nature be referred to me. The Association has been advised that as a general rule I am not favourable to granting time off in the case of officers whose ordinary duties involve travelling outside normal office hours. Only in those cases where an officer is not usually called upon to travel will I be willing to grant time off in lieu."

SEA-GOING ALLOWANCES

Following the recent increase in the rate of travelling expense reimbursement, the Public Service Commissioner has now approved that sea-going subsistence allowances to officers stationed on departmental launches will be as follows -

For married officers	-	10/-	per diem	
" single	"	5/-	"	"

SALE OF CRAYBOATS

Mr. J. F. Silva, who recently arrived in Western Australia with the m.v. "North Cape", since refitted as a freezer-boat, has purchased from Mr. N. G. Pilatis, of Geraldton, the crayboats "Saga" (48') and "Crazy Mac" (32') to be used as catcher boats in association with "North Cape".

LOSS OF FISHING BOAT

On November 20, Mr. William Newbould, owner-skipper of l.f.b. "Double O" (G.99), which was

hove to about 5 miles west of Point Moore, Geraldton, had the misfortune to sustain severe petrol burns when a wave hit the boat and capsized it, at the same time causing petrol to explode. The "Double O" sank almost immediately, but Mr. Newbould was able to reach shore, assisted by wreckage and his life jacket, some four hours later, when he was admitted to hospital suffering from exhaustion and burns.

"Double O" was an auxiliary 18 feet in length with a beam of 7 ft. 8 in., powered with a 10 h.p. petrol engine. The value, £400, was covered by insurance.

During the first year of its existence, Mr. Newbould was Chairman of the Geraldton Fishermen's Co-op. Society Ltd., and was most intimately associated with its establishment.

A DIFFERENT JOB

"Variety is the Spice of Life"

Normally the Department is concerned with the development and conservation of our fishery resources, and much of its work is humdrum, but from time to time we receive requests which involve us in tasks which are quite different from our usual job, but which because they are different we are very happy to perform.

One of such tasks was to secure a number of black swans which the Government of W.A. presented to the Rt. Hon. Winston Churchill, MP. These were obtained by one of our inspectors in the Bunbury district, and reached the old country in excellent condition.

Another followed a request by Sir Frank Colyer, Curator of the Odontological Section of the Museum of the Royal College of Surgeons, London, who was anxious to make up deficiencies in his section of the Museum, which suffered much damage during the air blitz of the last war. What Sir Frank wanted from us was a series of dugong skulls, immature and mature, and so far, despite the fact that there is no organised dugong fishery in W.A., we have been able to secure three, one from Mr. Clauert, of the Perth Museum, and two from Shark Bay through Inspector Baird's good offices.

FORMATION OF ANGLING CLUB

It may be of interest to the staff to learn that a new club, known as the Geraldton Angling Club, has been formed by local enthusiasts. There are about forty foundation members. The President is Mr. R. Wilks and Hon. Secretary Mr. R. Reynolds. Inspector S. W. Bowler is a committee-member.

The Department views the formation of angling clubs with considerable favour. Every encouragement will be given to the staff to carry out educational activities by giving addresses and lectures. If desired the Department will endeavour to arrange for C.S.I.R.O. Fisheries personnel and others to give occasional talks to members of such clubs on some interesting topics.

DOES THIS APPLY TO ANY OF OUR STAFF?

The sentiment contained in the following item, the source of which is not known, is perhaps worth remembering -

"For the attention of all aspiring Isaak Waltons (with spear-guns or otherwise): There are two reasons for the proverbial persistence of anglers: The first is that the fish are biting. The second is that the fish are not biting. Which also reminds us that fishing anecdotes are an excellent guide to character. You're sure a man's a really convincing liar if he can keep both hands in his pockets while describing the fish that got away."

STAFF PHOTOGRAPHS

The Government Printer advises that prints of the photograph taken on the opening day of the conference, are available at the following prices -

Contacts (i.e., same size as proof shown to staff)	1/3d. ea.
1/2-plate enlargements	3/6d. ea.

If any officer desires copies, he should send his order to Head Office immediately accompanied by the appropriate amount.

THE CLEARING HOUSE

Fish Resources of the South Pacific

Member-Governments of the South Pacific Commission are unanimously in favour of vigorous action to develop the resources of these waters. Practical plans for this purpose have been proposed

by Eric Ford

Among the matters which were to be considered at the tenth session of the South Pacific Regional Commission at Noumea, New Caledonia, in October, was a series of recommendations from a special Fisheries Conference held under Commission auspices earlier this year. Experts on various aspects of the problem attended from the six member-States of the Commission - Australia, France, Netherlands, New Zealand, United Kingdom and United States.

That the development of Pacific fisheries resources is vitally important to the 3,000,000 inhabitants of the Commission's territory has been well stressed by the Secretary-General, Sir Brian Freeston. "Not only on dozens of coral islands," he says, "but even in some of the larger islands, it is indisputable that the rapidly-growing population will be in grave danger of hunger within one or two generations unless means of increasing the supply of food can be found. The resources of the land are limited, both in area and fertility; there remains the sea."

Increased consumption of fish, with its high protein content, is a matter of particular importance to Pacific peoples, because land animal protein is not a regular item of diet among them, and fish appears to offer the cheapest and most easily accessible source of protein. This point, indeed, formed the subject of one of the Conference's recommendations, which seeks to institute studies into dietary deficiencies in the region, with special reference to the protein factor and the part to be played by fish consumption.

At the moment, the main areas of fisheries exploitation are to be found on and around the coral reefs which form such a feature of the area. Many of these sources are in danger of over-exploitation - a fate which has already overtaken coral reefs situated near large population centres. On the other hand, very

little development has occurred in the mangrove and estuarine areas of New Guinea and New Caledonia. Here lie the greatest possibilities for pond culture, under which, by intensive methods, as much as 6,500 lb. of fish per acre may be produced annually. In addition, there are opportunities for fish-breeding in fresh-water lakes found on some of the high islands, and most extensively in New Guinea.

But it is in the vast, virtually untapped and largely unprospected oceanic areas that the most extensive potentialities lie. Such commercial investigations as have been made in the past suggest that, while some areas are naturally more richly endowed than others (particularly north of New Guinea, south of the Caroline Islands and off Hawaii) fish exist in some quantities throughout the area. Most common deep-sea fish are the tunas, but other commercial species exist, particularly flying fish, half-beaks and mackerels.

Native attempts to garner the harvest of the surrounding seas are of a subsistence character almost throughout the entire region, except that a certain amount of fishing for marketing occurs in some urbanised areas. With certain exceptions, traditional indigenous methods are still largely used. For example, native canoes are widely employed, although the few powered craft in use have demonstrated their advantages. Though accurate figures are not available, it is clear that there is a general tendency to drift away from fishing.

To this and other problems the Fisheries Conference directed its attention. Since plans can be made only on the basis of accurate and up-to-date information, a primary requisite is a fact-finding service. Statistics of fish caught are notoriously difficult to obtain where the major proportion of the catch is consumed by the fishermen themselves. However, it is proposed to make a rough and ready approximation by undertaking periodic surveys of fish landings at selected points, and by ascertaining the number of fishermen, boats and gear.

The Commission has recommended that each administration should, where necessary, establish a Fisheries Service, whose powers might include the improvement of existing local fishing methods, the introduction of new non-indigenous methods, and the provision of better facilities for handling, processing,

distribution, marketing and the utilisation of by-products and waste.

To provide co-ordination as between these Fisheries Services, it is further proposed to appoint a fisheries specialist who, though operating directly under the Commission, would be at the service of the member-Governments, for whom he would act as a clearing-centre for information. He would be responsible, it is suggested, for the compilation of statistics, for co-ordinating fisheries development projects throughout the area, and for advising Governments on fisheries programmes.

The Commission, in planning its fisheries programme, is anxious to use the facilities offered by outside bodies, notably the courses in technical instruction available through the F.A.O. Extended Programme of Technical Assistance. Later, it may be possible to invite F.A.O.'s assistance in organising more specialised courses in fisheries administration for locally recruited officers. In the meantime, the way could be prepared for this special course by the provision of lecture facilities at the Australian School of Pacific Administration.

(New Commonwealth, London, November 10
1952)

Fish and Fruit Canning in South Africa

The swiftly expanding fish-canning industry of South Africa still lags behind the world demand for its products. It is probable that in the next 15 months seven new fish-canning plants will come into operation, while the South-West African Administration has indicated its willingness to license another two plants. In 1950-51 the pack was 38 million lb., the estimate for 1951-52 is 48 m. and for 1952-53 not less than 72 m. lb. of fish other than rock lobster.

The output of fishmeal is nearly three times greater than the local demand, so that the industry is becoming an increasingly important economic factor in South Africa's trade.

The share capital employed by the industry is about £9m., and dollar-earning shipments in the past season totalled £2,625,000, including £900,000 for frozen rock lobster, £600,000 for canned rock

lobster and £1,125,000 for fish meal. The estimated value for the coming season is £3,275,000.

To safeguard against over-fishing, a two-months closed season operates for pilchard catching, and a moratorium is in force in regard to the establishment of new processing plants.

Whale Oil for Britain

The South African whaling expeditions for the coming season in the Antarctic have already sold their catch to the British Government at between £70 and £80 per ton of whale oil, irrespective of the size of the haul. The price has been above £100 a ton since the end of World War II, and soon after the outbreak of the Korean war soared to £172 a ton.

There will be three expeditions fewer in the ice this year, but the ships participating will have no difficulty in catching the quota of 16,000 blue whale units. New and better catchers will ensure a fast turnover, but the new price is near the safety margin for the big visiting expeditions.

(New Commonwealth, London, November 24, 195

Fisheries News of the World

The United Nations through the Food and Agriculture Organizations of the United Nations: under the Colombo Plan, and UNRRA have for years been engaged in bending every effort to have all countries of the world exchange their fishery problems and solutions, also, aid in rehabilitating depleted or backward fishery operations, or establish such where none existed before, in order that less favored nations may have sea food proteins to feed their people.

Just how the countries of the world are progressing with their fishery operations is not without points of interest.

Canada

The Canadian fishing industry continues to make progress in increasing its efficiency and is endeavoring to reduce its dependence on markets that

now offer difficult access owing to the inability of latterday importing countries to purchase our sea food surplus. The main effort so far has been the endeavor to increase the national per capita consumption of sea foods by all the regular avenues of advertising.

Improvements have been made in catching, processing and marketing the catch. In this, Government departments and stations of the Fisheries Research Board of Canada have contributed much technical, economic and market information and have endeavored to stimulate public interest in both the fishing industry and the products it has to offer the consumer.

In Canadian fishery waters fishery conservation and fishery management is rigidly administered.

United States

The U.S.A. fisheries employ about 170,000 fishermen, manning over 10,500 vessels of 5-tons and over, and about 48,000 motor boats and 34,000 other craft, with an additional 1,500 transporting craft, all working in the fisheries of the United States and Alaska.

The trend is toward greater mechanization of gear and processing equipment.

In sea food marketing the trend is toward frozen consumer-size colorfully illustrated packages of fish to accelerate sales, as well as for price-marked, cellophane-wrapped fresh fish in self-service counters.

The United States Government, through the Fish and Wildlife Service fishery technologists has contributed much to commercial fishery progress in the U.S.A., Canadian and foreign fishermen to whom such data has been made available.

Hawaii

More than half of the fishery value catch is represented by tuna, most of which is canned. Research in fisheries receives active support from territorial and federal agencies. The above mentioned U.S. department has carried on major studies in biology

and oceanography to lead the way towards a better understanding of the available fisheries resources of the Pacific Ocean.

Puerto Rico

Increase in fishery production here is attributed in part, to the activities of two modern fishing clippers fishing for grouper in the waters off the Bahamas, Cuba, Ecuador and Gulf of Mexico. Native vessels have also increased production by inshore fishery. About 2,700 fishermen are engaged.

British Caribbean Territories

Experts have examined the potentialities of the waters readily accessible to the British Caribbean territories for increased fish production and the inshore and sea fishery is definitely limited. A promising fish drying and salting industry has been established in Canouan, one of the small islands in the St. Vincent Grenadines group.

Austria

A considerable increase in production of marketable and stocking fishes has been achieved in fish culture stations. This nation produces fresh water fish species.

Belgium

Herring fishery has its ups and downs. A second fish freezing plant is established in Zeebrugge, serving both fresh fish markets and the processing industries with the aid of the plant in Ostend. The freezing plants contribute to price stabilization which is a great advantage in the processing industries. Unfortunately, these plants are only parts of the whole cold chain which is necessary to give perfect service to the processing industry and to retailers. A good retail organization might increase the consumption of good fish considerably.

France

War construction of the French trawler fleet is complete but the problem of replacing old units is still present. Greater efficiency is required in new trawlers. High cost of fuel for steam trawlers forced

engine replacement by diesel motors. The wooden fleet also needed replacement. The fish trade fish consumption increase programme has been hampered by lack of funds. It was decided that the Committee would be granted an annual contribution of 10 million francs from the state, while the Central Fisheries Committee, consisting of snipowners, fishermen, wholesalers, fish curers and fish canners, would match the amount.

Greece

Greece fisheries programme has been further developed with improvements noted in the construction of fishing boats, in installing and equipping engines with all modern equipment. Medium and long-term loans were made available to fishermen, which stimulated fisheries production.

The improvement of trawlers also gave good results. Trawlers were equipped with sounding and refrigeration equipment through former ECA funds. Funds were also made available to fishermen for building new boats fishing with ring nets. Improved species of oysters, imported from France, have been introduced in suitable locations of the Greek seas. ECA funds have been made available for the establishment of new fish processing industries and for improving existing ones.

Ireland

The Government's policy continues to be directed toward the improvement of the catching power of the fishermen. The Irish Sea Fisheries Assoc. Ltd. (an officially sponsored society of fishermen) now has three boat-building yards to supply its members with boats and gear on hire purchase terms.

The Netherlands

Old and small ships have been eliminated from the trawler fleet, to be replaced by more modern vessels. Prospects for fresh water fishery are not bright.

Norway

Both first and second priority mortgage loans granted for fishing craft by the State Fisheries

Bank have increased greatly. The tight manpower situation in the fishing industry has gradually eased. This was largely due to the surplus of manpower in northern Norway owing to diminishing investments in fish processing plants and other building and construction projects. Efforts continue to assist fishermen who desire to move away from distant fishing settlements.

Plans have been made for the introduction of a daily money allowance during illness to fishermen under the health insurance scheme.

Sweden

The Swedish salt water fisheries, as with all other producing nations has not been without certain marketing difficulties. On the Swedish west coast, where fishing was most intensive, the landowners' former monopoly of fishing has been almost abolished, and coastal fishing rights are now in line with that of other Western European countries.

United Kingdom

The white fish industry has been suffering from price slump, with trawlers laid up with price spreads to the consumer raising sales resistance. Government subsidy has been tried with not too much success. Schemes have been contemplated to provide for measures to prevent over-production of fish from distant waters, and to improve distribution. Herring fishery has faced marketing problems.

(Western Fisheries, Vancouver, B.C., October, 195

Fishing-Boat Design

By Jan-Olof Traung, Fisheries Division,
Food and Agriculture Organisation, UNO

The fishing-boat is generally the most important piece of equipment in the fishing industry. Boats are necessary to harvest the waters, and the financial success of the industry often depends on their being designed to perform as economically as possible. If they are planned wrongly, great difficulty and expense are involved in rebuilding them. Mistakes in shape are practically impossible to correct.

Different fishing methods, locations, availability of material, and developments have evolved fishing-boats of entirely different types and sizes. It would be futile to look for the "world's best fishing-boat": boats can be good or bad for a specific place or purpose but never good for all localities and all conditions. Nevertheless, boats can often be greatly improved by the incorporation of ideas from fishing-craft of other countries. The development of design is an ever-continuing process.

Fishing-boats, like yachts and tugboats, are really ships; hence they are not exempt from the rules of naval architecture. Though they are of many different types and arrangements, they all have many aspects in common. They must be seaworthy, seakindly, safe, and capable of attaining good speed. The price, and the operating and maintenance expenses, must be as low as possible. These qualities, to a considerable extent, are connected with the shape of the hull. Hence, the results obtained with one type may be useful in planning other types.

Hard Work - and an Open Mind

It is easy to build a boat which floats and which can make relatively good speed. Such a boat can be built without much experience, engineering knowledge, or planning; but to build boats which will operate economically requires study, hard work, and an open mind.

Boats of different sizes and types have different relative proportions. If a good design has been developed for a boat, it often happens that such a design is lengthened simply by putting some more frames amidships. This is often undesirable, for it is not at all certain that the original good qualities will be retained after the change. The boat is likely to be too narrow, and a parallel middle body is not suitable for fishing-boats.

On the other hand, if the lines are scaled up proportionally, it will perhaps result in a boat which is too beamy. Similarly, a boat of a well-balanced and good design may be offset by the introduction of a different type of engine, heavier scantlings or auxiliaries, bigger deck-house, etc. Any such alterations usually require reconsideration

of the hull shape, a factor all too often forgotten.

Seaworthy and Seakindly

One of the most important requirements in boat design is that the weight of the boat should correspond to the designed displacement or calculated weight. Another is that the boat should float parallel to the designed water-line. If the actual weight of the boat is lower than calculated, the mistake can be corrected by adding ballast, but this means that a heavier body than necessary has to be ploughed through the water, which adds to the running cost.

A more common and worse mistake occurs when fishing-boats weigh more than has been calculated; this often means that they cannot carry the expected load. Determination of the correct hull weight requires computation of the weight and centre of gravity of every single part of the boat.

Seaworthiness means mainly that the boat has sufficient stability to weather a storm, that it has strong construction, dependable machinery, and healthy crew-quarters.

Seakindliness means agreeable motions in different kinds of seaways, which permit fishing and high speed in bad weather, with as little strain as possible on the crew and on the structural members of the boat.

It is clear that fishing-boats must be as seaworthy and as seakindly as possible. However, a vessel can be seaworthy and still pitch and buck so that only a cowboy can stay aboard her. This necessitates study of the question of stability.

Stability is the capacity of a ship to return to the original position when inclined away from it. High stability is obtained by a low centre of gravity - e.g., much ballast in the bottom, low and light-weight superstructures, etc., and a broad beam. Low stability is due to a high centre of gravity and a narrow beam. The degree of stability determines the boat's period of roll; high stability gives a short period of roll, low stability a long period.

The period of roll is about the same for all angles of roll and all weather conditions. The period of roll can be checked in calm water at the wharf, for the boat will have about the same period of roll there as at sea. A rapidly-rolling boat is "unsteady", "unstable", and uncomfortable for the crew. A slowly-rolling boat makes bigger amplitudes, but the angular speed is likely to be less and the boat is steadier. Thus, paradoxically, the boat with less stability is more agreeable and seakindlier.

Synchronized Rolling

If the period of roll and the period of the waves are about the same, the result will be synchronized rolling, resulting in rolls of wide amplitude. Therefore, care should be taken to place a limit of the period of roll of the boat. If, for example, a boat has a stability which gives it a rolling period of 6 seconds, synchronism occurs in waves of about 6 seconds period. In open sea this may correspond to 12-ft. high waves. The stability may well be sufficient to meet synchronism under such conditions.

If the boat has a rolling period of 8 seconds the synchronism occurs at 24 knots wind velocity and 18-ft. high waves. In this case, the boat's stability is less than in the former case and may be too little to meet the synchronism in these bigger waves. The length and height of the waves and the relation between wave-period and wind velocity vary in open and coastal water, depending upon the length of time the wind has blown and other factors.

It has been suggested that an agreeable period of roll over and back is equal to as many seconds as the boat is broad in meters. The stability is then sufficient and the boat's movements are at the same time agreeable. If, for instance, the period is longer than that prescribed by the above rule the boat feels unsafe and the stability may be too low. In such cases a careful stability calculation is recommended so that corrective measures may be taken.

The feeling among many fishing-boat operators that boats with high stability, much ballast, and a

broad beam are the most stable is understandable. Nevertheless it is incorrect, as closer study of the problems involved has shown.

Many other factors influence seakindliness. The problems are by no means solved, even for bigger vessels. For instance, there are many problems related to the application of dampening devices, the body shape above the waterline, the minimum freeboard and type of sheer, and those connected with coupled motions. The shape of a boat has an important effect upon its seakindliness, but the arrangement and distribution of weights also have an influence. It is felt that fishing-boats with the main weights (such as engines and deck-houses) aft are seakindlier ships than those carrying these weights forward.

Speed is very important in fishing-boats. Sometimes it is felt that fishing-boats have larger engines than necessary and that these engines take up valuable space, weigh down the hull, and increase the fuel consumption more than they contribute to a higher speed. But it is not only the size of the engine which determines the boat's speed; the shape of the hull is also important.

Complete and reliable trials take time. They must be carried out on a measured mile, and runs must be made in both directions in order to compensate for the influence of current and wind. They can be especially valuable if the fuel consumption is also measured.

Trials with the Halfish, Canadian wooden dragger, show clearly that the consumption does not increase proportionately with the speed, but at a much faster rate. At 8.5 knots the boat can travel 1.24 miles per 10 litres of fuel but at 9.36 knots, at 10 per cent. higher speeds, it can only travel 0.89 miles per 10 litres. The distance at 8.5 knots on the same fuel is about 40 per cent. longer. Fuel consumption is an indication of how many horse-power the engine develops and hence the actual engine-power can be calculated from fuel measurement. This is called the brake horse-power (BHP).

Careful trial tests are highly recommended for all kinds of fishing-boats because they indicate to designers, builders and owners the maximum output

of the engine, whether alteration of the hull shape has been good or bad, and whether the propeller is suitable. The power curve from the test can indicate to the operator the boat's most economical sailing speed and, if posted in the steering-house, it can be a daily reminder to the skipper.

(Fish Industry, London, October, 1952)

"Africana II" Uses Plastic Envelopes to Study Surface Drift of West Coast Currents

To find out more about the complex surface movements of the Benguella Current one of the most modern fishery research ships in the world is now trying the old floating-bottle method, but with a difference. Instead of dropping cumbersome bottles into the water, the scientists on the "Africana II" are using five-inch square transparent envelopes .005 in. thick.

Each envelope contains a buff-coloured card giving the date and the position where it was dropped. It is addressed to the Director of Fisheries and travels O.H.M.S. All the finder has to do is fill in the position where it was found, put in his name and address and then post it.

The envelopes are another part of the very involved research programme into the pilchard fishery on the Cape west coast. The scientific instruments aboard the "Africana II" are discovering a good deal about the hydrological conditions off the pilchard coast, but the researchists are hoping that, with the co-operation of people on the coast who find the envelopes and post them, the new scheme will fill in some valuable details.

Made of very tough polyethylene plastic, supplied to the Division of Fisheries in rolls by a South African manufacturer, the envelopes are cut to size and heat sealed in the Division's laboratories at Sea Point. After floating in salt water at the laboratories for some six months a few prototype envelopes are still in perfect condition with the cards inside untouched by water.

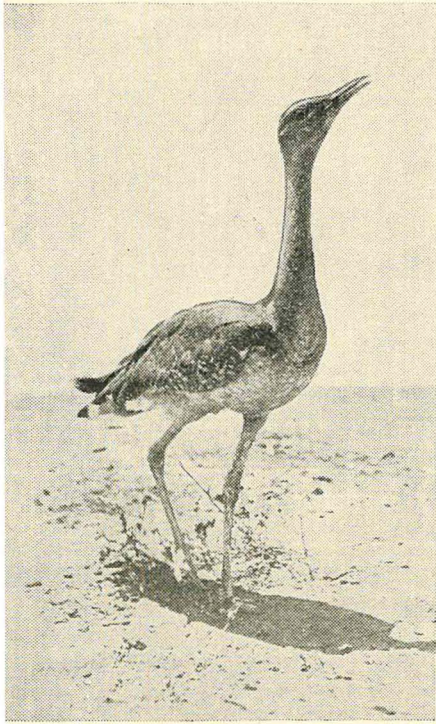
According to Dr. J. M. Marchand, Director of Fisheries, they have many advantages over the old

bottle method; the most important is that, being flat, they will not be much affected by winds and will move only with the drift of the surface waters.

Every month the "Africana II" does two routine beats, one north and one south, within a 100 mile belt along the 300 mile stretch of coastline between the Orange River mouth and Table Bay. Starting this month, she will drop 10,000 envelopes at the rate of 540 a month - ten at each of the 54 routine stations.

In an interview with the "South African Shipping News", Dr. Marchand said that it had been found that the eggs and larvae of the pilchard floated on the surface of the sea and were therefore directly affected by surface currents. The envelopes were a simulation of these eggs and larvae and would approximate their drift with the currents.

(The South African Shipping News and Fishing Industry Review, Cape Town, November, 1952).



The
AUSTRALIAN BUSTARD
or
WILD TURKEY

Great concern is felt at the situation of the Bustard or Wild Turkey in Western Australia. This economically valuable bird has been fully protected throughout the State since 1935, and its destruction by any means renders offenders liable to heavy penalties.

THE BUSTARD OR WILD TURKEY
(*Eupodotis australis*)
(Photo courtesy Mr. L. Vecchia)

Nevertheless recent surveys disclose that its numbers have been reduced to a very low level indeed in the southern and eastern areas, and only in the Kimberleys and parts of the north-west pastoral country is it still reasonably plentiful. Not only the Fisheries Department, which administers the Fauna Protection Act, 1950, but also the Agriculture Protection Board, which administers the vermin control laws, are perturbed at the dwindling turkey population, as it is regarded as a most important factor in controlling the grasshopper pest. Though the bird feeds largely on vegetable matter, such as berries and seeds, insects like grasshoppers and beetles form an important part of its diet.

The Fisheries Department is inclined to believe that most of the illegal shooting is carried on by people travelling through the country, and not by local farmers who are generally keenly appreciative of the bird's good qualities.

The Department has decided that a determined effort will be made to stop illegal shooting and to apprehend offenders, but owing to the large area which will need to be patrolled, the co-operation of the general public will be necessary. An appeal is therefore made to all country dwellers and bird-lovers generally to take on themselves the responsibility for spreading the concept of protection for the Turkey and for discouraging any tendency to regard it as a purely game bird.

Fisheries Department,
Perth, January, 1953.

A. J. FRASER,
Chief Warden of Fauna.

