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**NEW ZEALAND MARINE DEPARTMENT**

**FISHERIES TECHNICAL REPORT  
NO. 45**

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**TOHEROA SURVEY - WELLINGTON  
WEST COAST BEACHES 1969**

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**WELLINGTON, NEW ZEALAND**

**1969**

FISHERIES TECHNICAL REPORT

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SUMMARY

Toheroa occur in numbers on only 23 of the 46 miles surveyed.

The total population is estimated at 564,000 of which 544,000 (97%) are of takeable size (over 3.0 inches). In 1968 (Williamson 1969) estimates were: total population 1,270,000, takeable 1,250,000. The population present in 1969 is only 44% of that present in 1968.

Toheroa are most abundant on Hokio and North Waitarere Beaches. These two beaches (each 5 miles long) carry a total of 430,000 takeable and 16,000 undersized toheroa.

As in 1968 (Williamson 1969) toheroa on the more northern beaches are somewhat smaller than those on the southern beaches.

TOHEROA SURVEY - WELLINGTON WEST COAST BEACHES 1969INTRODUCTION

This June (1969) a survey was carried out to determine whether any changes in toheroa (Amphidesma ventricosum Gray) stocks had taken place on Wellington west coast beaches since the June 1968 survey.

Distribution, abundance and size range of the toheroa is outlined in this report.

AREA SURVEYED

The area surveyed is shown in Fig. 1.

The total beach area, 46 miles, is subdivided into eight for presentation of results.

The beaches surveyed are listed from south to north.

<u>Beach</u>	<u>Length (Miles)</u>	<u>Boundaries</u>
Te Horo	5½	Waikanae to Mangaone Stream
Otaki	4½	Waitohu Stream to Ohau River
Hokio	5	Ohau River to Hokio Stream
South Waitarere	3	Hokio Stream to Waitarere
North Waitarere	5	Waitarere to Manawatu River
Foxton	6	Manawatu River to Himitangi
Tangimoana	6	Himitangi to Rangitikei River
Moanaroa	11	Rangitikei River to Koitiata Stream

METHODS

A one foot wide trench was dug at right angles to the sea. Digging started at about mid-tide level, and continued towards the high and low tide levels until no more toheroa were present. Trenches were dug a minimum of fourteen yards, even if initial digging took no toheroa. Trenches were dug at quarter mile intervals and the intervals between trenches examined visually for signs of toheroa. Total toheroa present on each beach were calculated in proportion to the numbers in the trenches.

RESULTS

Figs 2-4 show the position of trenches dug and the number of toheroa in each trench.

Table 1 includes the estimated number of toheroa on each beach.

TABLE 1

Estimated Numbers of Toheroa on Wellington  
West Coast Beaches

<u>Beach</u>	<u>Number of Toheroa</u>			
	<u>Takeable</u>	<u>Undersized</u>	<u>Total</u>	<u>Total per Mile</u>
Te Horo	13,000	-	13,000	2,000
Otaki	30,000	3,000	33,000	7,000
Hokio	292,000	9,000	301,000	60,000
South Waitarere	18,000	1,000	19,000	6,000
North Waitarere	141,000	7,000	148,000	30,000
Foxton	41,000	-	41,000	7,000
Tangimoana	8,000	-	8,000	1,000
Moanaroa	1,000	-	1,000	-
<b>TOTAL</b>	<b>544,000</b>	<b>20,000</b>	<b>564,000</b>	<b>-</b>

Thus Hokio Beach and North Waitarere have the largest and densest populations of toheroa.

Te Horo Beach

Small numbers of toheroa occur along the beach from about a quarter mile from Waikanae River to a mile south of Mangaone Stream. (See Fig. 2).

Ten toheroa ranging from 3.1 to 4.7 inches were dug.

No toheroa were found on the coarse shingle deposits between Mangaone Stream and Waitohu Stream.

Otaki Beach

Small numbers of toheroa occur from a quarter mile north of the Waitohu Stream until about a mile south of the Ohau River (see Fig. 2). The length of the 25 toheroa dug ranged from 2.2 to 5.3 inches and are shown in Fig. 5.

Hokio Beach

Toheroa occur all along this beach except close to the Ohau River and Hokio Stream. Toheroa are most abundant at 2 and 3 miles north of the Ohau River.

The lengths of the 229 toheroa dug are plotted in Fig. 5.

South Waitarere Beach

Data from the transects (Fig. 3) and visual examination showed that toheroa occur from about  $\frac{1}{4}$  mile north to 1 mile north of Hokio Stream and from two miles north of the Hokio Stream to about a quarter mile south of Wairarawa Stream. The 15 toheroa measured ranged to 3.5-5.0 inches.

North Waitarere Beach

Toheroa occur from three quarters of a mile north of Wairarawa Stream to about a hundred yards south of the Manawatu River. (Fig. 3).

The lengths of the 112 toheroa dug are shown in Fig. 5.

Foxton Beach

Few toheroa occur on the southern  $4\frac{1}{4}$  miles of the beach but they are slightly more abundant on the northern part of the beach to about  $\frac{1}{4}$  mile from Himitangi.

Lengths of the 31 toheroa dug are shown in Fig. 5.

Tangimoana (6 miles)

Few toheroa occur on this beach (see Fig. 4). Six toheroa ranging from 3.8 to 4.3 inches were dug and measured.

Moanarua (11 miles)

Only one toheroa, 4.0 inches long, was present in 43 trenches dug (see Fig. 4).

General

The toheroa on beaches from Hokio south are slightly larger than the toheroa present on the beaches north of Hokio.

There was no evidence that a successful spatfall had occurred since the last survey. Extensive populations of burrowing polychaetes and the burrowing decapod crustacean Callianassa filholyi occurred on many of the beaches in far greater numbers than in 1968.

COMPARISON WITH PREVIOUS SURVEYS

Table 2 compares the 1969 population estimates with those made in earlier years.

TABLE 2Number of Toheroa 1965-1969

Beach	1965 (Tunbridge) 1967	1966 (Tunbridge) 1966	1968 (Williamson) 1969	1969
Te Horo	5,000		140,000	13,000
Otaki	132,000		141,000	33,000
Hokio	312,000	436,000	610,000	301,000
South Waitarere	90,000	166,000	24,000	19,000
North Waitarere	386,000	203,000	153,000	148,000
Foxton	137,000		106,000	41,000
Tangimoana			84,000	8,000
Moanaroa			13,000	1,000

The toheroa stocks are at their lowest level for several years. How much this depletion is due to public harvesting of toheroa is not known but considerable numbers of newly dead toheroa were present on some of the beaches in summer 1968; the cause of death was unknown.

CONCLUSION

The numbers of toheroa on Wellington West Coast beaches has dropped markedly since June 1968 and few small toheroa are present.

ACKNOWLEDGEMENTS

I wish to thank those of my colleagues who participated in the arduous digging of over 1½ miles of trench and particularly Mr D. Macalister for his valuable assistance.



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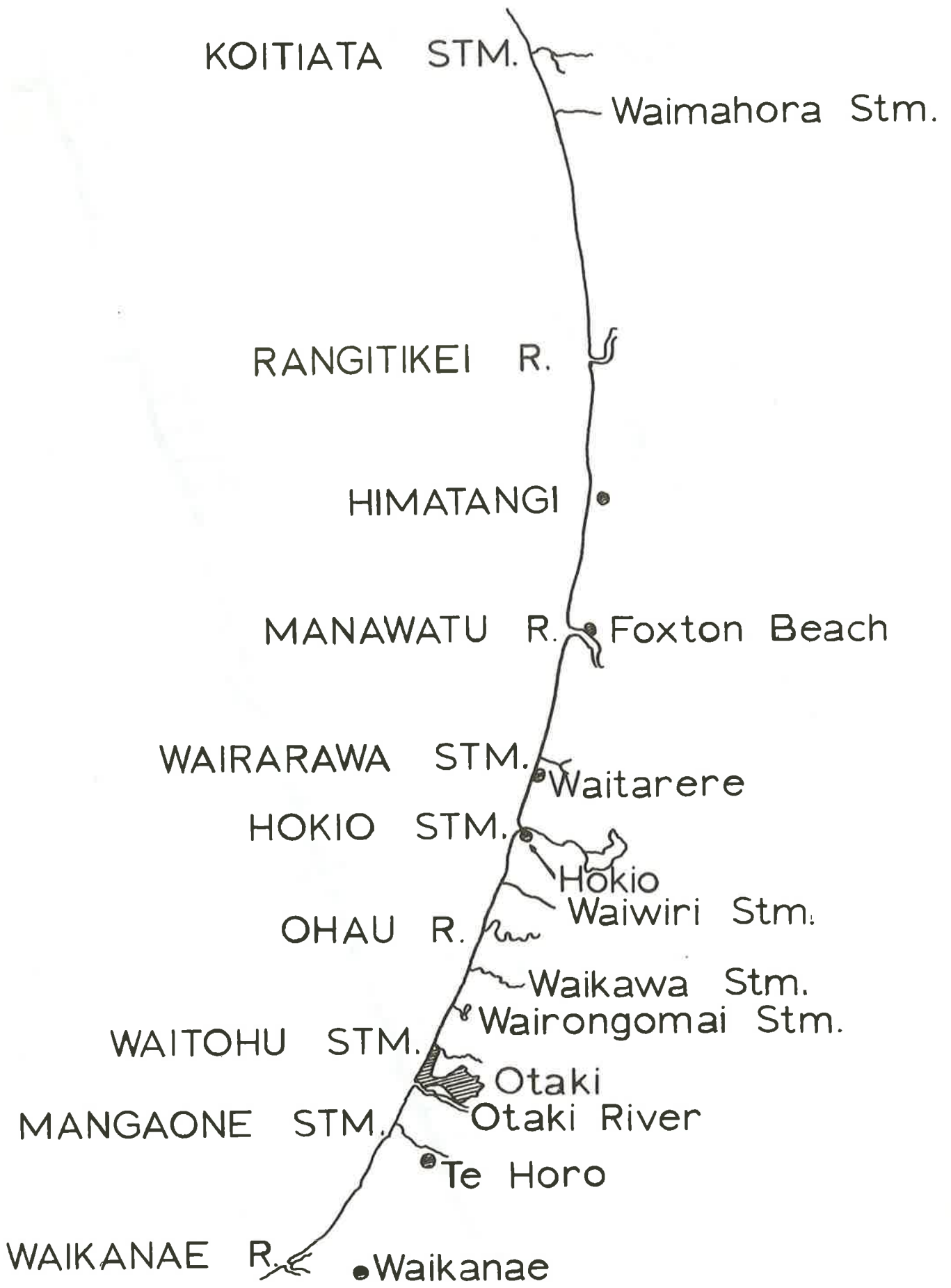


Fig. 1 LOCATION MAP

Fig. 2 TOHEROA PER TRAVERSE

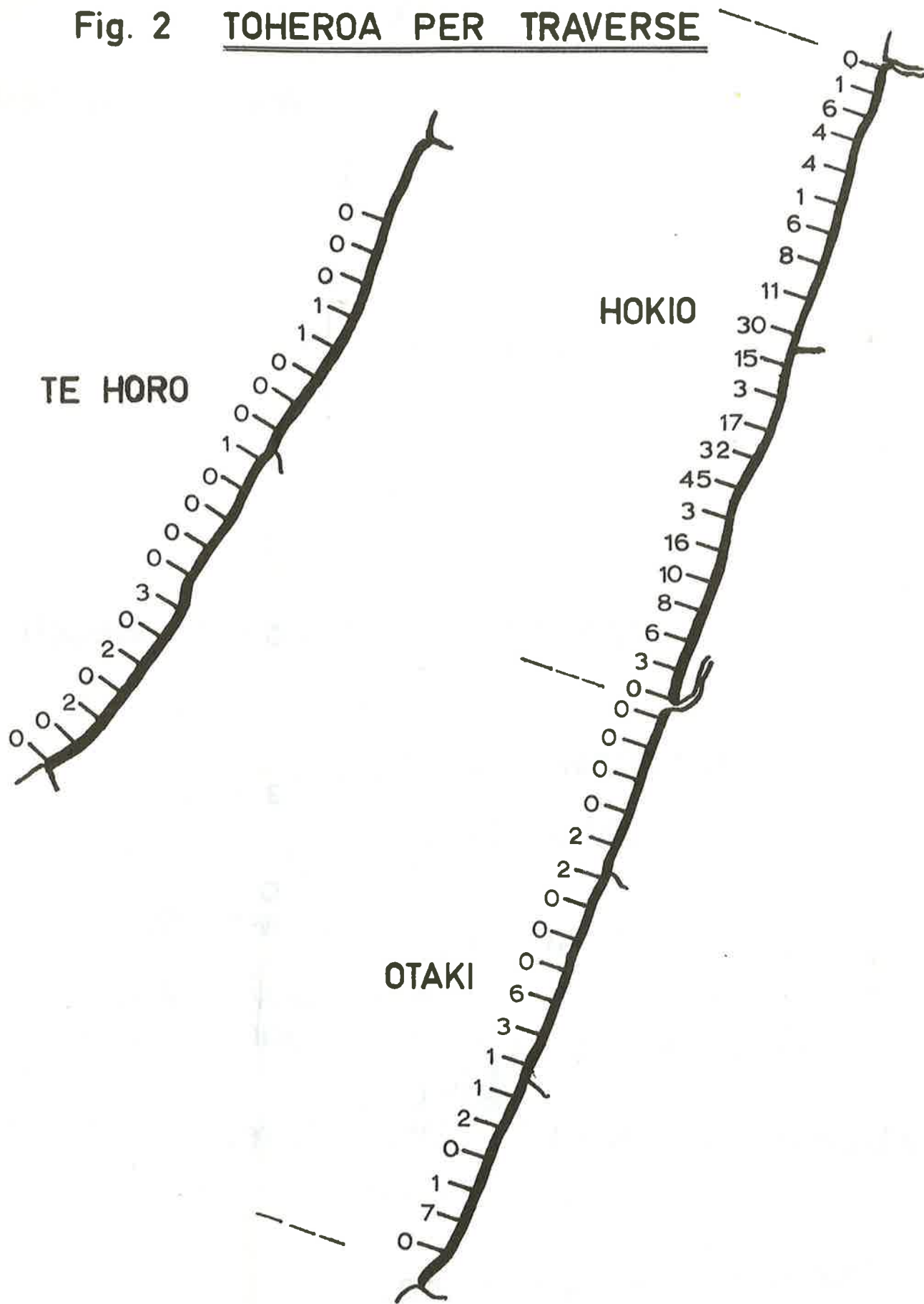
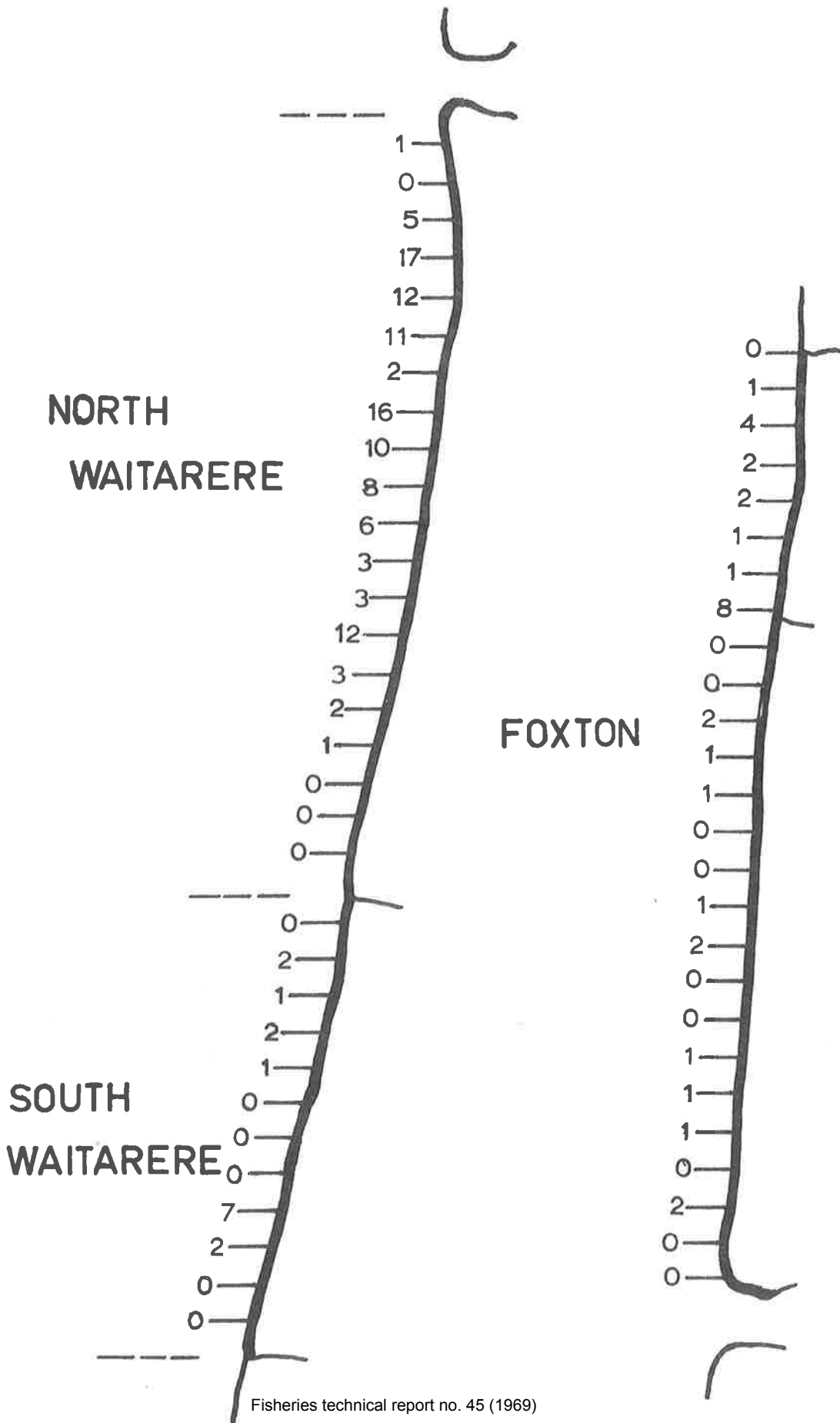


Fig. 3

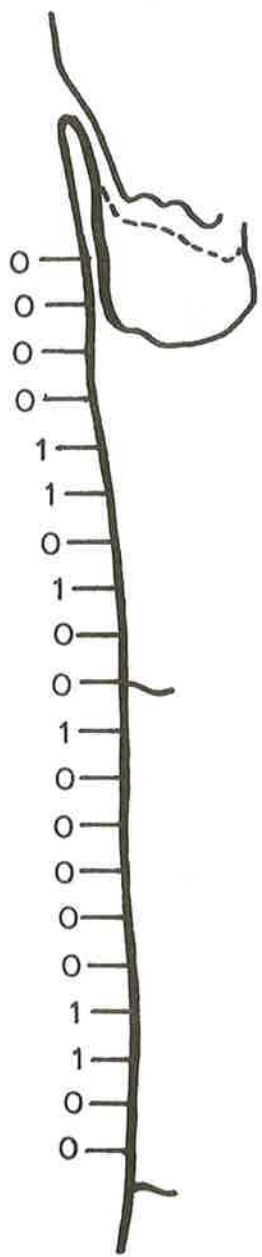
TOHEROA PER TRAVERSE



10.

**Fig. 4**  
**TOHEROA PER TRAVERSE**

**TANGIMOANA**



**MOANAROA**

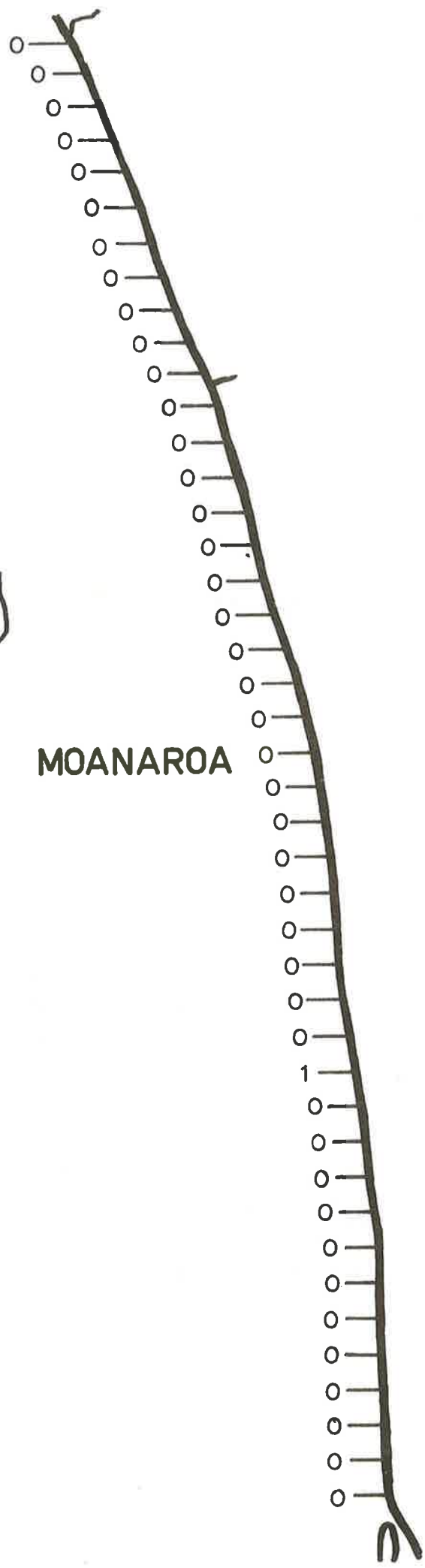


Fig. 5

TOHEROA - LENGTH FREQUENCY  
OTAKI

