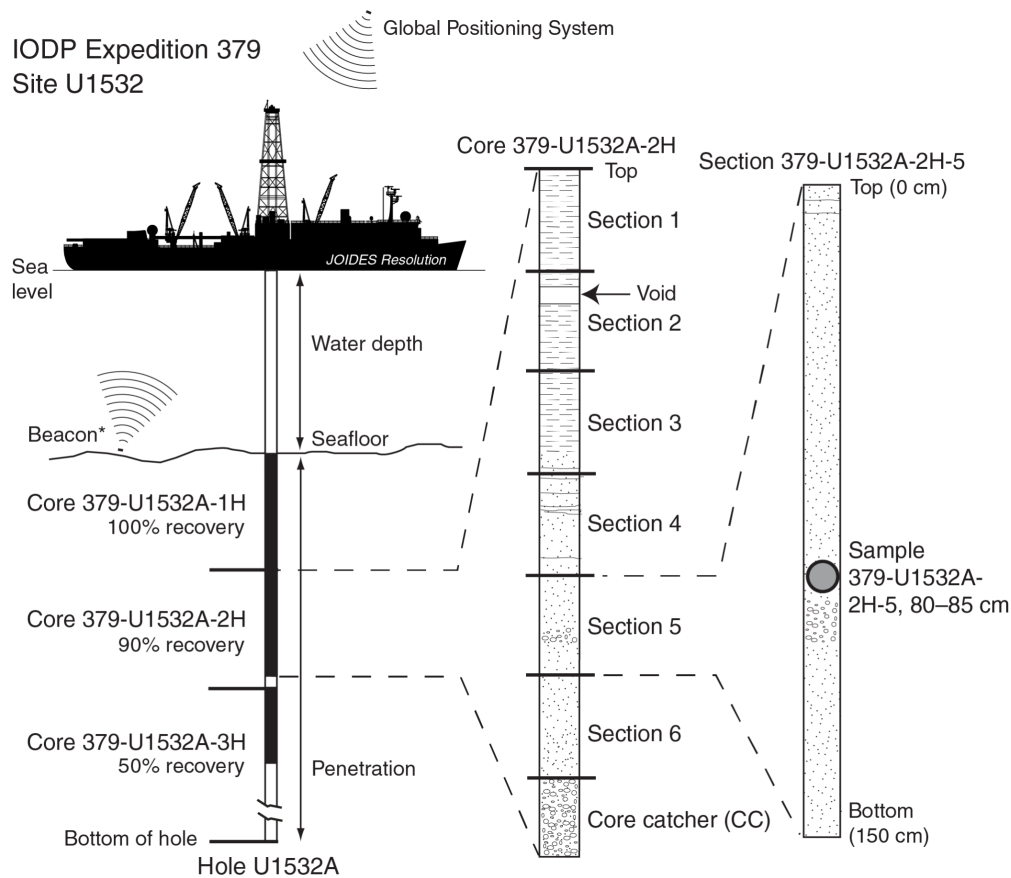


Core Samples

Archives of planetary knowledge



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- Author: Filippo Bertoni
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Many core samples are collected by the JOIDES Resolution research vessel, as shown in this illustration from Expedition 379, co-authored by Johan Renaudie, one of the researchers in the micropaleontology laboratory of Museum für Naturkunde Berlin. Read more at: http://publications.iodp.org/proceedings/379/102/379_102.html (03.01.2022).

Core samples are cylindrical sections of materials obtained by drilling with special drills through sediment and other substances. While this sampling technique is common across a great variety of applications, they are especially important in geological and earth sciences but also in climate sciences and paleoceanography.¹ Cores from natural sediments are instrumental in the interpretation of underground features and for producing data about the history of specific locations, and about the planet more generally. Techniques for drilling boreholes are ancient, but they remained rather rudimentary for a long time. With the convergence of the geological sciences and the extractive industries in the 19th century, modern coring tools and techniques began to emerge. These early tools allowed only for relatively small and inaccurate samples, which also played a role in the micropaleontological evolutionary dead ends encountered in the second half of the 1800s. It was only in the late 1940s, when

Swedish scientist Borje Kullenberg introduced the piston corer, that deeper and more coherent samples could be collected from the ocean floor.

This commenced a concerted effort to gather samples for **reconstructing the history** and dynamics of the planet, like in the case of the **Lamont-Doherty Collection**. These early undertakings gave momentum to **micropaleontology at sea**, as vast transnational efforts to collect and collate core samples from the global ocean started **deep sea drilling**. This monumental technoscientific and sociopolitical venture allows scientists to tell new stories **of microbes and planets**, and to better understand planetary systems and the history of the Earth.² Using **biostratigraphy** and other more complex techniques and analytical tools, scientists can extract data about past climates, as well as atmospheric and oceanic compositions. With the help of **micropaleontological formations** they can catch glimpses of the workings of our planet, like in the case of **Cycladophora davisiana** and **Foraminifera**.

While scientists value the data that allows them to temporarily black-box their idiosyncratic specificities, the same data derives its power from the **situated stories** that it emerges from. So, as data from core samples are used to produce accounts of the planet and its history, they can also bring to the surface other stories, like the ones gathered on this website. The complex **technoscientific apparatus** that allows us to tell such **stories** relies on research vessels, large drills, core repositories, micropaleontological fossil records, and databases like the **NSB Database**. Simultaneously, it also depends on the many lives – of scientists, animals, microorganisms, and many others – who enter in relation with it, and shape its ongoing development and transformation.

Finding radiolarians in the core catcher



*A video showing the work of collecting and studying core samples through **Radiolaria** on board of the deep sea drilling vessel **JOIDES Resolution**. (Source: The JOIDES Resolution/YouTube)*

Footnotes

1. You can learn more about core samples also by exploring the mineralogical collections of the Museum für Naturkunde Berlin: <https://www.museumfuernaturkunde.berlin/en/science/geochemical-and-microanalytical-laboratories> (03.01.2022) and <https://www.museumfuernaturkunde.berlin/en/science/rock-and-ore-collection> (03.01.2022).²
2. Arranging international research efforts of this scale is not an easy task, and is one that requires complex sociopolitical arrangements. To learn more on the work of extracting data from the ocean's depths, see Christof Rosol. "Hauling Data:

Anthropocene Analogues, Paleoceanography and Missing Paradigm Shifts". *Historical Social Research* 40, no. 2 (2015): 37-66.
<https://doi.org/10.12759/hsr.40.2015.2.37-66>