

Works Department concerning Lots 44 and 45, Stirling Terrace advice has been received that a possibility exists of the whole of this being developed for Government buildings.

NEW FISHERMEN'S SECRETARY AT GERALDTON

Due to the resignation of Mr. F.J. Hackett as Secretary to the Geraldton Professional Fishermen's Association Inc., all future correspondence should be addressed to P.O. Box 68, Geraldton. Mr. W.E. Porter has been appointed secretary to replace Mr. Hackett.

TUNA TAGGING OFF ALBANY

The Division of Fisheries and Oceanography, C.S.I.R.O., has chartered the F.V. "Estelle Star", of Port Lincoln, South Australia, for a thirty-day period during May and June to catch and tag young tuna off Albany.

The research officer in charge of the "Estelle Star's" operations is Mr. J.F. Robins, who spent fourteen months in Japan in 1961/2 making a general study of tuna. The research will assist in determining the size of the stocks of southern bluefin tuna besides providing information as to their migratory habits.

A similar tagging programme was carried out by the "Estelle Star" off Albany during June, 1963.

TALKS ON WHALES

At the meeting of the Royal Society of W.A. on May 18, talks entitled "The Australian Humpback Whaling Industry" and "The Sperm Whale Project" were given by Dr. R.G. Chittleborough and Mr. J.L. Bannister respectively. Both these gentlemen are officers of the Division of Fisheries and Oceanography, C.S.I.R.O., currently engaged on whale research in this State. Because of their general interest, summaries of the talks are given below.

"The Australian Humpback Whaling Industry"

by R.G. Chittleborough

For many years the Australian Whaling industry has been based on humpback whale catches. Stocks of this whale have been declining steadily since 1949 and the taking of humpbacks is now prohibited.

Australian humpback whales fall into two distinct populations. One of these feeds in Antarctic waters and migrates to breed off the west coast of Western Australia (known as the Group IV population). The other migrates from the Antarctic to the eastern coast of Australia (known as the Group V population). The main migration is northward in June and July, and southward between August and October, and calves are born almost a year later. It is estimated that 37.2% of the adult females are pregnant at any one time, and the recruitment rate to the adult stock as a whole is 0.12. Humpback calves are approximately 14 feet in length at birth, approximately 29 feet at one year, and reach the legal minimum killing size of 35 feet at three to four years. Puberty is at four to five years.

The best method of aging humpback whales has proved to be the counting of growth layers in ear-plugs. The maximum life expectancy is about forty-six years.

The history of the modern Australian humpback industry dates from 1949. Statistics from the Group IV (west coast of Australia) population show clearly that from 1949 the average length and average age of the whales caught were dropping. The catch per unit of effort (measured as steaming hours of the chaser vessels) dropped from 0.475 whales per hour of steaming time in 1950 to 0.028 whales per hour of steaming time in 1963. Similar trends were evident in the Group V (east Australia) population, the decline being dramatic from 1959.

Dr. Chittleborough outlined the methods used to obtain the natural and fishing mortality rates, and the data obtained showed clearly the large degree of over-fishing allowed, even after a drop in quotas in 1955. The best estimates of the whole of the southern hemisphere humpback whale population during the 1930's are approximately 34,000 individuals. Originally there were 12,000 - 17,000 in the Group IV population. It is estimated that in 1949 the Group IV population contained about 10,000 individuals and the Group V some 8,500 whales. By 1963 the Group IV population was reduced to 600, including approximately 300 adults, and the Group V population to 400, including less than 200 adults.

Estimates of the present recruitment rate indicate that only 18 whales for the Group IV and 12 for the Group V populations could be taken annually without further reducing the populations. At the earlier near-peak population levels the recruitment rate estimates indicate that 390 whales from Group IV and 330 from Group V could be taken annually without

decreasing the populations. The actual 1949 quotas were 1,320 for Group IV and 850 for Group V.

Because of the severe over-fishing, the Group IV population will take from 30 to 50 years and the Group V population from 40 to 60 years to recover to near-peak population levels.

"The Sperm Whale Project"

by J.L. Bannister

Following the 1963 ban on humpback whaling the Australian industry is now based on sperm whales. Until the recent decline of humpbacks, sperm whales formed an insignificant part of the Australian whaling economy.

Charts of the activities of American whale-ships from 1761 to 1920 show that two areas off Western Australia were suitable hunting grounds for sperm whales. One area centred some 300 miles off-shore from Carnarvon was fished in summer and winter, while an area nearer the coast from Fremantle round Cape Leeuwin to Albany was fished mainly in winter.

The world's stocks of sperm whales have been little studied in the past, but investigations are now being made at an increasing rate. In contrast to the near-shore migration of humpbacks, sperm whales rarely cross on to the continental shelf. Males are found in the Antarctic but females rarely move south of latitude 40°S. The project currently being carried out by the Division of Fisheries and Oceanography, C.S.I.R.O., is designed to identify the Western Australian sperm whale stocks and assess the sustainable yield. During 1963 the total Australian sperm whale catch was 655 of which 598 whales were taken off Albany.

An important item of the current project is a programme of aerial spotting which has thus far completed 13 months of a scheduled 24 months. A chartered aircraft is used on monthly survey runs for 150 miles from the edge of the shelf from north of Carnarvon to east of Albany. The approximate area embraced by the survey is 156,000 square miles. Results from the survey are giving information on the density and distribution of whales in this area.

A further important aspect of the present project is whale marking. During 1963, 164 sperm whales were marked and it is hoped to arrange for two marking cruises in the

near future. An autumn marking programme near Port Lincoln in South Australia should give information on the general migration pattern of the westerly and south-westerly migrating whales near Albany. In addition a spring marking cruise off Geraldton and Carnarvon should help to elucidate the movements of sperms which seem to be moving south in this region in November.

Much research is needed on the general biology of sperms, particularly on the breeding-cycle and age determination. The most promising ageing method involves counting growth layers in the teeth.

A programme of blood-typing is being initiated to help identify local stocks and study their relationship with other sperm whale populations in the Indian Ocean.