THE EMPEROR PENGUIN COLONY AT CAPE WASHINGTON IN THE WESTERN ROSS SEA, ANTARCTICA

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The colony of Emperor Penguins *Aptenodytes forsteri* at the tip of Cape Washington (74° 40′ S, 165° 30′ E) (Fig. 1) was first sighted on 29 October, 1965 (Cranfield, 1966), although the presence of such a colony in the vicinity of Wood Bay had been postulated earlier by Harrington (1959). Cranfield *(loc. cit.)* had only a brief view from a passing aircraft but estimated a population of 4,000 to 6,000 adults and the same number of chicks, on the grounds that it appeared about one-half the size of the colony at Cape Roget.

On 14 November, 1968, while in a low flying U.S. Navy C-130 Hercules assessing seal distribution and numbers, I had the opportunity to photograph this penguin colony. Colour slides were taken through the cockpit windows at a minimum distance of 1500 feet to avoid

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Plate XXXV — South side of Cape Washington showing distribution of breeding groups of Emperor Penguins and orientation of sastrugi.

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possible disturbance to the birds by such a large aircraft. Thus the clarity of the photos was not ideal but by projecting the slides on a large screen and comparing the size of countable groups with uncountable ones, the total number was estimated to be about 7,600 birds of which about one-third to one-half were chicks in creches.

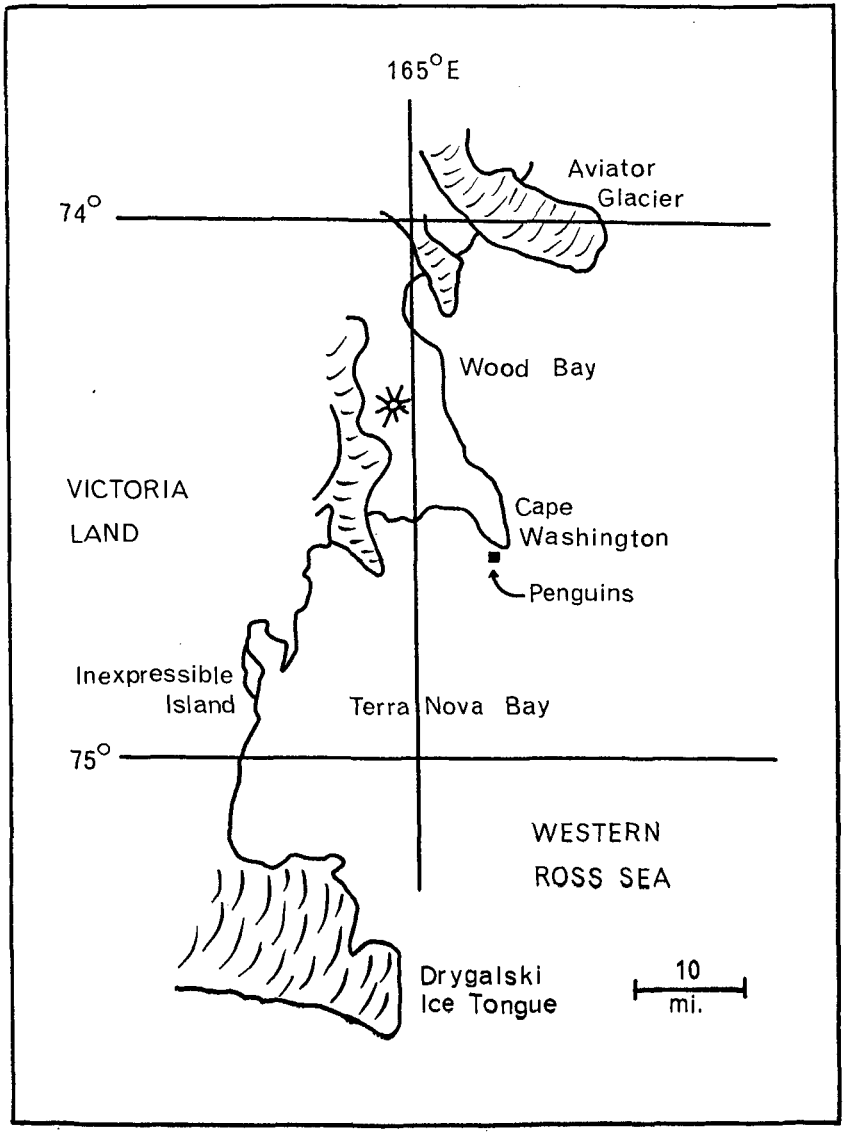

FIGURE 1 — Map Showing Location of Emperor Penguin Colony at Cape Washington

Stonehouse (1968) makes the point that the existence of a penguin breeding colony at high latitude is a certain indicator of open water early in the spring. Open water has been recorded in mid-winter SW of Cape Washington at Inexpressible Island (Priestly, 1914), at which there is a colony of Adelie Penguins *Pygoscelis adeliae.* Thus it is likely open water occurs near Cape Washington in early spring to permit the adult birds to obtain food for the chicks. On 14 November, 1968, there was open water and pack ice about one mile north of the cape.

Plate XXXV is a photo of the south side of the cape showing the location of the penguin colony. The direction of the sastrugi indicate the high degree of exposure of the birds to the prevailing winter winds. Cranfield *(loc. cit.)* suggested the exposed nature of the colony might subject it to the risk of premature break-up of the sea ice. However, the U.S. Naval Oceanographic Office, *Sailing Directions for Antarctica* (1960: p. 232) state, "This rocky peninsula [Cape Washington] separates Wood Bay and Terra Nova Bay [see Fig. 1] and traps vast quantities of drift ice swept northward by the tidal stream and forced against the shore by the summer prevailing winds [SE]." Thus it seems unlikely the fast ice immediately south of the cape might be blown away in early spring and that in fact large areas of stationary ice are normally present, even if in floes, until well after all the chicks are fledged.

The colony of Emperor Penguins that breeds on the sea ice between Coulman Is. and the mainland is similarly exposed to the prevailing southerly winds (personal observation) and although near open water early in the season (Harrington, *loc. cit.*), it is unlikely the sea ice breaks out before the chicks are fledged. In January, 1967, and February, 1968, I visited the west coast of Coulman Is. aboard the icebreakers *Glacier* and *Westwind* respectively and in both years this channel was still blocked with ice.

Budd (1961) rightly considered that safety from break-up of the sea ice prior to fledging of the chicks was one of the most important factors determining the location of Emperor Penguin colonies and Stonehouse *(loc. cit.)* has clarified the importance of open water close to the colony early in the season.

The significance of shelter is much less clear although Budd *(loc. cit.)* felt the available (if weak) evidence suggested that colonies might be located away from the greatest exposure to wind. The exposed location of the Emperor Penguin colonies at Cape Washington and Coulman Island suggests that shelter is much less important than stability of sea ice and nearness of open water in early spring.

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