

DE PISCIBVS

De pisce Episcopi habitu.



CAPUT XXI.

Creature Features

YEAR 5 AND 8

BIOLOGICAL SCIENCES



QGC

FUTUREMAKERS



QUEENSLAND
MUSEUM NETWORK



Queensland
Government

Future Makers

Future Makers is an innovative partnership between Queensland Museum Network and Shell's QGC business aiming to increase awareness and understanding of the value of science, technology, engineering and maths (STEM) education and skills in Queensland.

This partnership aims to engage and inspire people with the wonder of science, and increase the participation and performance of students in STEM-related subjects and careers — creating a highly capable workforce for the future.

Cover image: The 'sea bishop' woodcut illustration from Guillaume Rondelet's book, Libri de piscibus marinis (aka 'Summary of Marine Fishes'). This book, published in 1554, is the oldest book in Queensland Museum's collection. Queensland Museum Network.

Copyright © 2021 Queensland Museum.



The images included in this teaching resource may be used for non-commercial, educational and private study purposes. They may not be reproduced for any other purpose, in any other form, without the permission of the Queensland Museum.

ENGAGE

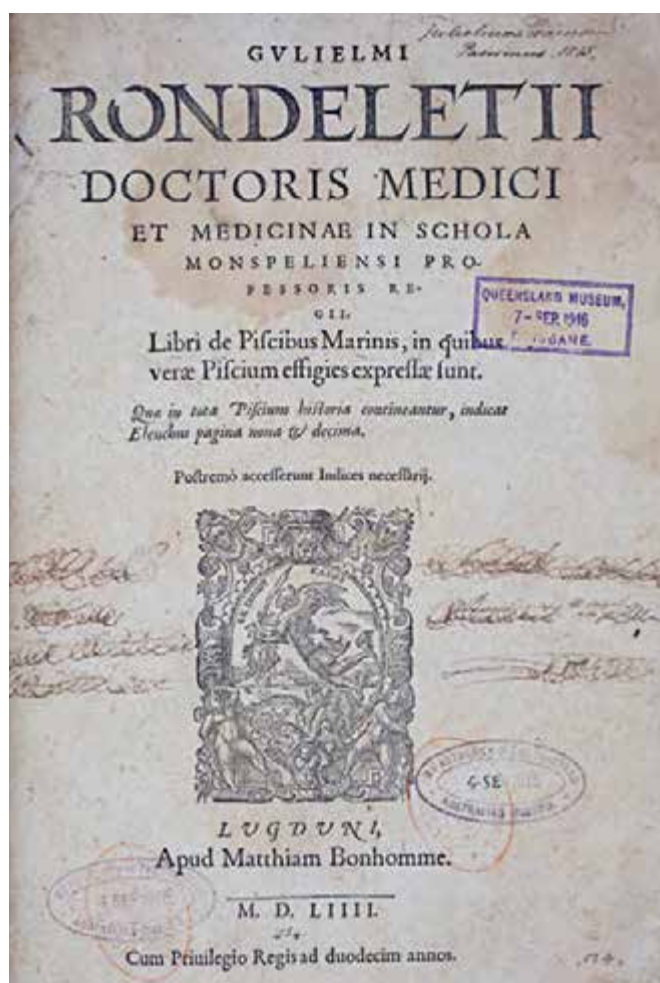
Creature Features

Teacher Resource

This activity is designed to explore and build on students' prior knowledge of adaptations.

In this activity, students observe an image of an unknown organism. Students identify what the organism might be and annotate a diagram to communicate ideas about the organism. Following this, Year 5 students examine the features of the organism to make and record inferences about its habitat, movement, diet and predators. Meanwhile, Year 8 students analyse a cell sample taken from the organism and use the cell sample to draw conclusions about the organism.

The images used in this activity are taken from the oldest book in Queensland Museum's collection, *Libri de piscibus marinis* (aka 'Summary of Marine Fishes') by Guillaume Rondelet. The book, published in France in 1554, is one of the earliest known undertakings in modern ichthyology to scientifically describe fish using the physical specimen – common practice now, but ground-breaking at the time.



Title page of Guillaume Rondelet's, *Libri de piscibus marinis*, published in Lyon, France in 1554. Queensland Museum Network.

Rondelet chose to include two bizarre ‘flights of fancy’ in his book, the Sea Lion and Sea Bishop (both used in this activity), suggesting that he might have had a wicked sense of humour! You can learn more about Rondelet’s book online at [Queensland Museum’s Google Arts and Culture page](#) and the [Queensland Museum blog](#).

To conclude the activity, Year 5 students could write an information report about the organism, while Year 8 students could construct a timeline of Rondelet’s life. In the timeline, students identify Rondelet’s scientific achievements and the ways in which these influenced the development of scientific knowledge, understanding and practice.

Curriculum Links

Science

YEAR 5

Science Understanding

Living things have structural features and adaptations that help them to survive in their environment (ACSSU043)

Science Inquiry Skills

Communicate ideas, explanations and processes using scientific representations in a variety of ways, including multi-modal texts (AC SIS093)

YEAR 8

Science Understanding

Cells are the basic units of living things; they have specialised structures and functions (ACSSU149)

Science as a Human Endeavour

Scientific knowledge has changed peoples’ understanding of the world and is refined as new evidence becomes available (ACSHE134)

Science knowledge can develop through collaboration across the disciplines of science and the contributions of people from a range of cultures (ACSHE226)

People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity (ACSHE136)

Science Inquiry Skills

Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge (AC SIS139)

Summarise data, from students’ own investigations and secondary sources, and use scientific understanding to identify relationships and draw conclusions based on evidence (AC SIS145)

Communicate ideas, findings and evidence based solutions to problems using scientific language, and representations, using digital technologies as appropriate (AC SIS148)

English

YEAR 5

Language

Understand how texts vary in purpose, structure and topic as well as the degree of formality (ACELA1504)

Literacy

Plan, draft and publish imaginative, informative and persuasive print and multimodal texts, choosing text structures, language features, images and sound appropriate to purpose and audience (ACELY1704)

General Capabilities

Literacy

Comprehending texts through listening, reading and viewing

Composing texts through speaking, writing and creating

Text knowledge

Information and Communication Technology

Investigating with ICT

Managing and operating ICT

Critical and Creative Thinking

Generating ideas, possibilities and actions

Creature Features

Student Activity

Year 5 Investigation

Take a moment to observe the mysterious living thing below.



Living Thing Analysis

What type of living thing might this be? Could it be a plant, an animal or something else? Explain your response.

Annotate the image of the living thing. Label its physical features. Consider skin covering, limb type, mouthparts and other notable features.

Evidence and Adaptations

Living things have features and behaviours that help them survive in their environment. We call these adaptations.

Look at the features of your living thing to answer the following questions:

| Living Thing | | Prediction | Evidence |
|------------------|---|------------|----------|
| Habitat | What type of environment might it live in? | | |
| Movement | How might it move? | | |
| Diet | What might it eat? How might it catch its food? | | |
| Predators | How might it stop and/or avoid predators? | | |

List two questions you have about the living thing.

1.

2.

Information Report

Write an information report about the living thing. Remember to include an introduction, description and conclusion. In your description, you could write about the living thing's classification, appearance, habitat, behaviour, food, life cycle and any other interesting facts.

Creature Features

Student Activity

Year 8 Investigation

Take a moment to observe the mysterious organism below.

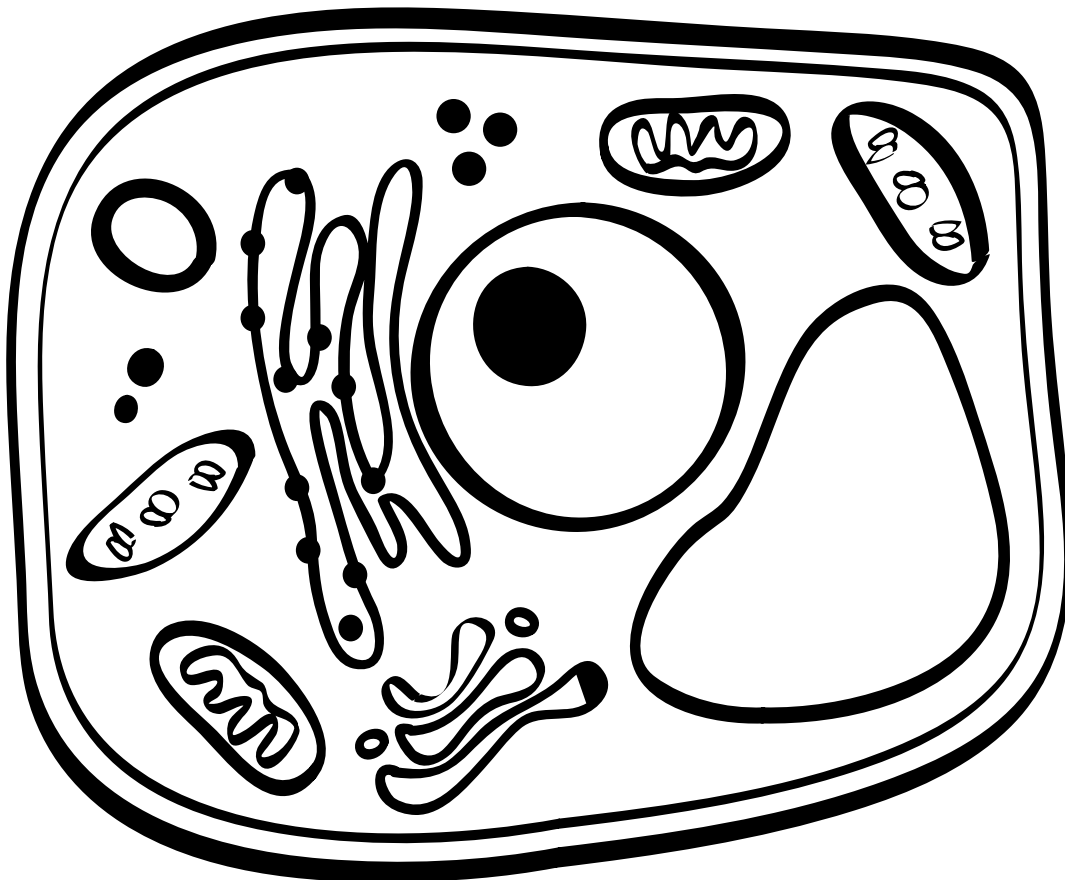


Make an inference. What type of organism is this? Is it a plant, an animal or something else entirely? Justify your response below.

Annotate the image of the organism. Label its physical features. Consider skin covering, limb type, mouthparts and other notable features.

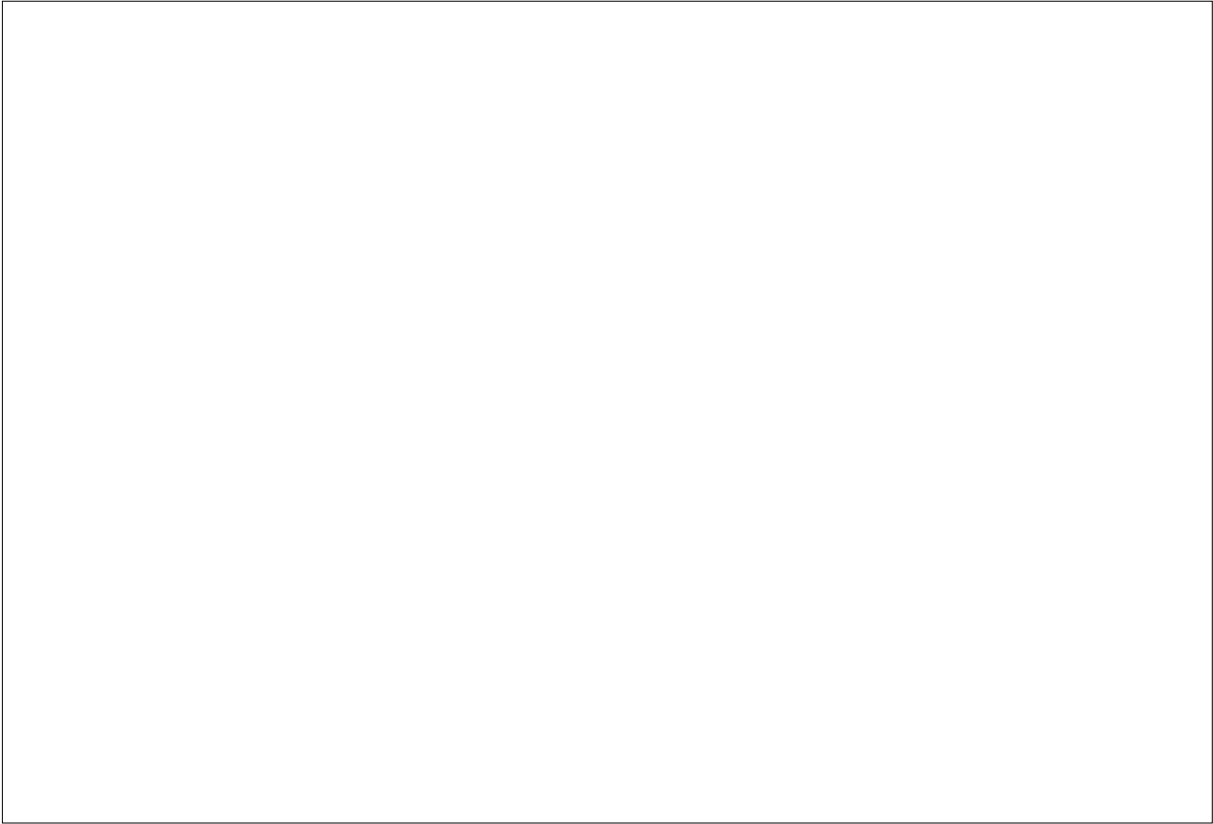
Further Information

Scientists were able to take a cell sample from the organism. Examine the cell sample. Label the organelles within the cell and describe their structure and function in the table on the next page.

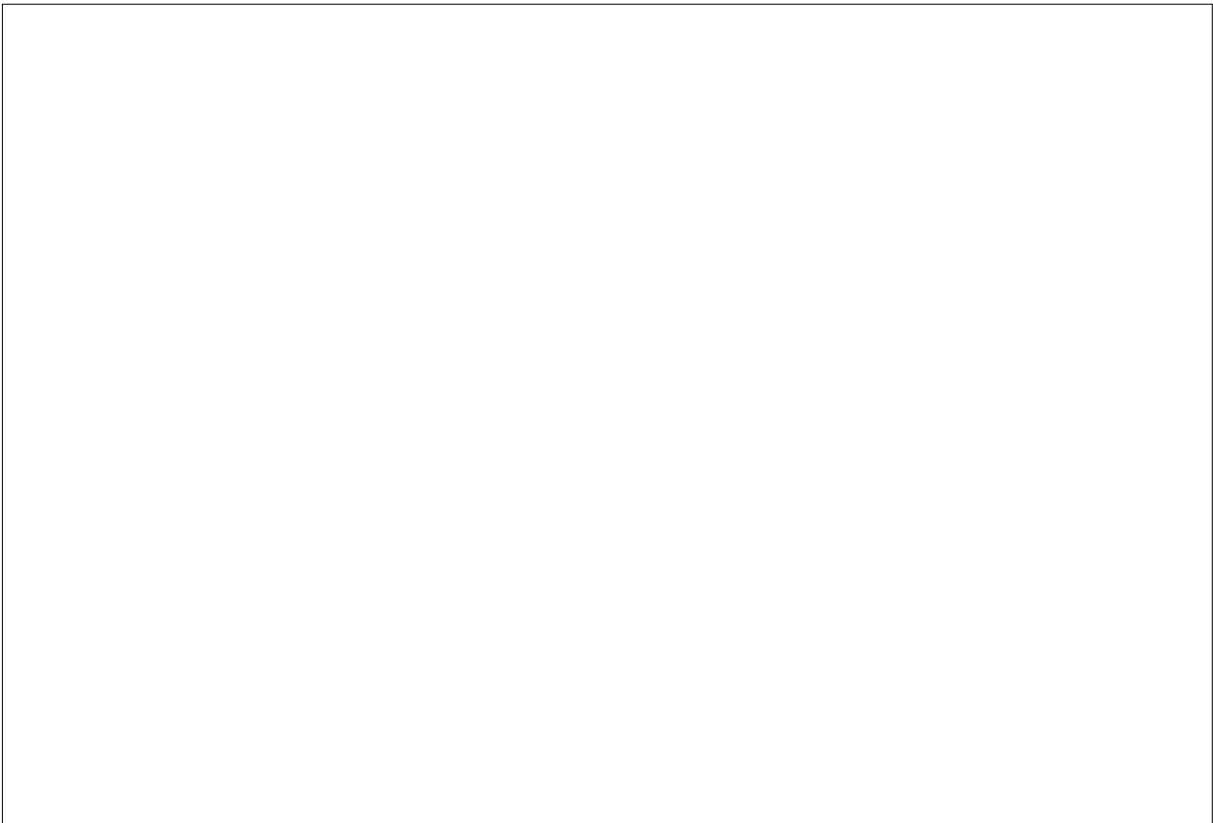


| Organelle | Structure | Function |
|------------------|------------------|-----------------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Explain what the cell sample reveals about the organism and how this evidence supports or refutes your original inference.



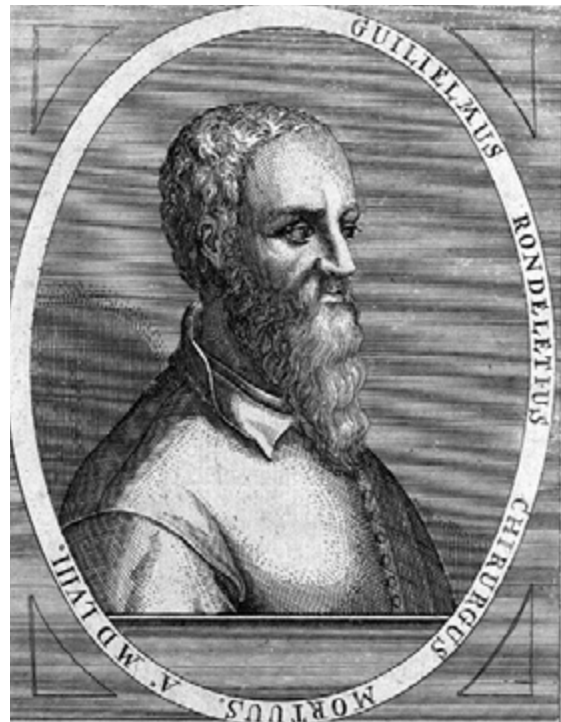
Use this evidence to hypothesise how the organism is likely to survive and reproduce.



Timeline: Guillaume Rondelet

The image you analysed is from the oldest book in Queensland Museum’s collection, *Libri de piscibus marinis* (aka ‘Summary of Marine Fishes’) by Guillaume Rondelet, published in 1554. Although a scientific text, Rondelet chose to include two bizarre creatures of his own creation: the Sea Lion and Sea Bishop. You can view excerpts of this book in an [online exhibition](#) curated by Queensland Museum.

Rondelet was a French naturalist and physician, and his practices significantly impacted the scientific community at the time. Research Rondelet and construct a timeline of his life. In the timeline, list Rondelet’s scientific achievements and comment on how these influenced the development of scientific knowledge, understanding and practice. Attach additional pages, if needed.



Image, right: Portrait of Guillaume Rondelet, 1566.

| Year | Event |
|------|-------|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |