

# DISTRIBUTION OF THE CAPE PIGEON IN THE TASMAN SEA AND SOUTH-WEST PACIFIC

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## ABSTRACT

Observations of the Cape Pigeon (*Daption capense*) have been made during 16 years in the Tasman Sea and in New Zealand coastal waters, and for three years between New Zealand, Fiji, Tonga and Norfolk Island. Abundance and seasonal distribution have been plotted on four charts and a transect diagram. The relationship of abundance and distribution in the Tasman Sea and New Zealand is shown on three graphs. Between November and June (hydrological summer and autumn), few birds were recorded but during the rest of the year Cape Pigeons were widespread and abundant, even as far north as 24°S in September.

## INTRODUCTION

The Cape Pigeon (*Daption capense*) is one of the most familiar birds to seafarers in the southern oceans. It is an habitual follower of ships and is easily identified by the distinctive pattern of its black and white plumage. Records of its occurrence have been kept for many voyages in merchant ships on the New Zealand coast and trans-Tasman between 1959 and mid-1976. Good coverage has been obtained for all months in the Tasman and in New Zealand coastal waters. The area to the north of New Zealand toward Fiji, Tonga and Norfolk Island has been well covered during the four years from 1972 to 1976, many return voyages being plotted for each month.

Where possible the birds were counted three times each day, in the morning at 0800, at noon and around 1600 hours. When any peak in numbers was noticed outside these hours it was recorded. Since the Cape Pigeon is a faithful ship follower, no attempt was made to record by unit time or unit distance. It is rare to see a Cape Pigeon appear ahead of the ship even though quite large numbers may be following. They seem to join the ship by flying up the wake. Therefore the technique of recording birds appearing ahead of the ship was not practicable. Although it is known that *D. c. capense* and *D. c. australe* both occur in the area (Bartle 1974), it was found impracticable to separate the two under our conditions for observation. Therefore, any different patterns of dispersal that may occur in the two subspecies will be masked in our observations.

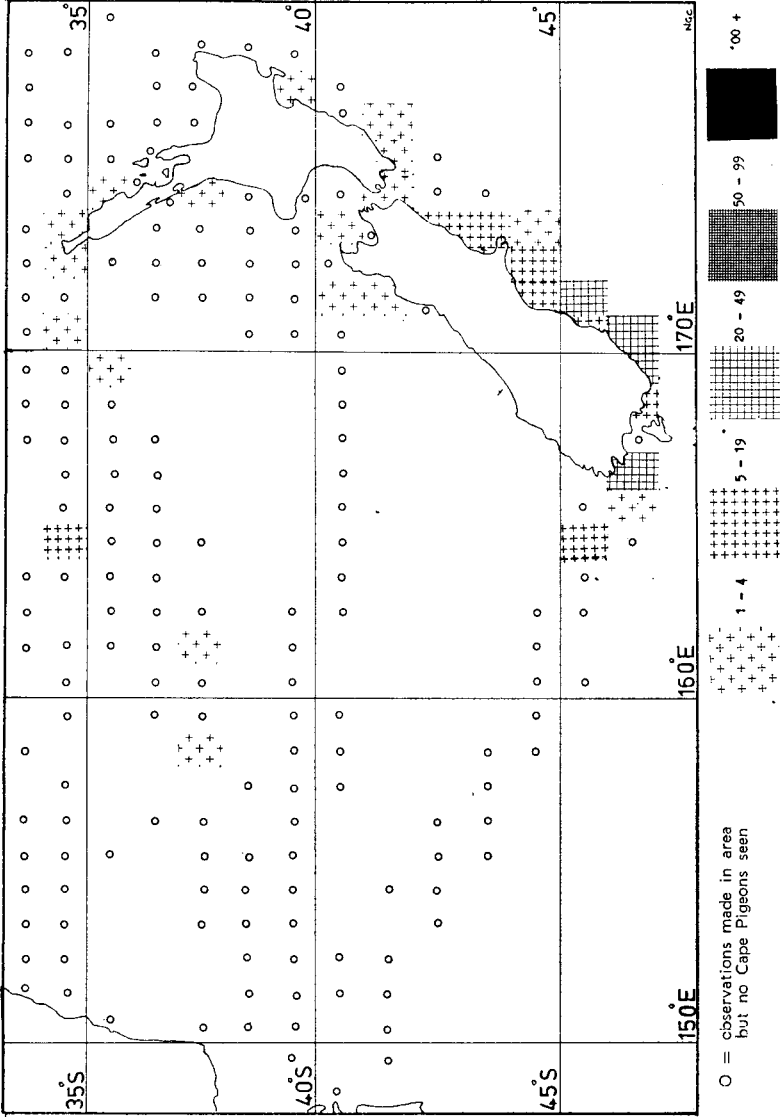


FIGURE 1 — Distribution of Cape Pigeon. December to March.

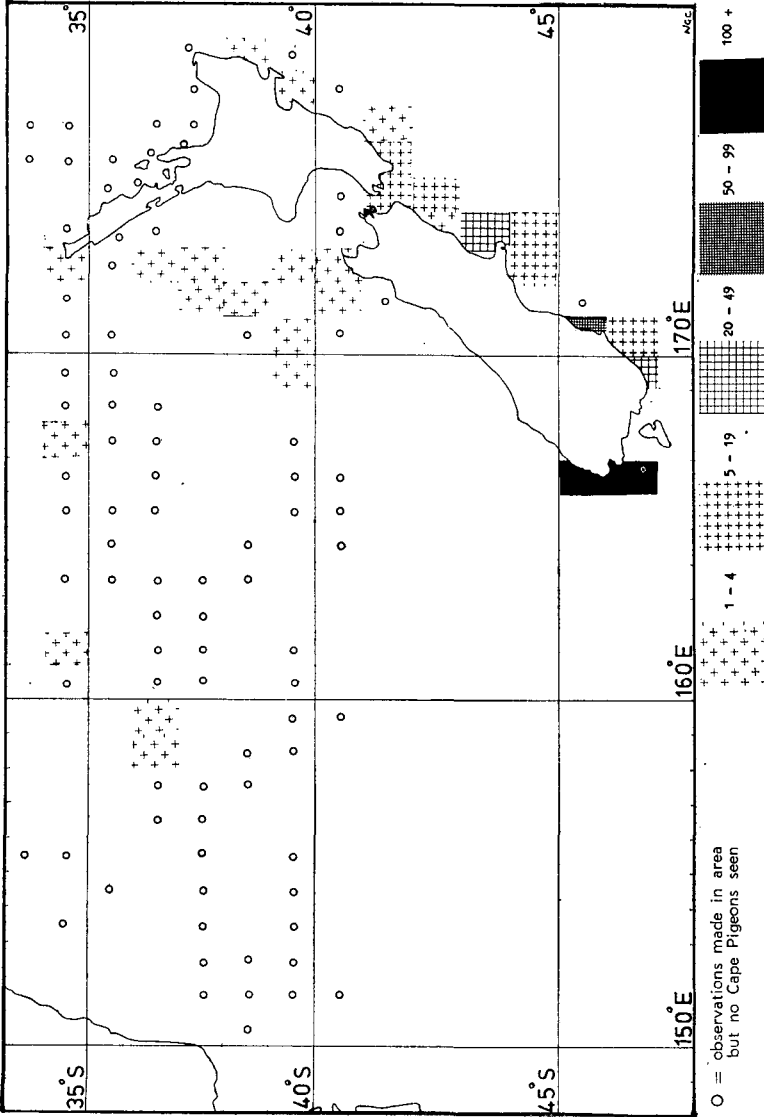


FIGURE 2 — Distribution of Cape Pigeon. April and May.

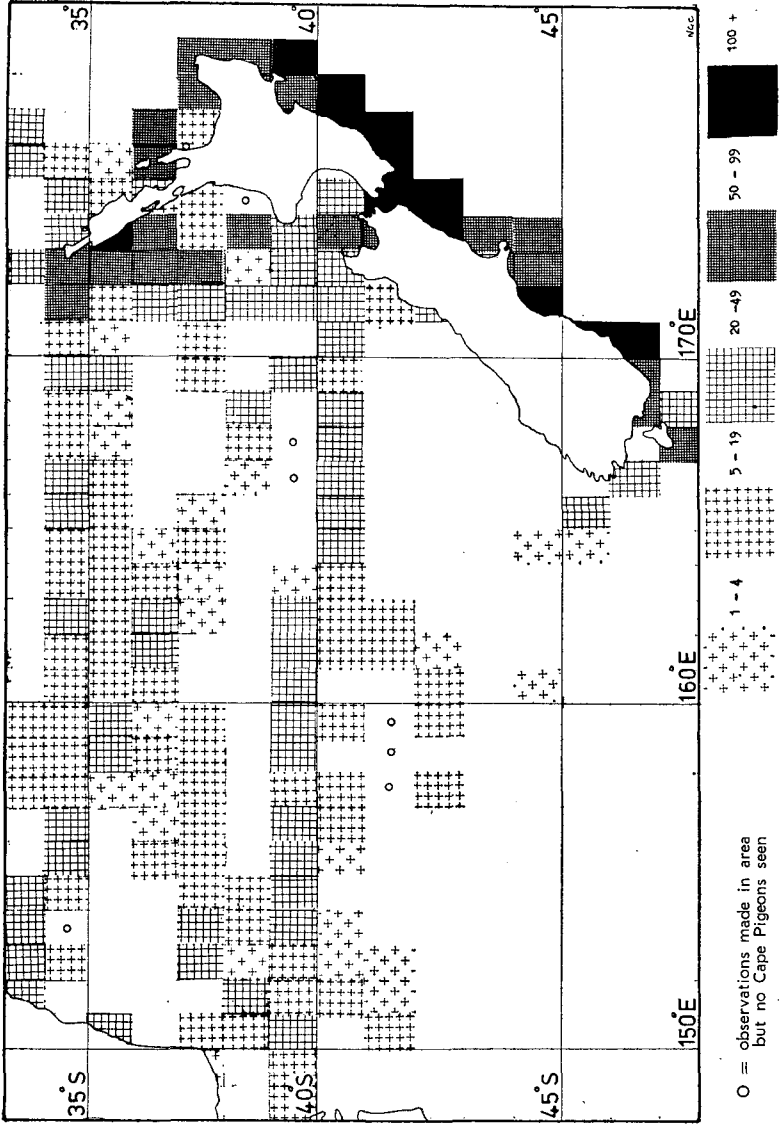


FIGURE 3 — Distribution of Cape Pigeon. June to October.

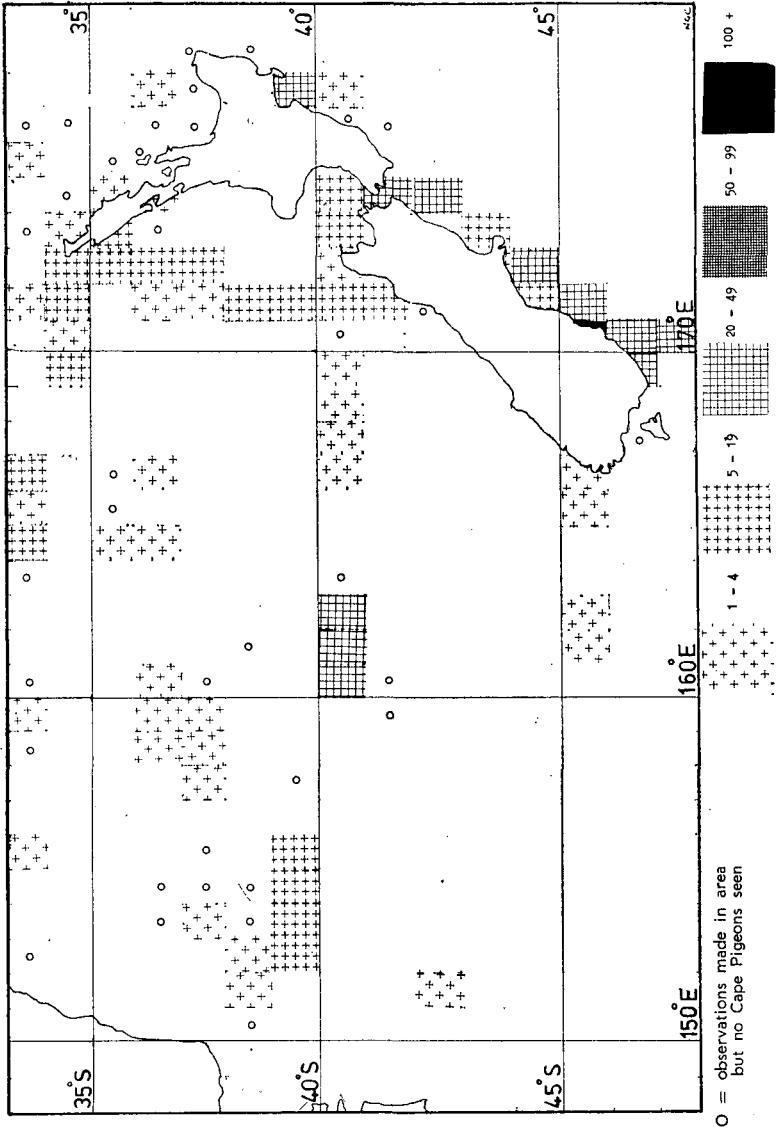


FIGURE 4 — Distribution of Cape Pigeon. November.

The records for the Tasman Sea and New Zealand coast were plotted on monthly charts for each 1° area of latitude and longitude. The numbers plotted indicate the maximum count obtained in any one degree area, at any instant. They do not represent a cumulative count or the total number of birds in the area. The monthly plots have been summarised into four periods during which there was little change in abundance and distribution (Fig. 1-4). The charts have some gaps as there are a number of 1° areas which we have not visited or have crossed at night. However, they do indicate the presence or absence of Cape Pigeons and give a reasonable indication of their relative numbers throughout the year.

In Figure 5, percentage distribution and average numbers per month are shown on three graphs covering the Tasman Sea 150° - 160°E, 160° - 170°E and New Zealand coastal waters. It should be remembered that these graphs cover a wide latitudinal range from 33°S to 48°S and should be used in conjunction with Figures 1-4.

#### DISTRIBUTION AND ABUNDANCE

*December to March.* In the western Tasman (150-160°E) single birds have been sighted in December, but from January until May no Cape Pigeons were seen. In the central Tasman (160-170°E) small numbers persist during December and through until February. There is an absence of birds here during March and April. In New Zealand coastal waters small numbers of birds remain throughout the summer months. Single birds have been seen as far north as North Cape (34° 20' S) during December. In the same month up to 30 birds have been seen off Otago and in western Foveaux Strait. These summer records off the east coast of the South Island may be related to fishing boat activity and the relative proximity of the breeding islands. Minimum distribution and numbers occurred during January and for this month we have no records north of Kaikoura (42° 25' S).

*April and May.* There is a complete absence of Cape Pigeons in the western Tasman. In the central Tasman a few birds (max. recorded 4) begin to reappear. South Island coastal waters show a considerable increase in distribution and numbers but even during May the birds are very scarce north of Cook Strait.

*June to October.* In the western Tasman there is a considerable expansion in range during June, birds being recorded in 70% of 1° areas compared with none during May. The actual number of birds remains low. Maximum 100% distribution is achieved in September with peak numbers in August.

In the central Tasman maximum 100% distribution was achieved in August with peak numbers in September.

Further east, in New Zealand coastal waters, there is also a wider distribution during June and again the number of birds reaches a maximum during August and September. From the graph (Fig. 5)

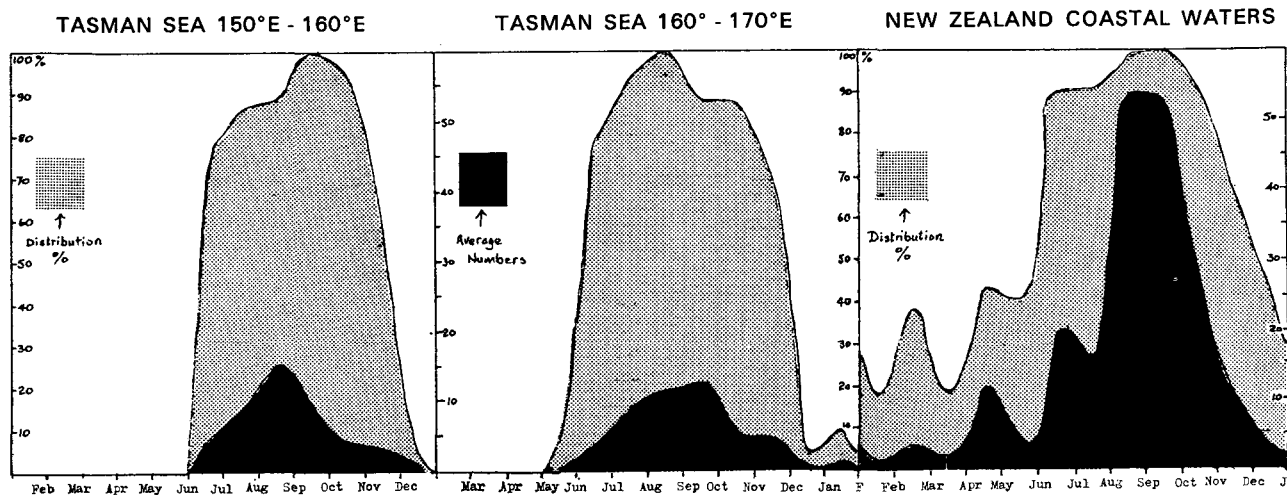


FIGURE 5 — Summary of monthly distribution and numbers of the Cape Pigeon.

$$\text{Distribution \%} = \frac{\text{Number of } 1^{\circ} \text{ areas where Cape Pigeons observed} \times 100}{\text{Total number of } 1^{\circ} \text{ areas in which observations made.}}$$

$$\text{Average numbers} = \frac{\text{Sum of maximum counts for all } 1^{\circ} \text{ areas.}}{\text{Total number of } 1^{\circ} \text{ areas in which observations made (incl. nil areas)}}$$

it can be seen that the actual numbers of birds recorded are much higher in New Zealand coastal waters than in the Tasman Sea. The maximum density of birds occurs in Cook Strait and off the east coast of the South Island and east coast of the North Island south of East Cape. Observations of large numbers include one on 6 September 1974 in eastern Cook Strait at 41°40'S 175°15'E when at least 300 Cape Pigeons were following the vessel. Off the west coast of Northland up to 100+ birds have been seen, yet to the east of Northland numbers are relatively low.

*November* is the month of transition. There is a marked decrease in abundance right across the Tasman Sea and in New Zealand coastal waters.

#### *Observations between New Zealand and Pacific Islands*

To illustrate the northward extension of the Cape Pigeons' range in this area, monthly latitudinal distribution has been shown by means of a transect diagram (Fig. 6, after Fowler 1973). The longitudinal limits of the diagram are 170°E to 175°W (15° of longitude).

Maximum northward extension of range occurs in September and on 17 September 1973 a Cape Pigeon was sighted six miles west from Cape Washington, Kadavu, Fiji (19°05'S 177°52'E). Also, on 16 September 1973, three birds were seen at 20°05'S 177°23'E, being 60 miles SSW from Kadavu. The sea surface temperature at the northernmost limit on 17 September 1973 was 25°C. Where there are cold north-flowing currents such as the Humboldt off the west coast of South America and the Benguela off South-west Africa, Cape Pigeons are recorded north to the equatorial regions.

Of particular interest are the quite large numbers of birds seen well to the north of New Zealand in September: 50+ birds to 29°13'S and 30+ to 24°08'S. The northward distribution of Cape Pigeons in the Tasman Sea in winter was noted by Summerhayes (1969), who also summarised earlier records.

#### AUTHORS' NOTE

This report was drafted in 1976. It is based on original material and is an attempt to present information collected by the authors between 1959 and 1976 and helped to a small extent by fellow seafarers. The number of references to Cape Pigeons in the South-west Pacific is legion; although we have taken them into consideration, we have not listed them because in most instances they concern single voyages or even isolated observations. Accordingly, they can have little effect on the interpretation of the observations which we have ourselves made on many voyages at all seasons.

Subsequent records are being lodged with the Australasian Seabird Mapping Scheme.



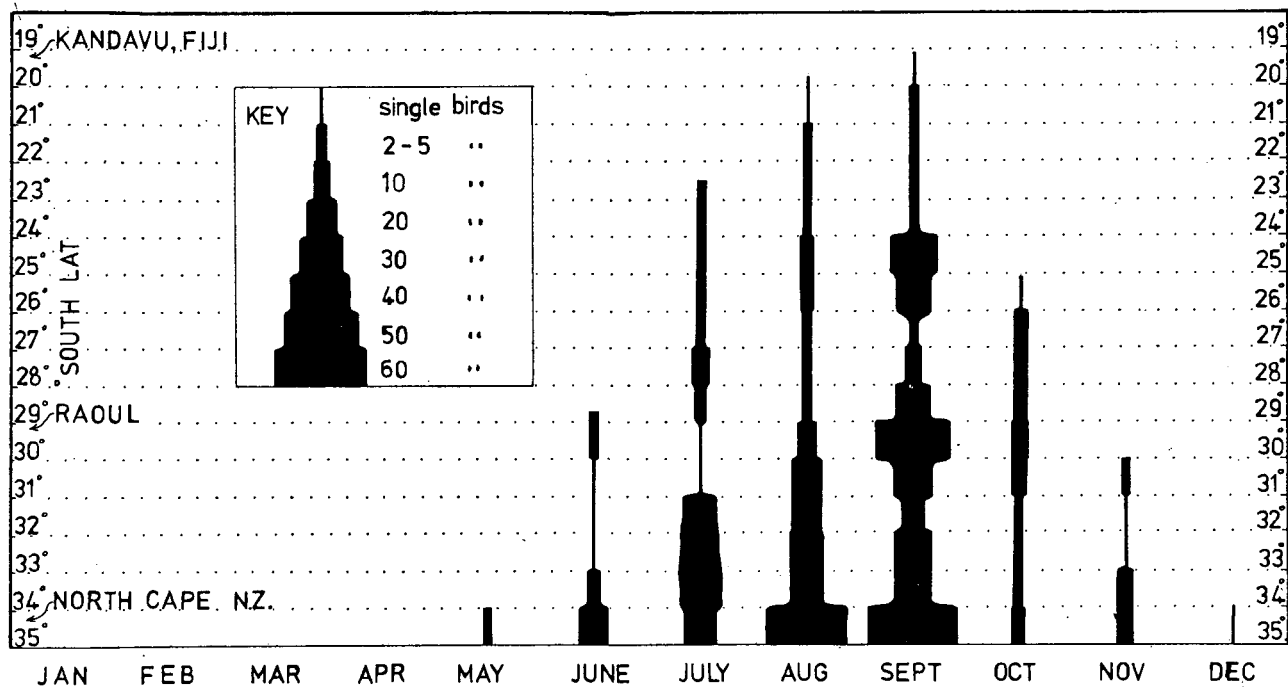


FIGURE 6 — Latitudinal distribution and abundance of the Cape Pigeon between New Zealand and Pacific Islands. Longitudinal limits, 170°E to 175°W (15° longitude).

## ACKNOWLEDGEMENTS

We should like to thank our seafaring colleagues Derek Smith and Rod Grout for providing extra material. Our mentor throughout this project, R. B. Sibson of Auckland, is sincerely thanked for his continuing assistance with our seabird recording.

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## SHORT NOTES

## WHITE-FACED HERONS ON CHATHAM ISLAND

On 9 January 1978, while in the south-west of Chatham Island with David Crockett's successful 'Taiko' Expedition, my husband and I were traversing the coast from just north of the Little Awatotara Creek to north of the Durham Point area. While high on a bluff, we saw a White-faced Heron (*Ardea novaehollandiae*) fly out from a ledge below us, and we saw a nest.

The nest, some 10 m above sea-level, was in a small cleft. It contained a few pieces of driftwood and seaweed, and two sky-blue eggs. The rock face below was white with droppings.

On 21 January we revisited the site and flushed the bird — two eggs; and twice on the 29th — one chick and one egg. As we then had to leave the island no further observations were possible.

Could it be that this site was chosen because of the complete lack of trees more than 3 m high within a 1500 m radius?

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## AN INTERESTING BAND RECOVERY

On 21 April 1978, I found a juvenile New Zealand Black-browed Mollmawk (*Diomedea melanophris impavida*) carrying a New Zealand band No. 22519, about 3 km north of Himitangi, on the Wellington west coast. The bird, which had probably died within 24 hours, had been banded by the Campbell Island meteorological party only seven days earlier, in its nest on Bull Rock, Campbell Island — 1470 km away.

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