

The structure and function of the water vascular
and eversible digestive systems in certain echinoderms,
or,

The *Asteria* March (in 5/4 time)

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E-chi-no-der-ma - ta are we. We have com-plex, spi-ny skin.



Skin claws de-ter o-ther creat-ures; skin gills let ox-y - gen in.



We have no fa-voured di-rec-tion, lack-ing both ta-il and head.



There is no blood in our bo-dies; we pump salt wa-ter in-stead.



We are the stars of the sea. Five poin-ted crea-tures are we.



Oy-sters, be-ware of the arch When the As-te-ri-a march!

Syncopate freely to match the text, as in this example:



We drink the oy-ster - y broth u - pon which our di-et is based.

Complete lyrics are found on the other side

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Echinodermata are we. We have complex, spiny skin.
Skin claws deter other creatures; skin gills let oxygen in.
We have no favoured direction, lacking both tail and head.
There is no blood in our bodies; we pump salt water instead.

We are the stars of the sea;
Five-pointed creatures are we.
Oysters, beware of the arch
When the *Asteria* march!

Each of our arms is equipped with rows of cylindrical feet:
These have evolved to help open shellfish we happen to meet.
Over each foot is an ampoule from which a vasculature descends,
Carrying brine under pressure; that's how the tube foot extends.

When we encounter an oyster, stuck to a seabottom ledge,
It ceases filtering algae. It shuts the door in its edge.
We form a five-pillared arch to fasten the shell in our grip,
Pressing the tube feet upon it; each has a suction-cup tip.

Oysters have but one adductor, holding the shell tightly closed,
Using a force vectored inwards. Our force, of course, is opposed.
We've enough arms to keep pulling while we leave others at rest;
That's how we outlast the oyster which we intend to digest.

Since, in our species, the stomach is quite a flexible sack,
We needn't open the oyster more than the tiniest crack,
Through which the stomach's everted (turned inside out, we explain),
Thereby beginning digestion inside the oyster's domain.

Enzymes attack the adductor, cleaving molecular bonds,
Letting the shell open more as muscle no longer responds.
We drink the oystery broth upon which our diet is based.
That's why we've barely an anus: we don't ingest what we'd waste!

Main references:

Ralph Buchsbaum, *Animals Without Backbones*, University of Chicago Press, 1976
David Nichols, *Echinoderms*, Hutchinson University Library, London, 1969

172 Howland Avenue Toronto, Ontario, Canada M5R 3B6
howard@thrinberry-frog.com <http://www.thrinberry-frog.com>
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