been seen: about 1924 one was observed on NW 20-23-3 W2, going upstream; an island on NW 30-23-3 showed beaver teeth marks on the trees; one lived for three years on NE 4-23-3.

Norway Rat *(Rattus norvegicus):*
The first rat seen was caught by hounds about 1928, and have increased in numbers since.

Arctic Fox *(Alopex lagopus):*
About 1924 an Arctic Fox was caught by a neighbour's dog.

Red Fox *(Vulpes vulpes):*
Red foxes were quite common in the early days. I believe there were four or five pairs resident on our home section in 1883, and up to 10 pairs per section south of Boakeview School. About 1920 they disappeared for some years. Now an occasional one is seen.

Wolverine *(Gulo luscus):*
One was seen when hunting deer at Crescent Lake about 1920. I thought the track must be that of a lynx and followed it to where the wolverine was curled asleep on the sunny side of some balsam poplars. He dived for cover as I shot and missed him.

Badger *(Taxidea taxus):*
Badgers were plentiful in the 1880's, then almost disappeared after the turn of the century.

Lynx *(Lynx canadensis):*
An occasional stray came into the district. One that had been treed by Indian dogs was shot in the 1890's.

Wapti *(Cervus canadensis):*
Elk were said to have been present in the 1870's. In the 1880's antlers were found, but no animals were seen. Tracks were seen north of Saltcoats once, about 1920.

Mule Deer *(Odocoileus hemionus):*
Mule Deer were fairly common in 1883, although not as common as the White-tailed Deer are now. They always paused to look at the hunter before they would run and hence were easy to shoot. None are seen now.

White-tailed Deer
(Odocoileus virginianus):
No White-tailed Deer were present until 1896. They became common about 1910, and increased in number as the country became settled.

Bison *(Bison bison):*
No bison were left by 1883, though great quantities of buffalo bones indicated that they had been numerous not too long before.

MACQUARIE ISLAND 54° SOUTH

by **Bill Merilees,** Castlegar, British Columbia

Royal Penguin "sit in". Elephant Seals in background.

Royal Penguins on Macquarie Island, male on right, female on left

EDITOR'S NOTE: Bill Merilees joined our group in 1958 and has been taking the Blue Jay ever since. He attended our June meeting in 1961 when he was working for CWS in Saskatoon. Our summer meeting that year included visits to historic sites at Batoche. Since then Bill has obtained his B.Sc. in Zoology and Botany from the University of British Columbia. He has visited Fiji, Tonga and Samoa, New Zealand, Australia, Singapore, Ceylon, India, East Africa, Sudan and Egypt and during 1967 the Macquarie Island. He is now teaching at Selkirk College in Castlegar.

When I left Canada in 1964 on an extended tour, I had little thought of the Antarctic until I visited Canberra, the Australian capital. Here, on a sunny afternoon, I was offered a biological appointment with the Australian National Antarctic Research Expedition. After much pondering and debate I accepted and, though there were certainly hardships, a more interesting decision I have yet to make.

Macquarie Island, although not in the Antarctic proper, straddles the Antarctic Convergence 54° south. Along this convergence the cold antarctic waters meet the warmer subtemperate waters; and it is the mixing of these which causes the upwelling of vast quantities of nutrient salts which sustain a great chain of organisms. Penguins, albatross and the great whales culminate this chain. Between 50° and 60° south the world is 98 percent water but to the biologist, at present, it is the remaining two percent that is of great interest, for it is to this small area of *terra firma* that all the oceanic birds and seals must congregate to breed. Macquarie Island owes its discovery to this fact. In 1810, Captain Hasselborough discovered the island in his quest of the Fur Seal and in the few years immediately following his discovery this species soon became locally exterminated. Today, the Fur Seal is making a slow but steady comeback.

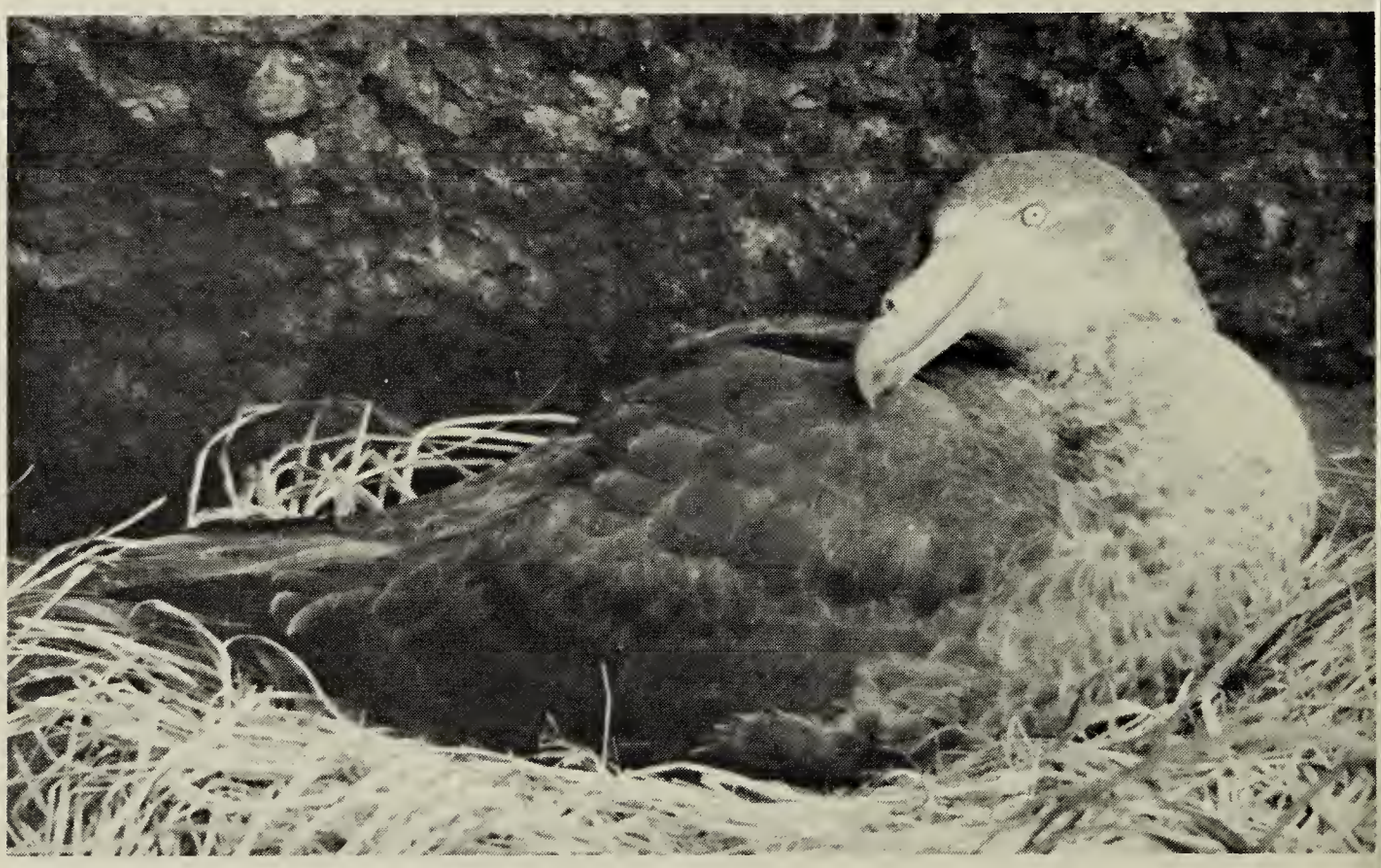
Aside from my own studies, my duties entailed the continuation of the long-term research into the Royal Penguin, Wandering Albatross, Giant Petrel and the Southern Elephant Seal, largest of all the land-based mammals. To anyone with a natural history "bent" this would be a fascinating opportunity. Despite the fact that I recorded only 27 species of birds in the 13 months I was in residence, their uniqueness speaks for

Southern Skua takes unguarded penguin eggs and chicks.

itself. Five penguins, four albatross, six petrels of various types, two ducks, one a Mallard, one cormorant, one tern, one gull, one Skua, a flightless rail (introduced) and five self-introduced passerines from New Zealand round out the list. One of the passerines is the Starling! Wouldn't you know it.

The Royal Penguin which we have been studying the past 12 years is of medium size. It stands about 24" high in typical black and white penguin plumage with a bright red, robust bill and orange superciliar plumes; it weighs about 14 pounds. By nature, the Royal is far from passive and its pugnacious attitude is enhanced by a strong bill, hard flippers and long toe nails and these together usually discourage all but those bipedal. Their main "hold" is to latch on with their bill and then beat with their powerful flippers. This combination really smarts, particularly in the cool weather.

Beginning in late September (the southern spring) the males arrive ashore and take up a small territory in one of the rookeries. (The largest rookery covers 22 acres and holds over 600,000 birds). The male is followed by his mate about 10 or so days later. Towards mid-October, the first egg is laid and for some unexplained reason little attention is paid to it and it is soon lost, having either rolled away or having been taken by the ever-watching Skua. It is only the



Giant Petrel on nest. This bird preys on penguins. Note heavy hooked bill and large "tube nostril".

Photos by Bill Merilees

t female Royal Penguin. Note robust bill and long superciliary crest.

d and larger egg which is re-
d and incubated. Both male and
le share in the incubation, the
le taking the first stint and the
the second. This lasts about five
s so each bird has had to remain
e somewhat over three weeks
ut food or water, during which
the breeding birds must rely on
fat reserves. While the hen is
e egg, the cock is away feeding
vice versa. At hatching, both
ts are present and feeding
s, a paste of partly digested krill
mp) being passed from the female
e chick cormorant fashion. At
eeding a chick has been known
crease its weight from one pound
o pounds five ounces. Fed once
three to four days the chick
s rapidly and after nine weeks,
g put on over eight pounds, de-
to sea. This is the first week of
uary. Shortly after this the other
arrive ashore to moult, the
er age groups first, with a good
f fat to tide them over the fast.
rst they are sleek but soon their
ers fluff out and begin to fall and
a very ragged stage they depart to sea, only a fraction of their previous weight.

Briefly, this has been the penguin's year and, from the time when they depart after moulting to the time they arrive back for the next breeding season, they remain at sea. Just how far they travel we have no way of measuring but as the Royal is only known to breed at Macquarie Island and on occasion they have been found in New Zealand and Tasmania, 600 and 900 miles away respectively, the distances are considerable. Aside from their unique form, perhaps the penguin's most remarkable attribute is his ability to navigate. Their only beacon in these misty latitudes is the sun and though this shines less than 10 per cent of the time their punctuality in locating this small speck of land is remarkable, hardly varying more than a day or two each year. This unerring orientation does not end when they have located the Island, as they return, like the salmon of the Pacific, to the same small area where they were raised even though more than 600,000 others of their kind may share the same rookery.