

## Brazilian Paths to Energy: Exploration of Fossil Fuels in the Brazilian Amazon 1870-1980

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The history of Amazonian fossil fuels can be told in different ways. It can be a tale of magmatism and orogenesis – this would take us back millions of years, as we track the slow-moving geological changes that eventually led to the deposition of hydrocarbons in the region. It can also be the story of explorers and scientists who ventured into the thick forest to map its rivers, study its rocks, and tap into its natural wealth. To these modern humans, the Amazon Basin was a treasure trove of unknown resources. From the beginning of organized scientific expeditions, around the 1870s, to the moment oil was found in 1955, less than a hundred years passed, in which geological knowledge was accrued. In the 1980s, the discovery of the country's largest proven onshore reserves of oil and natural gas in the Urucu Petroleum Province made the Amazon an important location for energy generation in Brazil.

The diversity of natural resources in the Amazon Basin has always sparked the interest of several nations, companies, scientists, and researchers. Many flocked to Brazil to explore a territory that remained largely unknown well into the 1900s. In the mid-19<sup>th</sup> century, the increase of global consumption of fossil fuels prompted the search for coal and later oil around the Brazilian territory. The Amazon Basin was included in these efforts. The initial surveys in the Amazon Basin focused on the description of natural resources to find out what could be explored.

The first international expeditions for geological reconnaissance of the region were Expedition Thayer (1865-1866) and Expedition Morgan (1870-1871). The earliest national effort was the expedition of the Imperial Geological Commission (1875-1878), which covered Brazilian territory widely. They produced important works for the geological understanding of the Amazon Basin, including the discovery of fossils that typically indicate the presence of hydrocarbons (coal, oil and gas) in geological structures. This process of construction of geological knowledge and interpretations about the natural world were essential to the later discovery of fossil fuels. During the 20<sup>th</sup> century, Amazon was an open field for several efforts in search of fossil fuels. However, obstacles to exploring the potential of fossil fuels in the area included geographical conditions, diseases, lack of geological knowledge, inadequate logistical support for transporting the fuel.

This paper discusses different aspects of the search for energy sources, notably fossil fuels, in the Amazon sedimentary basin from the mid-19<sup>th</sup> to the 20<sup>th</sup> century. Geological knowledge and technological developments help to illuminate the search for and exploration of energy resources around the Brazilian territory, as well as to show how concepts in these fields changed over time. A large body of the existing literature about the Amazon Basin focuses on the economic, and political aspects of the oil industry, but less on the links between technical and geological developments and energy generation as a national issue.