

KERGUELEN'S CABBAGE



The Kerguelen cabbage is the most celebrated plant from that minuscule portion of our planet known as the Kerguelen Archipelago or, more graphically, as Desolation Land. Kerguelen, one of the few island-groups in the bleak vastness of the subantarctic Indian Ocean, is midway between South Africa and Australia and about 1,000 miles north of Antarctica. Its islands, which are of volcanic origin, are scattered over a distance of about 125 miles from north to south and 90 miles from east to west. The archipelago consists of a main island—Kerguelen Island—and some 400 smaller ones, most of which are mere islets. Kerguelen Island is about 85 miles in greatest length and width, but no part of the interior is more than 15 miles from the sea because the coast on all sides abounds in large inlets and long, narrow fiords. The loftiest peak is Mount Ross, whose fog-shrouded summit reaches 6,400 feet. The higher portions of the island

lashing the surface into foam, and hurling the water to and fro with convulsive violence. Many a vessel, thought to be snug in a sheltered harbor, has been driven aground by these unexpected winds. Along the seashore the temperature is remarkably equable. The thermometer reading seldom exceeds 70° in summer, and is seldom less than 32° in winter. Kerguelen is a land of almost incessant precipitation. Rain and snow fall at any and all times during the year, and fogs and mists are common.

The archipelago was named after an 18th century French explorer, Yves Joseph de Kerguelen-Tremarec, who headed an expedition seeking the *Terra Australis Incognita*—the continent that was rumored to exist in the southern Indian Ocean. On the 12th of February, 1772, Kerguelen-Tremarec and his men sighted Kerguelen. They claimed it for France and then sailed home. Kerguelen-Tremarec was fully convinced

are permanently ice-capped. From Cook Calotte, the largest ice-field, rivers of ice descend to the sea, forming icebergs at their leading edges.

The climate of Kerguelen is tempestuous, chilly, and wet. A continual procession of turbulent winds sweeps over the archipelago from west to east. Strong gales also may suddenly volley down without warning from the highlands and plunge with great force upon the sea,

that he had discovered the southern continent, but his assertion was discredited. The following year he led another expedition to Kerguelen, from which he returned, it is said, convinced and disappointed that he had found only an island. The French then lost all interest in Kerguelen for about 120 years.

Towards the end of the 19th century the archipelago was viewed by European powers with growing interest, which

prompted the French government in 1893 to re-establish possession of the islands in the name of France. Commercial exploitation of Kerguelen was assigned to a private company, first for the extraction of whale oil and later for sheep raising. The sheep farm was abandoned during World War I, and the limited supply of whales ended the activity of the whale-processing plant in 1927. Kerguelen was then practically forgotten until World War II, when German planes were based there, drawing attention to the strategic value of the islands. In 1950 the French founded the first settlement on the archipelago.

Captain Cook explored Kerguelen in 1776. His surgeon, Mr. Anderson, a student of natural history, recorded these observations in December of that year:

"Perhaps no place, hitherto discovered in either hemisphere, under the same parallel of latitude, affords so scanty a field for the naturalist as this barren spot. The verdure, which appears when at a little distance from the shore, would flatter one with the expectation of meeting with some herbage; but in this we were much deceived. For on landing, we saw that this lively colour was occasioned only by one small plant [*Azorella selago*], not much unlike some sorts of saxifrage. . . . There is another plant, plentifully enough scattered about the boggy declivities, which grows to near the height of two feet, and not much unlike a small cabbage. . . . We ate [this plant] frequently raw . . ."

From the early 1800s until about 1870, sealers and whalers at Kerguelen carried on a hazardous, arduous, but presumably lucrative business boiling down penguins and elephant seals for their blubber, and hunting fur seals on the beaches and southern right-whales in the seas adjacent to the archipelago. The peak period of this depredation was about 1847, when as many as three hundred vessels were annually employed around those shores. The diminution of the fur seal, the elephant seal, and the right-whale to unprofitable numbers speedily reduced the carnage after 1850.

Kerguelen has been visited by a number of scientific expeditions and is, as a result, far from being scientifically unknown. Much of the detailed work there, however, has been done in the coastal regions. The interior of the main island and many of the smaller islands are quite unexplored because of difficulties of access presented by fiords,

lakes, bogs, and mud-holes.

Among the fauna of Kerguelen the insects are noteworthy because of the preponderance of forms that are wingless or possess only rudimentary wings and so cannot fly. The archipelago's only wild land mammals are introduced rabbits, mice, rats, sheep, and dogs. Of "land birds" Kerguelen has only two, a small duck and a sheathbill, but it is, in contrast, a rendezvous to legions of sea birds, including penguins, albatrosses, petrels, gulls, terns, cormorants, and skuas. The king penguin is now scarce although these birds, along with rockhopper and gentoo penguins, are said to have existed in vast numbers there before toll was taken of them by exploiters of the 19th century. The reports of early navigators depicting the human-like mannerisms of Kerguelen's penguins gave the islands the name of the "Land of Little Men" and provided inspiration to Anatole France for his satirical novel, *Penguin Island*. No fresh-water fishes are known from Kerguelen even though lakes are common. The islands have long been a favored haunt of the elephant seal. During the first half of the 19th century these animals were almost exterminated there by sealers. After that, they seem to have increased until, at the beginning of the 20th century, they were again brought close to decimation. At present, they are on the increase once more. The fur seal, apparently never abundant on the archipelago, had become very rare by the end of the last century, but it still is found there, as is the leopard seal. In 1924, certain portions of Kerguelen and some of the other French subantarctic islands in the Indian Ocean were set aside by the French government as a national park in which the hunting of seals is forbidden.

Only thirty-three species of flowering plants, including three introduced weeds, are known from the archipelago. In addition, four ferns, two clubmosses, and numerous lichens, mosses, liverworts, and algae have been found there. No trees or large shrubs are to be seen. Indeed, no plant is taller than the cabbage, whose flower-stalk grows only as high as two or three feet. The most characteristic and conspicuous flowering plants are *Azorella selago*, which forms

dense mounds that from a distance resemble mossy boulders; *Acaena adscendens*, which has prostrate stems and dense heads of purplish flowers; and *Pringlea antiscorbutica*, the cabbage.

The Kerguelen cabbage grows from creeping, half-woody stems, sometimes five or six feet long and as many inches in diameter. Its large heads of leaves, as much as eighteen inches across, are so like those of the common garden cabbage that, as Dr. J. D. Hooker remarked in his *Flora Antarctica* (1847), if they were "growing in a garden with their namesakes in England they would not excite any particular attention." The outer leaves are loose, but the inner form a compact, white heart. The flowers are borne in dense, long, and narrow clusters that arise from the stem below the head. Some of the flowers have the four petals that are characteristic of other crucifers—members of the mustard family—but most have only one, two, or three petals, or even none.

In days now past, the cabbage was abundant throughout much of the archipelago. Now it is scarce because of destruction by rabbits that have become common since their introduction by a British expedition in 1874. Fortunately, these edacious rodents have not become established on all the islands. In areas where they are abundant, they have destroyed significant amounts of the vegetation cover, with the result that soil erosion is accelerated. Kerguelen cabbage grows not only on Desolation Land but also on three other island groups in the same region of the subantarctic Indian Ocean: Heard, Marion, and Crozet. An intractable wilding, the plant has never been cultivated successfully.

Dr. Hooker suggested that the cabbage is wind-pollinated and so is different from most other members of the mustard family, for which insect-pollination is the rule. In support of his suggestion he pointed out the frequent lack of petals—a major function of petals is to attract, by their showiness, pollinating insects—and the usual absence of nectar-secreting glands in cabbage flowers—such nectaries are characteristic of most crucifers. Also suggestive of wind-pollination is the pollen itself, which is said to be different from that of nearly

(Continued on page 8)

MEMBERS' NIGHT!



How is a scientist able to reconstruct a period in pre-history that occurred 240 million years ago? What Old and New World birds are fast becoming extinct? What role has botany played in the historic selection of the distinctive "setts," or patterns, used in the colorful tartan plaids that have become identifying symbols for the clans of Scotland?

If you are interested in finding the answers to these questions, you'll not want to miss Members' Night at the Museum on April 28 when these and many more scientific puzzles will be explained personally by the Museum's scientific staff and through interesting exhibits especially prepared for the occasion.

Highlighting Members' Night, 1961, is the premiere opening of one of the most outstanding exhibition halls in Museum history. Now being prepared under the direction of Dr. Roland Force, Curator of Oceanic Archaeology and Ethnology, the new Hall F displays a cultural panorama of the Polynesian and Micronesian areas of the South Pacific—Hawaii, the Palaus, the Marquesas, the Carolines, the Society Islands, the Cooks and Australs, Easter Island, Samoa, Tonga, the Marshalls, Fijis, Gilberts, and New Zealand.

The nucleus of the hall's exhibits is the famed Fuller Collection, the last and

finest private collection of rare, beautiful, and extremely valuable materials from the Pacific Isles. Assembled by Captain A. W. F. Fuller of London over a period of 64 years, the collection was acquired by the Museum in 1958.

On April 28, Members will also have an opportunity to preview another new hall now in process of construction. When completed, it will be probably the largest permanent exhibition hall in the world devoted solely to the display of primitive art. Comprising some 9,000 square feet of display area, it will feature approximately 300 art specimens of noteworthy aesthetic quality from primitive societies of Africa, Australia, Melanesia and Polynesia, and North and South America. These art objects are being selected by Mr. Phillip H. Lewis, the Museum's Curator of Primitive Art, from the Museum's vast archaeological and ethnological collections, totalling nearly half a million pieces.

It is such research collections—which are not on public display—in all of the Museum's four departments (anthropology, botany, geology, and zoology) that make possible its contributions to the scientific world. Basic research, the "life blood" of science, is continually in progress at Chicago Natural History Museum in offices, laboratories, and workshops

far removed from the exhibition areas. On April 28—in this once-a-year event—the entire scientific staff of the Museum will be on hand personally to explain for Museum Members various aspects of the research projects on which they are presently working.

Here are just a few of the things Members can expect to see in touring the Museum's research floors on April 28.

Anthropology (3rd Floor—Southeast)

In the Anthropology Workshop

On huge tables in this room will be assembled the primitive art objects that have been selected from the Museum's research collections and are now in process of being prepared for display in the new Hall of Primitive Art.

Geology (3rd Floor—Northwest)

In the Paleontology Laboratory

A collection of fossil fresh-water fauna that lived 240 million years ago—discovered last summer by Dr. Rainer Zangerl and Dr. Eugene Richardson in a black shale quarry in Indiana—will be arranged to illustrate various stages of research. Members may learn how a scientist is able to reconstruct a specific, delimited period of prehistoric time.

In the Division of Fossil Mammals

Members may view through the microscope humeri and toe bones thought to belong to a mole-like animal that lived in western United States 20 to 40 million years ago. The structural characteristics of this animal have been reconstructed by Museum scientists out of the "trash" often discarded by paleontologists as being too tiny and broken up to yield useful results.

In the Paleontology Workshop

Now being reconstructed for eventual public exhibition is the fossil skeleton of a duck-billed dinosaur (*Parasaurolophus*), which will stand 12–15 feet high when completed.

In the Division of Petrology

A demonstration will be given in the geochemistry laboratory on methods used in the chemical analysis of rocks.

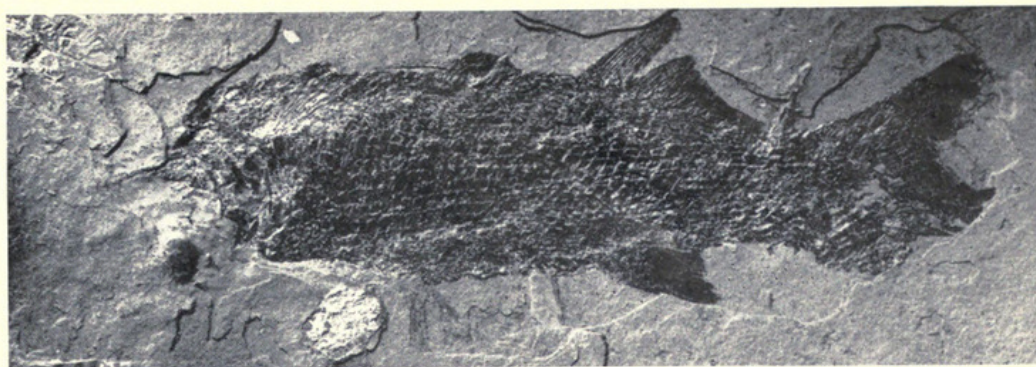
Botany (3rd Floor—Northeast)

In the Botany Library

The fascinating history of Scottish tar-

Right: *Palaeoniscoid* fish from Garrard Quarry, Indiana

Below: An Eskimo curlew, one of the "vanishing" birds featured in a special Members' Night exhibit



tans, traced all the way back to the botanical origins of each pattern in the glens of Scotland, will be colorfully portrayed in an unusual botanical exhibit prepared especially for Members' Night. Members will see how the distinctive tartan patterns used as a means of identifying the many Scottish clans owe their particular selection of colors to the character of the vegetation that grew in the areas where the respective clans had their beginnings—for it was from these local plants that the tartan dyes were made.

In the Plant Reproduction Laboratory

Demonstrations will be given on the processes involved in making the Museum's world-famous plant models.

In Botany Workroom No. 9

Lichens, an example in the plant world of co-operation between two dissimilar plants enabling the two, together, to live under conditions in which neither could exist alone, will be the subject of an interesting graphic display.

Zoology (3rd and 4th Floors)

In the Division of Lower Invertebrates (4th Floor—South)

Exquisite "gems of the Everglades"—part of the Winte and DeBoe collection of Florida tree snails recently acquired by the Museum—will be superimposed

on a large-scale map of Florida to show the color ranges and variations among the different populations of tree snails.

In the Department of Taxidermy (4th Floor—North)

A series of new exhibit screens entitled "What Is A Mammal?" will be seen in process of construction.

In the Division of Birds (3rd Floor—Southwest)

"Extinct and Vanishing Birds" is the subject of a display, selected from the Museum's collection of skins, of Old and New World birds that are fast becoming, or already are, extinct.

In the Division of Fishes (Ground Floor—Northeast)

An exhibit of fish jaws and teeth will show different types of dentition and how each type is adapted to the particular foods eaten by various fish species.

A new feature, introduced for the first time at this year's Members' Night, will be a Mexican market place, to be set up at the north end of Hall 2, on the main floor of the Museum near the Book Shop. Here authentic Mexican imports—rugs, clothing, baskets, pottery, jewelry, wooden ware, and many other decora-

tive items—may be purchased from gaily costumed sales persons, making it possible for each Member to possess a permanent and valued remembrance of Members' Night, 1961.



Above: Carved wooden figure from New Zealand on exhibit in Hall F



Left: A Bapende initiation mask from the Congo area on exhibit in Hall of Primitive Art

Kerguelen's Cabbage—

(Continued from page 5)

all other crucifers in being much smaller and perfectly spherical. No insects have ever been observed to visit flowers of the cabbage.

The generic name of Kerguelen cabbage, *Pringlea*, was given by Dr. Hooker in honor of Sir John Pringle (1707–1782), the founder of modern military

medicine. The connection between Sir John and the cabbage may seem indeed obscure at first glance, but it becomes clearer when we realize that Sir John was the author of a work on scurvy and that the cabbage was at one time highly esteemed for its antiscorbutic properties. Early sailing-ships many months out would veer far from their normal course to put in at Kerguelen for a supply of “greens.”

In closing this account of Kerguelen and its cabbage, a quotation from *Flora Antarctica* is appropriate. Of the cab-

bage, Dr. Hooker says: “. . . its luxuriance amidst surrounding desolation, its singular form and appearance, striking even the casual observer, and the feelings of loneliness and utter isolation from the rest of the world, that must more or less oppress every voyager at first landing on its dreary and inhospitable locality, are circumstances likely to render the Kerguelen's Land cabbage, cabbage though it be, a cherished object in the recollection of the mariner: one never to be effaced by the brighter or luscious products of a tropical vegetation.”

THIS MONTH'S COVER *April's* FEATURED EXHIBIT

DUKE OF YORK:

“... bear you well in this new spring of time
Lest you be cropped before you come
to prime.” KING RICHARD II, V, 2.

On April 1, daylight is about 3 hours 40 minutes longer than it is at the time of the winter solstice. The average temperature has increased from 26 degrees in December to 53.4 degrees in March. Precipitation can be expected to be about 3 inches during the month. These three conditions of greater amounts of light, heat, and moisture trigger the annual rebirth of life in woodlands of the Chicago area and other temperate climates.

The Museum's featured exhibit for April—a habitat group portraying a mixed hardwood forest along a small stream in spring—represents a scene such as may be found in Cook County forest preserves and a number of spots in the vicinity of Chicago. In the group, above a carpet of colorful wild flowers, shrubs and forest trees are beginning to expand their leaves. Sugar maple, white oak, basswood, elm, ash, and black cherry send trunks high and spread their branches wide so that when fully clothed with leaves a canopy of foliage will subdue the light falling on living things below.

“Lest you be cropped before you come to prime” poses a major problem for all living things. The precocious behavior of early spring flowers is their partial solution to the problem. By getting an



early start, low-growing plants on the forest floor can develop leaves, flowers, and mature seeds before their tall neighbors, the trees with their leafy crowns, reduce the amount of available light below the optimum for vigorous growth of plants at the lower level. Thus spring wild flowers accomplish in a few months a full life cycle that assures continuation of the species.

The woodland is a complex community of a wide variety of living things. The inhabitants run the gamut of organisms from viruses and bacteria to orchids, and from protozoans to mammals and birds. From deep in the soil to the tops of the trees and beyond, a myriad of living forms with differing degrees of independence seek a means of livelihood. What each does in this pursuit affects the lives of others. The primary source of food for all life is the green plants and, of course, the primary source of energy for plants is the sun. The capture of this energy and its distribution by food chains throughout the intricate web of life in a woodland or any other association of plants and animals anywhere is a marvel of complexity. To discern, understand, and explain it is the difficult task of the biologist. To appreciate its harmonies and rhythms is the privilege of all.

The study of living things in a particular habitat has been likened to a kind

of biological economy which, like political economy, seeks to make intelligible the relations of producer, dealer, and consumer. In every community, self-sufficiency, mutual dependence, and predation result in a kind of wavering balance, the external manifestations of which are sometimes a delight to the human observer. It is against this backdrop that we see spring wild flowers not distributed at random over the forest floor but each kind in a spot best satisfying its preference for moisture or soil or simply living room. Bluebells, blue-eyed Marys, and buttercups grow close to the stream and in low portions of the wood where there is more moisture. By contrast, Mayapples, wild geranium, and wild blue phlox occupy drier elevations. More ubiquitous are the trilliums, dog-tooth violets, and anemones.

Lovely as they are, their beauty is augmented in the eyes of man by the very forces that stir plant life each year from winter's imprisonment in seed, bulb, tuber, and trunk.

During April, prints of spring flowers from Thornton's famed “Temple of Flora” series will be displayed in Stanley Field Hall to direct attention to the month's featured exhibit—the Illinois Woodland in Spring habitat group—which is permanently located in Hall 29.

JOHN R. MILLAR



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