PROVINCE OF BRITISH COLUMBIA

DEPARTMENT OF EDUCATION

PROVINCIAL MUSEUM

of NATURAL HISTORY and ANTHROPOLOGY

REPORT FOR THE YEAR 1953

VICTORIA, B.C.
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1954

To His Honour CLARENCE WALLACE, C.B.E.,
Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

The undersigned respectfully submits herewith the Annual Report of the Provincial Museum of Natural History and Anthropology for the year 1953.

R. W. BONNER,
Minister of Education.

Office of the Minister of Education,
March, 1954.

PROVINCIAL MUSEUM OF NATURAL HISTORY AND ANTHROPOLOGY,
VICTORIA, B.C., March 5th, 1954.

The Honourable R. W. Bonner, Q.C., B.A., LL.B.,
Minister of Education, Victoria, B.C.

SIR,—The undersigned respectfully submits herewith a report of the activities of the Provincial Museum of Natural History and Anthropology for the calendar year 1953.

I have the honour to be,
Sir,
Your obedient servant,

G. CLIFFORD CARL,
Director.

DEPARTMENT OF EDUCATION

The Honourable R. W. BONNER, Q.C., B.A., LL.B., *Minister.*
H. L. CAMPBELL, B.A., M.Ed., *Deputy Minister and Superintendent.*

PROVINCIAL MUSEUM OF NATURAL HISTORY AND ANTHROPOLOGY

Staff:

G. CLIFFORD CARL, Ph.D., *Director.*
GEORGE A. HARDY, *Botanist and Entomologist* (to August 31st).
CHARLES J. GUIGUET, M.A., *Biologist.*
WILSON DUFF, M.A., *Anthropologist.*
WILLIAM A. HUBBARD, M.A., *Botanist* (from September 8th).
FRANK L. BEEBE, *Illustrator and Museum Assistant.*
MARGARET CRUMMY, B.A., *Senior Stenographer.*
BETTY C. NEWTON, *Artist.*
SHEILA Y. DAVIES, *Clerk.*
MARY ELEANORE WHEELDON, *Clerk.*
E. J. MAXWELL, *Attendant.*
J. MOFFAT, *Relief Attendant.*

PROVINCIAL MUSEUM OF NATURAL HISTORY AND ANTHROPOLOGY

Objects

(*a*) To secure and preserve specimens illustrating the natural history of the Province.

(*b*) To collect anthropological material relating to the aboriginal races of the Province.

(*c*) To obtain information respecting the natural sciences, relating particularly to the natural history of the Province, and to increase and diffuse knowledge regarding the same.

(Section 4, "Provincial Museum Act," chapter 273, R.S.B.C. 1948.)

Admission

The Provincial Museum is open to the public, free, on week-days, 9 a.m. to 5 p.m., and on Sunday afternoons, 1 p.m. to 5 p.m.

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REPORT OF THE PROVINCIAL MUSEUM

FOR THE YEAR 1953

REPORT OF THE DIRECTOR

NEW EXHIBITS AND REMOVALS

Early in the year a new type of display-case for small mammals was designed and an experimental unit was constructed. The new case, showing white-footed mice in a beach habitat, has proven so successful that others are in preparation and more are planned for the future. The main features of the new design are a glass front sloping inwardly to eliminate reflections, a dust-tight inner unit holding the specimens, and a concealed source of artificial light. The background and accessories have been prepared by Mr. Beebe; the taxidermy is by Mr. Guiguet.

Many of the labels in both the mammal and the bird section have been replaced by those of a more legible style, similar to those introduced in 1952.

Two of the large mounted mammals, a bull elk and a caribou which had been on exhibition for more than fifty years, were withdrawn. Instead of destroying the specimens directly, they were removed to a play-field in Beacon Hill Park, where children enjoyed riding them until they eventually fell apart.

A number of small mammals of similar age were removed from display. Most of these were turned over to Denis W. Brown, of the Audio-Visual Education Branch, Greater Victoria School Board, who distributed them among certain school museums.

SPECIAL EXHIBITIONS

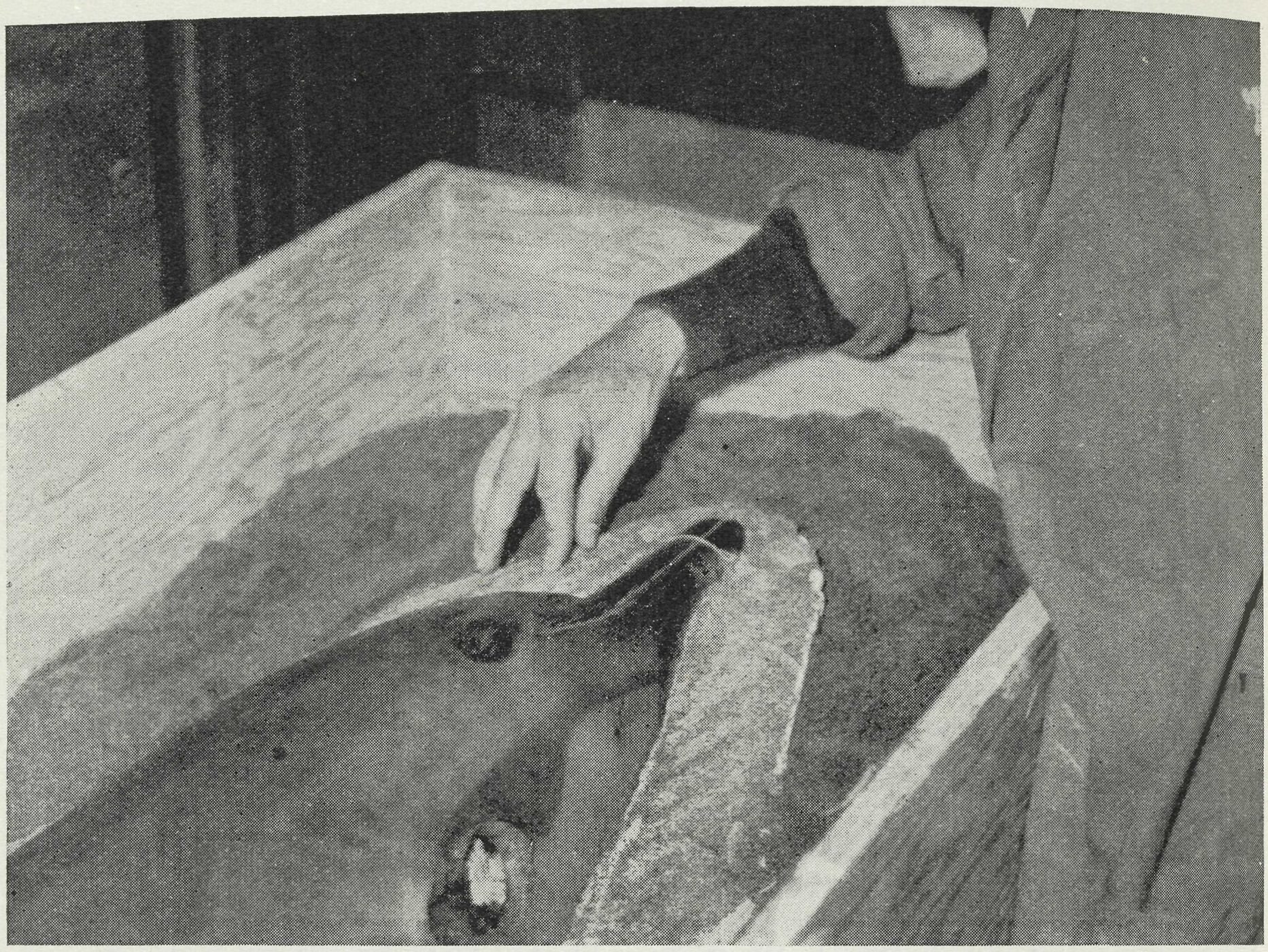
To mark Coronation Year a special exhibit was arranged featuring plants, animals, and Indian dress connected with royalty or having names suggesting such an association. Natural-history specimens included king-of-the-salmon, kingfish, king crab, golden-crowned sparrow, queen's cup, and prince's pine, while Indian material consisted of a chief's head-dress trimmed with ermine displayed against a Chilkat blanket.

As a result of considerable local interest in primitive stone sculpture, several examples of this art were placed on display along with photographs and data concerning recent finds. The carvings of greatest interest are each of a human figure holding a bowl; the function or purpose of such carvings is unknown.

During Education Week a special display was maintained showing the functions of the Museum, and on Friday, March 6th, "open house" was held for the general public. For the occasion, several special exhibits were arranged and the following demonstrations were given: Air-brush art work by Frank Beebe; mask-carving by Mungo Martin; string figures by Mrs. Mungo Martin. Conducted tours were made through the study collections and a Museum-produced film was shown. Several hundred people attended.

A special exhibit of outstanding interest was the annual display of the Victoria Aquarium Society, which took place during the period June 29th until July 5th. Some local and many exotic species of fish were shown in a series of about thirty beautifully arranged tanks. Many favourable comments were received from visitors viewing the show.

On July 20th, H. L. Campbell, Deputy Minister of Education, officially opened the Twelfth Annual Exhibition of British Columbia Indian Arts and Crafts, consisting of more than 240 entries from several Indian schools and individual artists. The display was



Frank Beebe making plaster cast of common dolphin.

White-footed mice—a recently installed habitat group.

(Photos by G. C. Carl.)

sponsored by the British Columbia Indian Arts and Welfare Society, under the chairmanship of B. T. Hill.

To mark the completion of the Kwakiutl house in Thunderbird Park and the erection of Mungo Martin's totem-pole, programmes of dances and dedication ceremonies were presented in the new house on December 14th, 15th, and 16th.

FIELD WORK

Field work was carried on throughout the year as usual, the major trips being as follows:—

July 3rd to 12th: Dr. Carl and Mr. Beebe visited Stum Lake, 25 miles north of Alexis Creek, Chilcotin district, to photograph a pelican colony.

July 26th to August 31st: Mr. Duff visited Alert Bay and several old village-sites on the Queen Charlotte Islands in connection with the totem-pole restoration programme as reported elsewhere.

July 31st to August 7th: Mr. Hardy collected material in the Forbidden Plateau region.

September 15th to 22nd: Dr. Carl and Messrs. Beebe, Guiguet, and Hubbard visited Wells Gray Park on a preliminary survey for possible field work in the future.

In addition to the above, staff members made numerous short trips to several points on Vancouver Island and vicinity to collect specimens or information as noted elsewhere.

PUBLICATIONS

The following publications have originated from the Museum during 1953:—

By Frank L. Beebe—

"Two Common Shore Birds." Victoria Naturalist, Vol. 9, No. 8, pp. 85–86.

"Notes on the Industrial Plastic 'Styrfoam' as a Modelling Material for Museum Exhibits." Clearing House for Western Museums Newsletter 163, September, 1953, pp. 611–612.

By G. Clifford Carl—

"Limnobiology of Cowichan Lake, British Columbia." Journal of the Fisheries Research Board of Canada, Vol. 9, No. 9, pp. 417–449.

"Submarine." Victoria Naturalist, Vol. 10, No. 5, pp. 53–54.

"Wasps." Victoria Daily Times, September 10th, 1953.

By Wilson Duff (editor)—

"Anthropology in British Columbia, No. 3," 1952.

Contents:—

Anthropological Research and Publications, 1952, by Viola E. Garfield and Wilson Duff.

Notes on Coast Salish Sea-mammal Hunting, by Wayne Suttles.

Gitksan Totem Poles, 1952, by Wilson Duff.

Results of Archeological Investigations in Central British Columbia, by Charles E. Borden.

A Uniform Site Designation Scheme for Canada, by Charles E. Borden.

An Archeological Survey in the Lower Nooksack River Valley, by R. V. Emmons.

"The Upper Stalo Indians." Anthropology in British Columbia, Memoir No. 1, pp. 1–136.

"Prehistoric Carvings Puzzle Anthropologists." Victoria Daily Colonist, March 1st.

"Will Rebuild Indian House." Victoria Daily Colonist, May 24th.

By C. J. Guiguet—

"An Unusual Occurrence of Turkey Vultures on Vancouver Island." Murrelet, Vol. 33, No. 1, 1952, p. 11.

"California Sea Lion (*Zalophus californianus* (Lesson)) in British Columbia." Canadian Field-Naturalist, Vol. 67, No. 3, p. 140.

"Enigma of the Marbled Murrelet." Victoria Daily Colonist, April 26th.

"About Salmon Fishing." Victoria Daily Colonist, September 13th.

"The Ancient Murrelet." Victoria Naturalist, Vol. 10, No. 6, pp. 68–70.

By George A. Hardy—

"Some Early Spring Flowers in the Vicinity of Victoria." Victoria Naturalist, Vol. 9, No. 8, pp. 87–89.

"Nesting of the Mourning Dove on Vancouver Island." Victoria Naturalist, Vol. 10, No. 4, p. 47.

"Notes on Some Insects from British Columbia." Report of the Provincial Museum for 1952, pp. 26–29.

"Some Conspicuous Spiders and Insects in British Columbia." A single-page leaflet illustrated by F. L. Beebe.

By I. McTaggart Cowan and C. J. Guiguet—

"Three Cetacean Records from British Columbia." Murrelet, Vol. 33, No. 1, 1952, pp. 10–11.

By Josephine F. L. Hart (volunteer assistant)—

"Northern Extensions of Range of Some Reptant Decapod Crustacea of British Columbia." Canadian Field-Naturalist, Vol. 67, No. 3, pp. 139–140.

In addition to the above, Mr. Guiguet and Mr. Beebe together have contributed an illustrated article on birds each week to the Victoria Daily Colonist and Dr. Carl has contributed a weekly article to the Victoria Daily Times on the life-history of a cohoe salmon.

During the year, Handbook No. 5, "The Fresh-water Fishes of British Columbia," by G. C. Carl and W. A. Clemens, was revised and reprinted to take care of the continuing demand for this publication. Considerable work was also done on the manuscript "Mammals of British Columbia," by I. McTaggart Cowan and C. J. Guiguet, which should be ready for the printers next year, and some revision was made to the newspaper material on shore-birds with a view to issuing it in booklet form.

MOTION PICTURES

Material obtained in the Queen Charlotte Islands in 1952 was combined in a 1,200-foot colour film "Birding in Haidaland," and a print was obtained for use in lecturing. Two other new films were completed, "Pelican Parade," by Dr. Carl, featuring the Stum Lake pelican colony in the Chilcotin district, and "Totem Heritage," taken by Mr. Duff to show the present condition of totem-poles at Alert Bay, on the Skeena, and at old village-sites on the Queen Charlotte Islands.

When opportunity permitted, motion-picture material on common plants and animals was gathered for a film to be entitled "Backyard Exploration." Insects, spiders, and native plants are the principal features.

For use on a forthcoming Audubon Screen Tour, material from several films was combined to form a new lecture film to be called "Secrets of the Sea."

In co-operation with the Victoria Amateur Movie Club, several hundred feet of colour film was obtained on steps in making an Indian mask, featuring Mungo Martin, chief carver at Thunderbird Park.

Materials on amphibians of British Columbia supplied to the Division of Visual Education have been assembled into a film-strip, principally for use in schools.

EDUCATION

Museum Lectures

A programme of films was presented to school-children of the Greater Victoria area, as shown by the following schedule:—

Date	Topic	Attendance
February 21st	"In the Beginning"	793
February 28th	"Sea Creatures"	680
March 7th	"Fishes and Reptiles"	555
March 14th	"Birds of a Feather"	579
March 21st	"Mites and Monsters"	514
March 28th	"Native Peoples"	570

Again we appreciate the help given by the Audio-Visual Education Branch of the Greater Victoria School Board is distributing tickets, by the British Columbia Electric Railway Company in granting special travel privileges to school-children attending the lectures, and by the Public Relations Branch, British Columbia Forest Service, in the loan of a phonograph turn-table.

A similar series of films was presented to the general public on Sunday afternoons during this period. More than 2,200 persons attended the six presentations.

Other Lectures

During 1953 the Director gave lectures and film-shows to the following groups: Saanich Board of Trade (Brentwood), Victoria North Kiwanis, Victoria Women's Canadian Club, Victoria West Parent-Teacher Association, Victoria Outdoor Club, Oak Bay High School, Victoria Amateur Movie Club (two shows), Oak Bay United Church Ladies' Club, United Church Ministers (Retired), St. Matthias A.Y.P.A., Victoria College Science Club, Cowichan Fish and Game Association (Duncan, two shows), Duncan Rotary Club, Chilliwack Canadian Club, View Royal Community Club, Victoria Kinsmen Club, British Columbia Indian Arts and Welfare Society, Quadra School, First United Church Ladies' Group, Canadian National Railway Veterans' Association, Victoria Hi-Y, Cordova Bay Parent-Teacher Association, Victoria Cosmopolitan Club, Colwood Community Club, Native Sons and Daughters (Ladysmith), P.E.O. (Victoria Chapter), Victoria Natural History Society, Victoria West Community Club, Qualicum Junior-Senior High School, Comox Parent-Teacher Association, Courtenay Elementary School, Quathiaski Cove Parent-Teacher Association, Campbell River Elementary-Senior High School (two shows), Victoria Welsh Society, Mount View High School Parent-Teacher Association, Victoria Electric Club, Victoria Film Council, St. John's Older Young People's Group, Oak Bay United Church Men's Club, Victoria Rotary Club, Municipal Officers' Association, International Milk Board, Victoria Lions Club, Victoria Gyro Club, Victoria Registered Nurses' Association, Victoria Business and Professional Women's Club, Victoria Kiwanis Club, St. Michael's School, Victoria Musical Arts Association (two shows), Craigflower Parent-Teacher Association, Canadian Pacific Railway Veterans' Association, Entomological Society of Canada and Entomological Society of British Columbia (joint meeting), South Park Parent-Teacher Association, Victoria Sixty-Up Club, George Jay Home and School Club, Oak Bay Kiwanis, Pacific Northwest Bird and Mammal Society (Vancouver), Langford and District Lions Club, and Ballard Church Group (from Seattle).

On April 2nd Dr. Carl, Mr. Duff, and Mr. Gordon Fields of Victoria College took part in a panel broadcast from a local radio station on the subject "Let's Look at Museums," under the chairmanship of Robert Wallace, Director, Evening Division, Victoria College.

On September 9th Mr. Duff contributed a brief account of the totem-poles on the Queen Charlotte Islands on C.B.C. "News Round-up."

School Loan Material

A number of mounted small mammals and various other specimens no longer of use as exhibition material were turned over to the Audio-Visual Branch of the Greater Victoria School Board for possible use in school museums.

Miss Newton has continued colouring photographic copies of dioramas depicting Indian life, which are being assembled for circulation among the schools of the Province.

ATTENDANCE

The number of visitors to the Museum during 1953 is summarized as follows:—

	Registered	Estimated
January	1,255	1,667
February	2,550	3,409
March	4,686	6,248
April	2,030	2,707
May	2,738	3,650
June	6,462	8,582
July	11,949	15,932
August	11,764	15,685
September	5,230	6,973
October	1,986	2,648
November	1,085	1,146
December	692	922
Totals	52,427	69,569

In addition to these visitors, there were 3,691 children who attended the Saturday morning film programmes, 30 school classes, 24 meetings of Junior Naturalist classes, 2,225 persons who attended the Sunday afternoon programmes in February and March, 3 Brownie groups, 1 church group from Seattle, and 285 persons attending "open house" evening in March, making an estimated grand total of 77,252.

The attendance record for the month of July has been broken down by Mr. Maxwell as follows:—

Residence	Registration	Residence	Registration
British Columbia	1,994	Washington	1,837
Alberta	623	Oregon	1,163
Saskatchewan	385	California	2,468
Manitoba	392	Other States	2,277
Ontario	445	Alaska	10
Quebec	80	Great Britain	109
New Brunswick	21	Other countries	105
Nova Scotia	30		
Prince Edward Island	6	Total	7,969
Newfoundland	4		
		Grand total	11,949
Total	3,980		

The sum of $498.74, collected by the Solarium donation-box during the year, was turned over to the Queen Alexandra Fund for Crippled Children.

BUILDING MAINTENANCE AND EQUIPMENT

An experimental innovation which has proved to be a success was the installation of an automatic record-changer and high-fidelity amplifier to supply background music to the public galleries. The effect has been to dispel the false feeling for the need of silence which one usually experiences in libraries, art galleries, museums, and similar public buildings. Many favourable comments have been received since music was introduced early in the summer season.

During the year venetian blinds were installed on the windows of the main floor, permitting a much more efficient control of daylight.

In the attic storage-rooms four new cases for bird-skins and three vermin-proof boxes for insect collections were added in 1953. A storage-case of glass-topped drawers was also purchased to house some of the named insects in the study collection.

STAFF CHANGES

On August 31st George A. Hardy retired as Botanist on the Museum staff after having served in this capacity since 1941. Previous to this time he had been associated with the Museum from 1924 to 1928 as Assistant Biologist.

With the retirement of Mr. Hardy the Museum lost the services of a botanist, an entomologist, and an all-round naturalist, for he proved himself competent in many fields. While with us he added greatly to both the botanical and entomological collections and maintained them in good order.

In addition to these duties and to the multitudinous demands made upon persons in small museums, he found time to conduct research upon the life-histories of many local moths and to report his findings in scientific papers. With more leisure, now he is able to make such pursuits a full-time hobby.

To carry on the work in the botanical department, William A. Hubbard was appointed to the staff in September. A graduate of the University of Saskatchewan and the Utah State Agricultural College and a former research-worker of the Federal Range Station at Manyberries, Alta., Mr. Hubbard brings with him a grounding in technical knowledge combined with practical field experience. We are pleased, indeed, in having him associated with us.

Fenwick Lansdowne served as student assistant during the summer, while John Moffat acted as relief attendant.

OBITUARIES

We regretfully record here the death of A. R. Whittemore, nationally known conservationist, who passed away suddenly on March 19th while visiting in Victoria. As editor of Canadian Nature magazine he had accomplished much in fostering a true appreciation of nature; the publication continues as a memorial to his work.

We also regretfully note here the death on October 12th of the Honourable Tilly Jean Rolston, Minister of Education since August 1st, 1952.

REPORT OF THE BOTANIST AND ENTOMOLOGIST

This covers the period from January 1st to August 31st, 1953, when the holder of this office was retired on reaching the statutory age limit.

BOTANY

The number of plants accessioned amounted to 1,660; many of these were acquired during previous years, but due to lack of readily accessible storage they had not been checked in detail.

As in previous years, Mrs. S. Davies has been responsible for the work of accessioning, mounting, cataloguing, and shelving, in addition to the general office routine. This left the Botanist more time to devote to identification and to answering inquiries, which have been numerous and have covered a wide range of subjects. A rough tally of such inquiries amounted to 409, though during the peak of the season many were not tabulated.

The seasonable exhibit of wild flowers has continued to be a source of profit and pleasure to the public interested in a ready method of identification and information concerning the commoner and more obvious species of plants. This is a twelve-month service dealing with the flowering plants in spring and summer, their fruits in the fall, and evergreen trees and shrubs during the winter season. Occasionally special exhibits of weeds, edible plants, or habitat association of plants are shown as opportunity offers or suggests.

To keep this exhibit going, periodic field-trips to places easily reached from the Museum were undertaken. A short visit was made to the Forbidden Plateau area for a study of the natural history in the neighbourhood of the lodge at the 2,000- to 3,000-foot level. Several day or half-day excursions were made to points on Southern Vancouver Island.

The services of the Botanist were requested from time to time for talks, demonstrations, and lectures. This included two lectures at the Summer School, a talk to the boys at St. Michael's School, lantern exhibits of wild flowers to various clubs and societies, and so forth. The Botanist also gave a series of twelve lectures on the wild flowers of Vancouver Island, under the auspices of Victoria College.

ENTOMOLOGY

The accumulation of specimens has continued apace, keeping the Entomologist busy to find accommodation for them. With the thousands of insects under his care, storage has been one of the major difficulties. This situation is now well in hand, since the inauguration of a policy of a progressive-unit programme, whereby a standard set of cabinet drawers in twelve each is being added to each year. Eventually the collections will all be housed in a convenient and uniform series, and any insect referable at a moment's notice.

The Entomologist has been constantly consulted in matters pertaining to our common insects, whether useful or injurious. Much time has been saved since the issuance of a leaflet showing a drawing made in life-like manner by Frank Beebe and accompanied by a brief description of the more common insects that have proved to be, over the years, of more than ordinary interest to the public.

Mrs. Davies has, in addition to her botanical responsibilities, rendered valuable help in the organization of the insect-cabinets and, with the help of Jerry Maxwell, has lined all the drawers with cork and paper, all ready for use.

The Entomologist has continued his researches into the life of various lepidoptera. Four papers have been submitted for publication by the Entomological Society of British Columbia.

In August of this year Mr. Hardy retired from the Museum staff, to be replaced by William A. Hubbard. Hence the report is more or less in two sections—namely, January 1st to August 31st and September 1st to December 31st. Mr. Hardy, whose excellent knowledge of all phases of natural history is well known, has compiled the entire section on entomology.

During the latter part of 1953 several trips were made by the new Botanist to parts of the southern tip of Vancouver Island to study the typical vegetation of the region, and in September a two-week field-trip was made to Wells Gray Park with other tech-

nical members of the Museum staff. This was a preliminary survey to obtain a general knowledge of the area with the intent that a more-detailed survey might be made at a later date. The area is part of the Columbia or rain forest. The major dominants of the association are Engelmann spruce (*Picea engelmanni*), western red cedar (*Thuja plicata*), Douglas fir (*Pseudotsuga taxifolia*), hemlock (*Tsuga heterophylla*), and balsam (*Abies lasiocarpa*). As most of the plants in the area were well past the flowering stage, very little collecting was done.

Work has been started on a new handbook, "The Known Grasses of British Columbia." This will be illustrated by Mr. Beebe, of the Museum staff.

The seasonal wild-flower case was maintained until the end of November, but has been replaced by a number of cut sections of our native trees with some of the foliage of the conifers.

The majority of the inquiries brought into the botanical office since the beginning of September were for the identification of mushrooms; this seems to have been an exceptional year for them, and inquiries have numbered over sixty. Others included botany, sixty-seven; entomology, eight; and miscellaneous, twenty-one. This is only an approximate check.

There have been 145 plants identified and mounted. These have not been filed in the herbarium for lack of space.

Specimen examples of the genus Rosa were returned to the Museum by Dr. T. Taylor, of the University of British Columbia, after a study of the material had been made by Mr. Lewis.

A talk supplemented with fifty coloured slides was given to the Victoria Branch of the Agricultural Institute of Canada.

REPORT OF THE BIOLOGIST

Field work planned for the summer of 1953 was greatly curtailed due to circumstances beyond our control. The programme of zoological exploration along the west coast of Vancouver Island was again delayed. A preliminary examination of Wells Gray Park was undertaken in September with a view to adding the area to the Museum's agenda of regional studies in birds, mammals, and plants.

In January the Museum Biologist accompanied Don Robinson, regional game biologist, in an investigation of the elk in the vicinity of the Nanaimo Lakes, where logging operations are beginning to encroach upon the winter range of those animals. Two specimens were secured for the Provincial mammal collection. In April a trip was made to the whaling-station at Coal Harbour, where a grey whale was skeletonized for the Provincial mammal collection. This specimen is stored at Coal Harbour to weather.

Investigations instituted two years ago at Oak Bay with regard to speciation in coastal white-footed mice were continued this year. A record on the progress of this research follows this report.

When possible, one day per week was allocated to field work on Vancouver Island in order to keep a record of conditions and movements of local birds and mammals, and to collect specimens. The notes accruing during the past year have been indexed and will be included in Volume II of the Museum's three-year field-journal series. Volume I was completed and bound last year.

One occasional paper and several lesser publications were completed this year and have appeared at various sources (*see* Director's report). The British Columbia bird-booklet programme initiated last year was continued. To date eighty-four species are written up and have appeared in a local newspaper as weekly natural-history features. Sufficient material has now accumulated to publish at least five illustrated booklets in this series.

The manuscript of the "Mammals of British Columbia" is completed in rough draft; keys to the orders, families, and species of mammals are completed, and cuts of each mammal have been made. This large project is, of necessity, a slow process, as both senior author, Dr. McTaggart Cowan, and the Museum Biologist are subject to continued interruptions through pressure of other duties. However, it is hoped the book will appear in print next year.

Routine curatorial activities dealing with nearly 16,000 scientific-study skins of birds and mammals, specimen preparation, preparation and rearrangement of exhibits, cataloguing and indexing of material, specimen identification, lecturing, research, writing, and the host of minor activities associated with museum work, combined with the field activities, completely utilized the Biologist's time during 1953.

We wish to acknowledge the continued voluntary co-operation of the many citizens of this Province who contribute annually to our biological collection and knowledge, especially members of the Victoria branch of the Game Commission, Inspector Stevenson, Game Wardens Joseph Jones and R. Sinclair, and Don Kiers; Game Warden W. Webb and Constable D. Drapper, R.C.M.P., of the Albernis; Bruce Irving, George Hillier, Vince Madden, and the late Bill Hillier, of Carmanah Point and Ucluelet; Bert Robinson, of Atnarko; Len Newbigging, of the Greater Victoria Water Board; Don Robinson, of the British Columbia Game Commission at Nanaimo; R. H. Mackay, of the Canada Wildlife Service; Gordon Pike and F. H. J. Taylor, of the Pacific Biological Station, Nanaimo, and Superintendent Cowie and staff of Coal Harbour whaling-station; and many others whom we may have failed to mention here.

RESEARCH IN SPECIATION IN COASTAL WHITE-FOOTED MICE

(Report of Progress in 1953)

This research began in 1951, was continued in 1952–53 (*see* British Columbia Provincial Museum Annual Report for 1952, pp. 17–18).

Continued investigations on Strongtide Island indicate that the introduction of *Peromyscus* to that island was a failure. Forty-eight live-trap nights failed to secure any mice. Close examination for droppings and evidence of feeding activity revealed no sign whatsoever during the months of January and February. The island was revisited from time to time during the summer months, and a final examination was made in November of this year; no evidence of *Peromyscus* was found.

Vegetation on this island is almost completely denuded by domestic rabbits which were introduced some years ago, and it is highly probable that insufficient food and cover exists for other small mammals. The island has been written off as a unit in this work.

Chain Island has not been live-trapped to determine success of the introduction there. However, a very close scrutiny of the undercover was made from time to time throughout the year by Mr. Hardy and the Museum Biologist. We found no evidence of cutting, runways, or droppings. It is believed that the family of young mice introduced there succumbed. If this is verified by the pending live-trap programme, a pair of meadow mice (*Microtus townsendi*) shall be released this spring. Two of these animals are now in captivity at the Museum.

Investigations and information received from residents on South Trial Island indicate an unsuccessful introduction there. Mr. Hardy and the Museum Biologist could find no evidence of droppings or cuttings on the island, and Mr. Evans, the light-keeper, has seen no mice, nor their sign, about his buildings. In view of the ample evidence present on North Trial Island, we are fairly certain that *Peromyscus* are not reproducing on this island, although it is possible one or two of the same sex may have survived. A complete programme of snap-trapping and an elapse of considerable time must ensue before a new introduction is made, unless *Microtus* are utilized.

North Trial Island is now overrun by *Peromyscus*. Runways and cuttings of *Elymus* from which the seeds had been removed are in such evidence that live-trapping is unnecessary on this island. A population is well established.

The Chatham Isles (Front and Back) now have well-established populations of *Peromyscus,* as was indicated by the live-trapping last year. Residents on the isles report mice in their dwellings, and several have been trapped on Vantreight Island, where they apparently crossed over at low tide. Jack Savannah and native residents have taken *Peromyscus* in their dwellings.

Discovery Island has not been investigated by live-trapping or visual examination. However, reports from Mr. Pike, resident light-keeper, indicate that the introduction there has been successful; Mr. Pike recently destroyed eleven immature *Peromyscus* about his buildings. These reports will be verified by live-trapping later in the season.

The three small islets lying between Chatham and Discovery Islands, and upon which *Peromyscus* were introduced last March, have yet to be examined.

Mary Tod Island has been selected as the control unit. Two male and two female *Peromyscus maniculatus interdictus* taken at Wolf Lake in mid-March were released there in mid-June, 1953. From time to time additional stock will be released to maintain a continuous gene flow from Vancouver Island.

REPORT OF THE ANTHROPOLOGIST

ACTIVITIES

One major field-work project was undertaken during the year—a five-week visit to the Queen Charlotte Islands and Alert Bay. The purpose of the trip was to visit as many totem-pole villages as possible, examine and photograph the remaining poles, and investigate the possibility of salvaging and restoring them. Travelling alone, the Anthropologist spent three days at Alert Bay, then proceeded on to Queen Charlotte City. Through the kindness of the Federal Department of Fisheries, and especially Inspector Jack Bishop and the crew of M.V. "Agonus," he was able to visit three of the isolated and long-deserted villages south of Skidegate—Cumshewa (for one day), Skedans (for five days), and Tanoo (for five days). Visits were also made to the old sites on Maude Island and Lina Island. At each village the remaining poles were examined, and movies and still pictures were obtained. Several days were spent with Haida informants at Skidegate Mission. Information on ownership of the poles in the deserted villages was obtained; in addition, movies were taken of the carving of argillite totems.

It was discovered that in three of the deserted Haida villages there still exist six complete poles and sections of about two dozen others that are still in salvable condition. These are fine carvings, and are sound enough to be brought out if handled carefully; not to be used as outdoor displays, but to be kept indoors as museum exhibits and as originals from which replicas can later be made. Left where they are, these poles will rot away completely in a very few years.

On returning home, the Anthropologist edited the summer's films and made up a twenty-five-minute movie, "Totem Heritage." Showings of the movie, lectures, and newspaper and radio publicity have aroused much public interest in these Haida totem-poles, and at the year's end there was some promise that a programme of salvage could be arranged for the near future, drawing support from outside sources.

A continuing study of Coast Salish winter spirit dancing took the Anthropologist to many of the reserves between Duncan and Victoria during January, February, and March. Fourteen dances were attended, and several other trips were made to obtain background information. The field-notes obtained have since been rewritten and typed. Other field work has consisted of a few trips to local archæological sites.

Educational activities increased during the year. Twenty-nine school classes and three other children's groups (about 1,100 children) made supervised visits to the Museum and were given talks and demonstrations illustrated by Indian material from storage. Lectures and films on anthropological subjects were given to the following outside groups: Victoria Rotary Club, Victoria Kiwanis Club, Victoria Shrine Club, Lake Hill Women's Institute, Multiple Sclerosis Society, Oak Bay Kiwanis Club, Victoria White Cane Club, Oaklands Parent-Teacher Association, British Columbia Indian Arts and Welfare Society (twice), Colwood Community Club, Tillicum Parent-Teacher Association, Order of the Eastern Star, Coqualeetza Fellowship (Vancouver), and University of British Columbia Anthropology Club. Performances of Kwakiutl dances by Mungo Martin and his family were arranged for two groups—Victoria Lions Club and Margaret Jenkins Parent-Teacher Association. In April a trip was made to Alberni to show the Alberni Indians the Museum's movies of their recent dance revival and their performance on the occasion of the Royal visit in 1951.

Two publications were published and distributed—Anthropology in British Columbia, No. 3, and Anthropology in British Columbia, Memoir, No. 1, The Upper Stalo Indians. Two articles were written for the Sunday magazine section of the Victoria Colonist and one for Canadian Art magazine. Work was started on a study of early Indian censuses in British Columbia.

Two new exhibits were installed—one a display of prehistoric Indian stone sculpture and the other a general introduction to the native tribes of British Columbia. In addition, several other display-cases were reorganized and improved. Display work continues to be hampered by lack of storage and work space.

Closest possible relations have been maintained with other institutions. Several informal conferences on matters of joint interest have been held with colleagues at the University of British Columbia. In May the Anthropologist attended the Northwest Anthropological Conference in Pullman, Wash., and Moscow, Idaho. A Museum movie was shown, and a report on the anthropological work of the Museum was given.

Curatorial duties, such as the accession and care of collections, reception of visitors, and correspondence have made their usual demands on time. The photographic files and the library of recorded Kwakiutl songs have been expanded.

TOTEM-POLE RESTORATION PROGRAMME

Administration of the totem-pole restoration programme in Thunderbird Park throughout its second year has been the greatest single responsibility of the Anthropologist. The main accomplishment was the construction of a full-sized and authentic Kwakiutl Indian house as the "centre-piece" of the park. The opening ceremonies marking the completion of the new house brought the year to a spectacular close.

The Kwakiutl carvers, Mungo Martin and David Martin, worked steadily throughout the year. In addition, Robert J. Wallace, carpenter, was employed from May 12th to November 30th to assist in the construction of the house. Early in the year the carvers made a replica of a Bella Coola grave figure (Museum No. 2311) and, working indoors on the coldest days, carved three large masks for the Museum collection. Then they carved the four house-posts for the new house. In May the old Indian "house" was dismantled, the exhibits from it were set aside to await storage-space, and construction was started on the new house. Excavation and the construction of concrete footing for the walls and house-posts were costly and time-consuming preliminaries, but were necessary in the interests of permanence. By July the carved posts and adzed beams were in place, and the house began to take shape. Before each timber or plank was fitted into place, it was adzed by hand to give an authentic appearance, a process which consumed much time and energy. However, by the end of November the house was complete, the house-front painted, and the large original totem-pole which Mungo Martin

had carved in 1952 was ready to be erected. On November 30th this pole was raised in front of the house, and in a brief ceremony Mungo Martin announced the date for his house-opening potlatch.

It is a pleasure to report that generous donations were made by business firms and other Government departments. Flavelle Cedar Limited, of Port Moody, donated the greater part of the cedar house timbers and planks. MacMillan & Bloedel Limited continued to give the cedar logs for the carved poles. The Parks Branch of the British Columbia Forest Service co-operated by drawing up the detailed plans for the new house, and by making available the skilled services of Joseph St. Pierre to help with the adzing of the cedar planks and timbers. The Public Works Department made available another dwelling, into which David Martin and his family moved in June. The Photographic Branch, Department of Trade and Industry, did a steady and excellent job of obtaining still and movie records of the progress in the park and of the house-opening ceremonies. All this assistance from outside sources has allowed a better and more comprehensive programme than would otherwise have been possible.

Two main shortcomings have become apparent in the programme. The first is the lack of storage-space for the fine old original poles as they are taken down and for the canoes formerly on display. These are still exposed to weather and decay. There is planned a temporary storage-shed, which will serve as a stop-gap measure, but until permanent, dry indoor storage is provided, these irreplaceable specimens will continue to deteriorate. The second need is for more apprentice carvers. It is now apparent that on its present scale the programme can support only Mungo Martin and one younger apprentice. An original intention of the programme was to include a school for totem-carving to produce several skilled carvers for the future. Suitable young men are now available, but there are no funds to employ them.

THE NEW KWAKIUTL HOUSE

Kwakiutl houses of the nineteenth century were highly distinctive in construction. Often as large as 90 feet square, they had a massive central framework of carved posts and beams. The rest of the frame was of hand-hewn timbers, and to this were fitted the wide, adzed cedar wall and roof boards. Though all are basically similar, the houses differed in details. The crests carved on the house-posts, the painting (if any) on the house-front, and other details were inherited family property. No two houses were identical.

This new house is more than just an authentic Kwakiutl house. It is Mungo Martin's house, and bears on its house-posts hereditary crests of his family. It is a copy of a house built at Fort Rupert about a century ago by a chief whose position and name Mungo Martin has inherited and assumed—Naka'penkim. The house of old Chief Naka'penkim was twice as large, but its general style of construction and the carvings on the house-posts have been faithfully copied.

The house-posts bear the crests of three clans to which Naka'penkim was related by heredity or marriage. The mythical bird Ho'hoq on the back posts is the main crest of Gi'ksem clan of the Kwakiutl. The Grizzly Bear on both front and back posts is from the Wa'walibui clan of the same tribe. The Dsonoqua (mythical wild woman) on the front posts is a crest of Kwi'ksutenuk tribe of Tribune Channel. Each of these creatures was prominent in the origin story of the clan concerned.

The house of an important Kwakiutl family sometimes had a name, and this house has been given the name "Wa'waditla." This was one of two house names owned by old Naka'penkim, and Mungo Martin has chosen it for this house. It means "he orders them to come inside"—the chief in this house is so powerful that he can order anyone else to come in and be his servant.

Mungo Martin's new Kwakiutl house erected in Thunderbird Park.

Masked dance performed by Henry Hunt during opening ceremonies of Mungo Martin's house in Thunderbird Park, December 13th to 15th, 1953.

(Photos by B.C. Government Travel Bureau.)

It was customary for the tall heraldic pole in front of the house to display the crests of the clans to which the owner of the house belonged. The great pole in front of this house, however, was carved by Mungo Martin to represent all of the Kwakiutl tribes, and it shows crests of four of them—the Awaitla, Nakoaktok, and Nimpkish, as well as the Kwakiutl proper.

The top figure is Tsoona, the Thunderbird, a crest of the Tsoo'tsuna clan of the Awaitla tribe of Knight Inlet. The original ancestor of this clan was the Thunderbird, who became a man. Later his son returned to the sky to control thunder and lightning. Next is Wa'libui, the Grizzly Bear ancestor of the Wa'walibui clan of the Kwakiutl, and then a man, representing the same being after he became human. Next is the Beaver, Tsa'wa, an ancestor of the Nakoaktok tribe, Blunden Harbour. One clan of the Nimpkish tribe has the mythical giantess Dsonoqua as its crest. According to the clan tradition, one of two brothers once pursued the creature, who had been stealing drying fish. He eventually married her, and their son Tsee'lthwalakami, half man, half Dsonoqua, became the founder of the clan. The bottom figure on the totem-pole represents this tradition, and shows Dsonoqua holding her son.

Mungo Martin's huge painting on the front of the house serves to represent yet another of the two dozen Kwakiutl tribes—the Tenaktok of Knight Inlet. The design shows Tsee'akis, a supernatural sea-monster shaped like a bullhead (sculpin). This design was formerly painted on the front of the house of a chief called Kwaksistala, at the village of Kalokwis. This man was a distant "uncle" of Mungo Martin.

THE HOUSE-WARMING POTLATCH

It was customary among the Kwakiutl to mark the completion of a new house with great ceremonies. At such house-warmings, the owner usually explained his right to the carved and painted crests he had used by relating family traditions. He usually "potlatched" gifts to those who had helped build the house and those whom he had invited to attend. He often took the opportunity to bestow important inherited names upon members of his family, and to display the masked dances and other ceremonies which belonged to his family.

It was understood from the start that opening ceremonies along these lines, with Mungo Martin as host, would mark the completion of this house. Accordingly, plans were made for three days of ceremonies—December 14th, 15th, and 16th. Mungo Martin sent word to the Kwakiutl villages, and certain of the native singers and dancers came to assist—Daniel Cranmer, as interpreter; Tom Omhid, the tribal song-leader; George Scow, Charles Nowell, and others. Several rehearsals were held on the nights before the event.

The first day was for Indians only, so that Mungo Martin could perform his traditional ceremonies and display his masks and dances in a setting as authentic as possible. This was a completely authentic and serious affair, not a show for outsiders. It was attended by natives from most of the tribes of the Coast. The only whites allowed in were a few anthropologists from Victoria, Vancouver, and Seattle, who had been invited in accordance with Mr. Martin's wish to have the customs, songs, and speeches recorded. The people gathered at the house in the afternoon. Mourning songs for recently deceased relatives were sung first. Then the ceremony opening the winter dance season was performed: songs were sung, red cedar-bark head-bands were passed out, and down was placed on the heads of guests. A family ceremony—the cradle ceremony—was performed in honour of David Martin's daughter. Then feast songs were sung, and there was a break for dinner, which was provided near by in the Crystal Garden. In the evening many colourful masked dances were performed.

On the second day, in the afternoon, a special series of dances was staged for the press, movies, radio, news-reel, and television. Government photographers obtained

600 feet of colour movies. The television film was shown across Canada on C.B.C. television news telecasts. Photographs obtained by the press were published in numbers.

In the evening of the second day a two-hour programme of the ceremonies and dances was presented for an audience of over 200 local and Provincial Government officials, donors of materials, and other guests. Printed invitations and souvenir programmes were prepared for this event.

On the final day, in the afternoon and again in the evening, similar programmes were presented and the general public was invited. Public interest was intense, and although more than 300 were crowded into the house on each occasion, many had to be turned away. In the evening an estimated 1,500 were not able to get in. Because the Indian performers had to return to their homes, it was not possible to stage additional performances.

At a final ceremony in the presence of the Indians, the Anthropologist formally thanked Mungo Martin for building his house here in Thunderbird Park, and promised him that it would be well cared for in the future. He also thanked Mr. Martin for performing his family dances and ceremonies and allowing them to be recorded. Thanks were given also to the dancers who had come long distances to assist.

The ceremonies as a whole aroused tremendous interest in native culture and the preservation of native art and ceremonies. At the year's end several groups were attempting to promote an extension of Thunderbird Park and the construction of a new museum. The latter is long overdue, and it is to be hoped that these efforts are successful.

ACCESSIONS

During 1953 the following specimens were added to the catalogued collections (figures in parentheses indicate the total number on December 31st, 1953): Indian material, 591 (7,858); plants, 1,527 (24,468); mammals, 14 (5,803); birds, 33 (10,103); reptiles and amphibians, 4 (888); fishes, 4 (766).

ANTHROPOLOGICAL ACCESSIONS

The Claud Barlow Collection.—(Gift.) A collection of Interior Indian points, blades, drills, and scrapers, donated by C. Barlow, Victoria.

The B. K. Shade Collection.—(Gift.) A small collection of Haida and Nootkan Indian material, donated by B. K. Shade, Victoria.

The B. G. Hamilton Collection.—(Gift.) A large collection mainly of Kootenay and Huron Indian material, collected by the late Basil G. Hamilton, of Invermere, and presented to the Museum under the terms of the will of the late Dr. Mary E. Crawford.

The St. Roch Collection.—A collection of Eskimo implements collected by the R.C.M.P. vessel " St. Roch," and presented by Inspector H. A. Larson to the Provincial Archives, was transferred to the Museum.

HAIDA

Fish-hook. Jeannette C. Conn, Yarmouth, N.S.
Spruce-root baskets, four. In Shade collection.
Wooden spoon. In Shade collection.
Carved staff. In Shade collection.
Halibut-hooks, two. In Shade collection.
Stone hand-maul. J. Groven, Queen Charlotte City.
Tobacco-pestle. J. Groven, Queen Charlotte City.
Skull and jaw. Staff.
Stone hand-maul. Provincial Archives.

Stone hand-hammer. Provincial Archives.
Stone chopping-adze. Provincial Archives.
Paddles, four. Provincial Archives.
Argillite totem-pole. Mrs. B. Lukin Johnston, Victoria. (Purchase.)

TSIMSHIAN

Woven spruce-root basket. In Hamilton collection.
Halibut-hook. In Hamilton collection.

KWAKIUTL

Raven mask. Mungo Martin, Fort Rupert. (Purchase.)
Horn spoon. In Shade collection.
" Bird " rattle. R. W. Parsons, Victoria.
Stone club-head. In Hamilton collection.
Dance masks, three. Mungo Martin.

NOOTKA

Skull (fragmentary). Mrs. A. Hoskins, Bamfield.
Lance-blade. In Shade collection.
Wooden spoons, five. In Shade collection.
Small woven baskets, two. In Hamilton collection.

COAST SALISH

Slate knife. Department of Mines, per A. S. Brown.
Bone harpoon fragment. Mrs. G. G. Aitken, Milnes Landing.
Parts of two skeletons. Royal Canadian Mounted Police, Ganges.
Human skull. G. Cummings, Victoria.
Nephrite celt. Mrs. J. W. Anderson, Victoria.
Stone hammer. H. J. Lawrence, Galiano Island.
Slate knife, fragment. H. J. Lawrence, Galiano Island.
Nephrite celt. H. J. Lawrence, Galiano Island.
Antler wedge. H. J. Lawrence, Galiano Island.
Antler flaking-tools, three. H. J. Lawrence, Galiano Island.
Club-handle, whale-bone. H. J. Lawrence, Galiano Island.
Parts of skeleton. H. J. Lawrence, Galiano Island.
Worked antler fragments. H. J. Lawrence, Galiano Island.
Antler implements, two. H. J. Lawrence, Galiano Island.
Antler bark-lifter. H. J. Lawrence, Galiano Island.
Parts of skeleton. Warden Allen, Victoria.
Bone harpoon-point. Mrs. G. G. Aitken, Milnes Landing.
Celt. W. J. Davey, Milnes Landing.
Nephrite celt. Arthur Peake, Haney.
Skull. Royal Canadian Mounted Police, Victoria.
Nephrite celt. J. A. Heritage, Victoria.
Ground slate point. J. Bishop, Queen Charlotte City.
Stone hammers, two. Provincial Archives.
Stone artifacts, three. Qualicum. Mrs. R. I. Kellie, Victoria.
Stone blades, two. Melvin G. Briggs, Victoria.

INTERIOR SALISH

Perforated charm stones, three. Miss M. Pease, Hollyburn.
Nephrite celts, twenty. In Barlow collection.

Stone maul. In Barlow collection.
Arrow-smoothers, nine. In Barlow collection.
Antler wedges, two. In Barlow collection.
Dentalium-shells. In Barlow collection.
Chipped scrapers, blades, points, and drills (325). In Barlow collection.
Parts of skeleton. Royal Canadian Mounted Police, Oliver.
Coiled basket. In Hamilton collection.

KOOTENAY

Beaded deerskin leggings. In Hamilton collection.
Beaded papoose-carrier. In Hamilton collection.
Woman's buffalo-hide bag. In Hamilton collection.
Parfleches, cattle-hide, three. In Hamilton collection.
Pairs of antler saddle-horns, three. In Hamilton collection.
Saddles, three. In Hamilton collection.
Coiled baskets, two. In Hamilton collection.
Sample of roots used for baskets. In Hamilton collection.
Birch-bark dipper. In Hamilton collection.
Birch-bark basket. In Hamilton collection.
Horn ladle. In Hamilton collection.
Bone graining-tool. In Hamilton collection.
Bone awl in antler handle. In Hamilton collection.
Indian food. In Hamilton collection.
Stone mauls, grooved for haft, nine. In Hamilton collection.
Broken stone mauls, two. In Hamilton collection.
Stone pestles, five. In Hamilton collection.
Stone chopper. In Hamilton collection.
Nephrite celt. In Hamilton collection.
Iron knife-blade. In Hamilton collection.
Iron axe, badly rusted. In Hamilton collection.
Stone sinkers, seven. In Hamilton collection.
Obsidian points, two. In Hamilton collection.
Gaff. In Hamilton collection.
Stone charm. In Hamilton collection.
Chipped arrow-point. In Hamilton collection.
Antler club. In Hamilton collection.
Arrowshaft-smoothers, two. In Hamilton collection.
Leister (fish-spear). In Hamilton collection.
Chipped dart-point of Eden (Yuma) type. In Hamilton collection.
Scraper. In Hamilton collection.
Native pigment samples, two. In Hamilton collection.
Stone food-beater. Provincial Archives.

DÉNÉ

Chipped points and scrapers, six. H. A. Wickes, Victoria.
Stone celt fragment. Mrs. L. R. Harrison, Vancouver.
Beaded buckskin fire-bag. In Hamilton collection.
Beaded band. In Hamilton collection.
Beaded belt. In Hamilton collection.
Pair of moccasins, two. In Hamilton collection.
Chipped knives, eleven. C. P. Lyons, Victoria.

Huron (Ontario)

Tomahawks, three. In Hamilton collection.
Pottery bowl (in pieces). In Hamilton collection.
Stone adze. In Hamilton collection.
Stone celts, six. In Hamilton collection.
Piece of pipe-stem, stone pipe, pottery pipe fragments. In Hamilton collection.
Sheet copper arrow-head, arrow-head. In Hamilton collection.
Lacrosse stick. In Hamilton collection.

New Zealand

Jade adze. Mrs. W. C. Cryer, Victoria.

Eskimo

Bow and arrows in case. In Shade collection.
Stone lamp. In Hamilton collection.
Hunter's outfit. In St. Roch collection.
Soapstone cooking-pot. In St. Roch collection.
Soapstone lamps, four. In St. Roch collection.
Musk-ox horn ladle. In St. Roch collection.
Horn spoons, two. In St. Roch collection.
Whale-bone tray. In St. Roch collection.
Adze with slate blade. In St. Roch collection.
Adze with jade blade. In St. Roch collection.
Hafted jade hammer. In St. Roch collection.
Bone adze-handle. In St. Roch collection.
Jade adze-blade. In St. Roch collection.
Whaling-harpoons with slate blade, two. In St. Roch collection.
Slate blade for whale-harpoon. In St. Roch collection.
Sealing-harpoons with slate blades, two. In St. Roch collection.
Long bone harpoon. In St. Roch collection.
Short bone harpoon. In St. Roch collection.
Antler fish-spear prong. In St. Roch collection.
Gaff of bone and copper. In St. Roch collection.
Hafted slate knives, four. In St. Roch collection.
Blades for slate knives, three. In St. Roch collection.
Knife with bone handle. In St. Roch collection.
Pair of wooden snow-goggles. In St. Roch collection.
Pair of bone snow-goggles. In St. Roch collection.
Soapstone pipe. In St. Roch collection.
Carved bone drum-handle. In St. Roch collection.
Carved bone needle-case. In St. Roch collection.
Bone needle. In St. Roch collection.
Chipped points, four. In St. Roch collection.
Short bone-handled knife. In St. Roch collection.
Short scraper. In St. Roch collection.
Short drill. In St. Roch collection.
Lignite labrets, three. In St. Roch collection.
Ivory pendants, two. In St. Roch collection.
Lump of native copper. In St. Roch collection.
Petrified wood. In St. Roch collection.
Miscellaneous bone and ivory pieces. In St. Roch collection.

Miscellaneous

Several chipped arrow-heads, Saskatchewan. Mrs. A. S. Worthen, Victoria.
Selection of chipped artifacts from British Columbia. Miss Bessie Thomas, Victoria.

ZOOLOGICAL ACCESSIONS

Mammals

By gift—

Ralph Wherry, Victoria, two mink skeletons.
A. W. Vinson, Vanderhoof, head of a mouse.
British Columbia Game Department, Victoria, two cougar heads, one racoon.
A. Morod, Zeballos, eight marten skulls.
Art Colden, Kyuquot, one Stellar sea-lion skull.
E. G. Flesher, Phillips Arm, one collection of mammal skulls.
D. Leavens, Egmont, one mink skull.
Patsy Thomas, Victoria, one Baird's dolphin (found on beach).
John Newbigging, Esquimalt, three Townsend voles.
George Hillier, Ucluelet, one California sea-lion skull.
Mrs. E. C. Carson, Victoria, one mounted moose head.
G. D. Sprot, Victoria, one wolverine skin.
F. H. C. Taylor, Nanaimo, one porpoise skeleton.
Gordon Pike, Coal Harbour, one grey-whale skeleton.
L. Drummon, Quesnel, one fisher (by purchase).
J. A. Flett, Cobble Hill, one black rat.

By the staff 25

Birds

By gift—

Mrs. H. M. S. Bell, Victoria, one Cooper's hawk, one song-sparrow.
W. H. Turnbull, Victoria, one Cedar waxwing.
Col. S. Goode, Victoria, one song-sparrow.
Morris Jackson, Fanny Bay, one russet-backed thrush.
Mrs. J. W. Anderson, Victoria, one olive-sided flycatcher.
W. J. Banning, Victoria, one night-hawk, two horned owls, one screech owl, one Cooper's hawk.
J. Scarlet, weather ship "Stonehouse," Victoria, one black-footed albatross, one boreal petrel.
B. Irving, South Pender Island, one Bullock's oriole, one poorwill, one northern shrike.
Mr. Moore, Victoria, collection of mounted birds.
F. H. C. Taylor, Nanaimo, one pink-footed shearwater, one Pacific fulmar, two long-tailed jaegers, four pomarine jaegers, three skuas, one murre, one boreal petrel, one tufted puffin.
Mr. Stevenson, Victoria, one mounted hawk and collection of mounted birds.
T. L. Thacker, Hope, one sora rail.
T. Turner, Victoria, one osprey.
P. Walker, Victoria, one blue heron.
J. J. Woods, Saanichton, one peregrine falcon.
Fen Lansdowne, Victoria, one northern fulmar.
Ted White, Victoria, one golden-crowned sparrow.
Judy Carl, Victoria, one varied thrush.
J. O. Clay, Victoria, one red phalarope.

Lionel Kirkham, Victoria, one lesser snow-goose.
Charles Estlin, Courtenay, one whistling swan.
Frank Beebe, Victoria, one Swainson hawk.
Alec Johnston, Victoria, one Peale's falcon, one golden-eye duck.
British Columbia Game Department, Victoria, one pigeon-hawk.
J. F. Rowe, Victoria, one red crossbill.
R. Fryer, Comox, one horned lark.
Hiscocks & Clearihue Limited, druggists, Victoria, one wandering albatross (head and wings).
Miss M. C. Milburn, Victoria, one Pacific fulmar.
John Dunn, Olalla, one golden eagle.

By the staff 21

Amphibians and Reptiles

By gift—
Henry Biles, Victoria, one alligator-lizard.
Miss Peggy Carl, Victoria, one western spotted frog.
Avery S. King, Penticton, one rattlesnake.

By the staff 1

Fish

By gift—
Kerry Beebe, Victoria, one chub.
Mrs. G. C. Carl, Victoria, one arrow goby.
H. Cotterill, Victoria, sculpin-egg mass.
Robert Ellis, Victoria, one wolf-fish.
A. Gorie, Victoria, sculpin-egg mass.
A. H. Hacklett, Victoria, one crucifix fish skeleton.
G. D. Heritage, Powell River, one stickleback.
R. A. Prince, Victoria, one prow-fish.

Invertebrates

By gift—
Miss Diane Andrews, Victoria, one California prionus grub.
James W. Arden, Sooke, one prawn.
Miss Dorothy Carson, Victoria, one California prionus.
Mrs. P. Corry, Victoria, one crab-spider.
W. Fletcher, Victoria, one banded borer.
Miss C. Gillespie, Victoria, one "hair snake."
F. Goertz, Osoyoos, one mantispid.
Carol Harris and Judy Hunt, Victoria, one king-crab.
Mrs. I. Jonas, Nanaimo, one sphinx-moth.
G. Laurence, Victoria, one striped cockchafer.
Miss Sonja Mordby, Victoria, one banded argiope.
Mrs. M. G. Murray, Port Washington, one electric-light bug.
S. L. Neave, Kyuquot, one crinoid.
E. O. Olson, Victoria, one California prionus.
A. Peake, Haney, one fossil ammonite.
Mrs. M. G. Sember, Victoria, one shell of turtle-crab.
Mrs. W. E. Sims, Victoria, one caterpillar.
F. C. Smith, Victoria, one scorpion.
T. L. Thacker, Hope, mollusc specimen.

P. Walker, Colquitz, one spider (*Aranea trifolium*).
N. Webb, Lake Cowichan, collection of fairy-shrimps.

Palæontology

By gift—

Mrs. K. Aitkens, Victoria, four fossils and four concretions.
R. K. Bradley, Westview, one fossil.
Miss Georgina Crewe, Victoria, one fossil.
H. R. Erb, Victoria, one fossil.
William Higgs, Nanaimo, two fossils.
Mrs. R. I. Kellie, Qualicum, fossilized portion of coral colony.
A. J. Ostrem, Fort St. James, fossil samples from Frances Lake.
A. Peake, Haney, one fossil.

Miscellaneous

By gift—

J. H. Scarlett, Victoria, 50 feet of movie film.
Mrs. E. M. Simson, Victoria, on behalf of the late Thomas Stanley Simson, twenty-eight books and one magnifying-lens.

COLLECTOR'S ITEMS FROM COMMERCIAL FISHING-GEAR

By Lela M. Griffith, Egmont, B.C.

To us commercial fishing has always had an important by-product—molluscs and other forms of life from deep water. Our shell collection was actually started, not with shells gathered on the beach and not even with molluscs, but with two species of brachiopods snagged on trolling-gear some years ago. They were taken in Sechelt Inlet and brought home as curiosities, later to be identified as *Laqueus jeffreysi,* a smooth round brownish lamp-shell, and *Terebratalia transversa,* quite heavily ribbed and of a reddish colour, each attached to a sponge by a peduncle or stalk. We still have them, and to this modest beginning have added from time to time all that our own gear brought up and all that we could persuade anyone else to save of deep-water material.

It is not quite accurate to say the shells were snagged on the gear, although once in a while a scallop closes on a hook. What the hook catches as it is hauled along the bottom is much more likely to be a sponge or bryozoan which, in turn, often brings up the rock to which it adheres, and either the sponge or the rock may carry a variety of shells and other small creatures. The population of one more or less typical rock consisted of the following assortment: Four bryozoans of three different species, one snake's head lamp-shell (*Terebratulina unguicula*), one brachiopod (*Platidea aneminoides*), two ridged clams (*Humilaria kennerlyi*), one horse-mussel (*Modiolus modiolus*), three checked hairy-shells (*Trichotropis cancellata*), one *Lyonsia pugettensis,* and two corals (*Balanophyllia elegans*). These ranged in size from a 3-inch bryozoan to a *Platidea* no bigger than the head of a pin. Naturally a good many rocks and sponges are barren and not all types of fishing-gear have hooks, but each has contributed at one time or another something besides the commercial product for which it is used.

Aside from those already mentioned, we have had few shells of any value from trolling-gear but did pick off kelp, dragged from 6 fathoms near Grant Reef, a tiny pearly *Cypræolina pyriformis,* a snail shaped like an infinitesimal cowry, and one *Clinocardium californiense,* a small cockle with more and finer ribs than the common basket-cockle.

Seines and gill-nets with their too-large mesh are poor equipment for collecting shells, but sometimes they bring up mud and debris, embedded in which there may be specimens. From such a source have come some interesting species, particularly small round mussels (*Modiolaria nigra obesus*), each in its protecting gob of jelly. These came up in a gill-net in Rivers Inlet. Also from a gill-net but off the Point Grey flats we obtained a fine little moon-snail (*Polinices pallida*) and a bent-nosed clam (*Macoma nasuta*), and in Johnstone Strait a Chinese-hat snail (*Calyptræa fastigiata*), like a conical limpet outside but with a spiral deck inside. These were attached to kelp holdfasts which came aboard in the net. Here in Jervis Inlet a gill-net inconveniently sank when its floats water-logged, but to make up for the trouble it caused it brought up our first *Cidarina cidaris,* pearly little turbans with spiral rows of beading, and several more of the brown lamp-shells (*Laqueus jeffreysi*).

Seines have not yielded much—one hairy brown horse-mussel (*Modiolus modiolus*) and, from Deserted Bay in Jervis Inlet, a number of long slim jack-knife clams (*Solen sicarius*).

Last year a friend gave us a fine big scallop (*Chlamys caurina*), the only perfect specimen we have of this species. Her son brought it home after working on a bottom-dragger in Hecate Strait several years ago. These shells, much sought after by collectors, are commonly taken, I believe, in trawls, but, unfortunately, we do not know nor have we been able to contact any trawlers.

Shrimp-traps "catch" no bivalves, but snails are sometimes attracted by the smell of the bait intended for the shrimps. From traps put down in a depth of nearly 100 fathoms in the vicinity of Cortez Island, we had a donation of nine specimens of *Neptunea*

phœnicia, large handsome brown snails with distinct spiral ribs, and from the same source, but taken in Bute Inlet, we obtained one huge ridged whelk (*Neptunea liratus*), bigger and handsomer even than its aforementioned cousin. Shrimp-traps in 70 fathoms of water off Shannon Creek in Sechelt Inlet invariably bring up a quantity of *Colus morditus* and *C. jordani,* more or less evenly divided as to numbers. They are smooth brown snails, 1 to 1½ inches, usually partially covered with black growth and rather difficult to tell apart. With them once was the larger more distinctive *Colus herendeeni,* with fine spiral lines and a thin olive-brown periostracum. After these aristocrats the take in Jervis Inlet has not been very spectacular, mostly the large hairy Oregon tritons (*Argobuccinum oregonense*) with sadly worn apexes from being dragged by their owners over rocky bottom, the lowly black spindle-shells (*Searlesia dira*), and a few all-too-common dog-whelks (*Nassarius mendicus*).

Although there is no commercial crab-fishing in this inlet, we have tried crab-traps for snails but with very indifferent success. We are too near the Skookumchuck and the strong tide fouls the buoy-line, and finally it breaks, thereby losing the trap. The odd times it came safely up we got mostly the same old spindle-shells and dog-whelks but did secure one prize, the lovely little spotted top-shell (*Calliostoma variegatum*) and one *Puncturella cuculata,* a limpet-like shell with sharp ridges and a slit at the apex of the cone.

Cod hand-lines have supplied us with several scallops each year. Three kinds are in the inlet—*Chlamys hindsi, C. hindsi kincaidi,* and *C. hericius*—all in varying shades of pink and all very beautiful. The first two are about 2 to 2½ inches across, the last mentioned a bit larger and more vividly coloured, with coarse spiny ribs. These are swimming shell-fish, and when a line drags between the valves, they immediately snap shut instead of prudently backing off.

Sometimes from the stomachs of the cod we get the ribbed top-shell (*Calliostoma costatum*), the outside layer of the shell dissolved away by the action of the stomach acid, leaving the pretty pink and blue pearl exposed. Once, in an urn-shaped sponge stuck on the hook, we found a young octopus (*Polypus hongkongensis*).

The set-line or long-line has been by far the most prolific producer of shells, etc. It may be from 100 fathoms to a mile in length, lies on the bottom with short gangings at regular intervals, each bearing a hook—perhaps a thousand on a mile of line. It is lifted by a buoy-line and drags a bit on the sand or rock as it is pulled, the empty hooks catching this and that as they go by. At least it used to work that way. For two or three years now there has been no market for dogfish-livers, and hence, to our intense regret, no set-line fishing. However, we have had, over the years, a prodigious haul.

Many of the species from other gear also showed up from the set-line. A few each of *Cidarina cidaris, Calliostoma variegatum, Puncturella cuculata, Colus morditus* and *C. jordani, Modiolus modiolus;* one only *Colus herendeeni;* and one *Polypus hongkongensis,* the latter from the stomach of a dogfish. A good many each of *Argobuccinum oregonense, Searlesia dira, Nassarius mendicus, Laqueus jeffreysi,* and about a dozen *Neptunea phœnicia.* Always a fair supply of the three scallops *Chlamys hindsi, C. hindsi kincaidi,* and *C. hericius*—one notable contribution of nine specimens; seven *C. h. kincaidi* and two *C. hericius;* these last two from the stomach of a large red anemone—all taken at the same time from approximately the same spot.

The list of those peculiar to the set-line is quite impressive. A tiny brown limpet making its home on kelp (*Acmea instabilis*); *Lepeta concentrica,* small, whitish, and limpet-like with faint striations and the periostracum eroded away at the apex; *Solariella peramabilis,* a pearly turban looking like a small tube wound round leaving an open umbilicus; the common little checkered littorine (*Littorina scutulata*); the white slipper-shell (*Crepidula nivea*), oval, clinging flatly, pearly inside with a deck squarely across one end; *Melanella comoxensis,* tiny pink-spired snails (our specimens were picked off an old shoe); *Ocinebra fraseri,* a knobby little fellow with a sort of basket-work sculpture;

Trophon tenuisculptus, similar to the last but longer and slimmer with an elongated and twisted canal; *Olivella boetica,* the little olive, purplish and porcelain-like, one only taken off Scuttle Bay; *Siphonaria thersites,* looking like a brown horn-limpet but with a slight groove running from the vertex to the margin inside; *Loligo opalescens,* the slim squid with its opalescent hues.

Bivalves, too, are well represented. Two thin white transparent scallops about the size of a finger-nail—*Pecten vancouverensis* and *P. randolphi,* the former with a few roughish lines and the latter smooth; two little brown clams, one with heavy concentric ridges (*Astarte alaskensis*) and one with lighter broken ribs (*Astarte esquimalti*); small yellowish Kelly shells (*Kellia suborbicularis*), two juveniles only we have; *Panomya ampla,* a heavy irregular shell, chalky white in colour; *Hiatella gallicana,* an oblong misshapen little clam found burrowed into sponges and in crevices in rocks; the white ridged clam (*Humilaria kennerlyi*); *Lyonsia pugettensis,* small, silvery, and delicate.

To these we add two brachiopods—one flat, round, brown, and of very minute dimensions (*Platidea aneminoides*), the little lamp-shell; the other about an inch long, white with fine lines radiating from the area of the beaks (*Terebratulina unguicula*), the snake's head lamp-shell.

In addition to molluscs and brachiopods, the set-lines and cod-lines pick up other items which may be of interest. First, two protozoa hardly large enough to see—a round one looking as if it were made of overlapping plates (*Foraminifera discorbis*) and a slim curved one (*Foraminifera dentalina*).

In the coelenterates are the very pretty, hard, little pink "corals" (*Diaperœcia vancouverensis*); two gorgonian corals, the large spreading fan-shaped structure, soft and brittle, of a gorgeous red colour (*Euplexora marki*); and the yellow "huckleberry-bush," equally large but strong and shrubby, sometimes with a trunk like a young tree, a species of *Eunicea.* Then there is our only true coral, *Balanophyllia elegans,* called the cup-coral, quite small, round, and cup-shaped, of a vivid orange hue. Two sea-pens are fairly common. *Ptilosarcus quadrangularis* is up to a foot long, the "stem" thick and fleshy, polyps on leaf-like attachments along more than half the length, all bright reddish-orange. *Stylatula elongata* is similar in structure but much slimmer, up to 6 feet long and a pale ivory colour.

The most attractive echinoderm is the pale lacy basket-star (*Gorgonocephalus caryi*) with a very small body but surrounded by many waving arms, the original five each branched twelve times. Another odd starfish is *Ceramaster arcticus,* also pale but flat and almost a perfect pentagon, seemingly with no arms at all. From 400 fathoms come heart-urchins (*Lovenia cordiformis*), very spiny and more fragile than the shallow-water sea-urchins.

A few crustaceans are worthy of note: the squat lobster (*Munida quadrispina*) with his short red body and long red legs, not quite a lobster and not quite a crab; the great warty box-crab (*Lopholithodes foraminatus*), which folds so that his shelly parts fit tightly around openings between the front legs, permitting passage in and out of water currents; the equally large and very similar king-crab (*Lopholithodes mandti*), distinguished by the lack of the foramen. Strangely enough we have taken box-crabs in all sizes but only large king-crabs. Not off the fishing-gear but on kelp lifted by the anchor, we collected two choice species—from Baker Pass a pair of wee white gem-clams (*Gemma gemma*) and from Rivers Inlet one fat brown chink-snail (*Lacuna porrecta*).

So much for what we have. The fishing season is on again and we anticipate what it will bring, perhaps not much but always the chance of something strange. Perhaps there will be set-line fishing again one day. Perhaps we shall meet a co-operative trawler. And who knows? Perhaps this article will inspire some fisherman to save those oddities that come up on his gear. Of course, there is, too, the dredge, but that is another story.

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