Laying claim to Nicaragua’s Mahogany forest, ca. 1880s-1910s

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ABSTRACT: This paper looks at the political economy of Nicaragua’s mahogany forest around the turn of the last century. It examines the escalating crisis between Nicaragua and the United States in the early twentieth century, a crisis that began as a dispute over mahogany logging. In 1906 the Nicaraguan president José Santos Zelaya annulled the mahogany concession owned by an American company. The George D. Emery Company of Chelsea, Massachusetts had worked the concession since the 1880s, logging the mahogany that grew along Nicaragua’s Mosquito Coast. Zelaya forced a halt to these logging operations; he also ordered the confiscation of the company’s equipment and other assets. The company appealed to the US Secretary of State and lodged a claim—the Emery Claim—for compensation. The major actors in the subsequent drama included not only Zelaya and Emery, but also two American Secretaries of State, as well as a number of other individuals—from Nicaragua’s Mosquito Coast to New York and across the Atlantic to London, England—all of whom had an interest in the claim’s resolution. Nor was its resolution straightforward: the claim continued to exert an influence even after the death of Emery and others involved in the in-terminable dispute, even after the issues in dispute had been resolved. By then far more appeared to be at stake than the right to log mahogany, the case having broadened to include such things as resource depletion and other environmental factors, regional and national sovereignty, geo-politics, fiscal policy, and much else besides. The history of a Nicaraguan mahogany forest suggests both the complexity and the relevance of environmental history.

1 INTRODUCTION

In 1906, the Nicaraguan president José Santos Zelaya annulled a mahogany concession that covered much of north-eastern Nicaragua. The firm that held the concession—the George D. Emery Company of Chelsea, Massachusetts—had been logging mahogany along the Mosquito Coast since the 1880s. Zelaya’s action forced a halt to these logging operations; he also ordered the confiscation of the company’s equipment and other assets. The company appealed to the U.S. Secretary of State for help and lodged a claim—the Emery Claim—for compensation. In the drama that would unfold over the following three years, the major actors included not only Zelaya and Emery, but also two Secretaries of State, as well as a number of other individuals, from Nicaragua’s Mosquito Coast to New York and across the Atlantic to London, England. All had an interest in the claim’s
resolution. The resolution was not straightforward: the claim continued to exert an influence even after the deaths of Emery and others involved in the interminable dispute. The claim had an impact even after the issues in dispute had been resolved. By then, far more appeared to be at stake than the right to log mahogany. The case broadened to include such things as resource depletion, regional and national sovereignty, geo-politics, fiscal policy, and much else besides.

This paper describes the Emery Claim and speculates on its significance to the larger problem of U.S.-Nicaraguan relations in the early twentieth century. To understand the complexity of these issues, it is necessary to start at the beginning, with a description of the logging operations on the Mosquito Coast, and the traffic in mahogany logs that formed the basis of the original Emery concession.

2 MAHOGANY LOGGING ON THE MOSQUITO COAST

George D. Emery, founder of the company that bore his name, spent his working life engaged in the lumber industry. This began in 1849 when the fifteen-year-old Emery found work as a tally boy in an upstate New York lumberyard. By the 1870s he had his own saw mill in Indianapolis that specialised in black walnut. Although he achieved a degree of prominence—the American Lumberman (1905) described Emery as "the largest producer in the country"—the exhaustion of readily available black walnut encouraged him to seek other sources of timber. Emery subsequently became interested in the tropical woods of Central and South America; in 1882, he established a manufacturing base in Chelsea, Massachusetts, and began to purchase mahogany, cedar, and ebony logs in Honduras, Nicaragua, and Colombia. Emery's company brought the logs to Chelsea, where they were milled to produce veneers, much of which would be used to line the passenger cars of the expanding American railway system. Emery encountered some financial difficulties getting his Chelsea operations up and running, but by the mid 1880s his company, along with a Canadian firm, was logging in the forests of the Mosquito Reserve in northeastern Nicaragua. (Parsons, 1955)

Nicaragua's tropical forests include both wet and dry regions; mahogany grows in areas of high rainfall, usually on inland hillsides. (Parsons, 1955) On average only one merchantable mahogany tree is found per acre of forest and thus, as one expert pointed out, "Mahogany logging is strictly a single tree operation". (Lamb, 1948) The nature of the resource to some extent dictated the way in which work could be carried out most effectively:

The specialized nature of mahogany logging is a result of the scattered occurrence of the tree in mixed tropical forest, primitive isolated areas in which this forest occurs, wide seasonal variation in weather, and the large capital outlay required to underwrite a successful logging operation. (Lamb, 1966)

This was the context in which the Emery company operated in Nicaragua.

Logging mahogany was a complex process. The first step involved mahogany hunters, who located the trees and then cut trails to allow for their removal. Since the roots of these trees often extended in a buttress-like fashion, from ten to fifteen feet aboveground, men felling the trees had to work on scaffolding. Once the trees were down, workers cut them into set lengths—each tree producing two to three saw logs—which were then hauled by oxen to the nearest stream bed. With the onset of the rainy season, the logs could be floated downstream to the major river arteries, where they were lashed into rafts and transported to tidewater. At the coast the logs were grouped into large booms, then tugboats took the booms back upstream to prevent insect damage in the brackish waters of the delta and the lagoon. The next step was to load the logs onto the ship, which would take them to the Emery sawmill in Massachusetts. The long trip from forest to mill was not particularly efficient: only about half of the cut mahogany completed the journey. (Lamb, 1966)

Northeastern Nicaragua's ecosystem was not the only factor dictating the rhythms of work and determining the Emery company's chances of success. The region's political status changed...
considerably during the closing decades of the nineteenth century. These changes had a profound impact on the company’s operations, as well as its relationship with the Nicaraguan government.

From the early 1600s, the Mosquito coast had become part of a larger region (including the Atlantic coasts of Nicaragua, Honduras, Costa Rica, and Panama) that was influenced by British commercial and political interests. In 1860 Britain signed the Treaty of Managua, establishing the Mosquito Reserve as an autonomous area for the Mosquito people and enabling the future re-incorporation of the Coast within the Nicaraguan state. By 1880, Bluefields, already the Atlantic Coast’s principal port, had emerged as the political capital of the region. Thus when the Emery logging operations began in the 1880s, the region was still largely autonomous, not yet subject to effective control by the Nicaraguan government. This changed when José Santos Zelaya became president of Nicaragua in 1893. Zelaya was determined to extend his government’s authority over the region and initiated steps to accomplish this goal. As a consequence, the Emery company was forced to re-negotiate its logging concession.

Zelaya’s efforts to bring the Mosquito Coast within the orbit of the Nicaraguan state reflected a broader political agenda. He sought to initiate projects, including a trans-isthmic canal, that would hasten Nicaragua’s economic development. An efficient transportation system was one of Zelaya’s priorities. To accomplish these ambitious goals, the president was prepared to negotiate agreements or concessions with foreign investors. These would give the latter access to the country’s resources in exchange for money and/or royalties. They would also include stipulations that the concession holder would fulfill such obligations as constructing roads and railways, dredging shipping routes, and creating ports. (Stansifer, 1977; Healy, 1981; Gismondi & Mouat, 2002)

Zelaya signalled his determination to assert sovereignty over the Atlantic Coast in early 1894, when he sent troops to Bluefields. Shortly afterwards, George Emery’s son, H. C. Emery, renegotiated the Emery company’s contract with Zelaya. This 1894 contract gave the company the right to log mahogany for five years over an area that included nearly half the country, including most of the Zelaya province as well as the Matagalpa region. (Diario Oficial, 1894) The size of the company’s concession reflected the depletion of the Mosquito Coast’s most accessible timber. The company was drawn further inland in order to continue logging mahogany. The company required an extensive network of trails, roads, and railroads to work the area effectively. An engineer’s report in 1895 described the growing scale of the Emery operations, which by now was the most important industry in the region. (Vitta, 1946)

3 RESCINDING THE EMERY CONTRACT

The 1894 renegotiation of the Emery company’s contract proved to be the first in a series of amendments. Over the next six years, the contract was altered a number of times, refining the obligations of both parties and extending its term to 1913. Emery had originally paid $200,000 for the concession, and he agreed to pay $20,000 annually plus a dollar royalty on each log harvested. He also committed to replanting logged areas and building fifty miles of railroad. Popular North American accounts frequently invoked the stereotype of the poorly managed Latin American republic, but the Emery contract was striking in its thoroughness. For example, a clause required Emery to pay $500,000 should he fail to finish the railway, and the contract also included a process for dispute resolution in the case of fundamental disagreement between the two parties. (Diario Oficial, 22 March 1898)

This latter provision was invoked in 1903, when Zelaya accused Emery of defaulting on the contract. The Nicaraguan president claimed that Emery had neglected reforestation and failed to build the railroad. For this failure Zelaya demanded the $500,000 provided for in the contract. Emery objected and the dispute went to arbitration. Hearings were held in Bluefields, chaired by the American merchant Samuel Weil (who was appointed by Zelaya), with J. A. Belanger, a French Canadian, representing Emery. Although they found Emery guilty of various minor infractions and fined him $12,000, the two upheld the validity of the company’s concession, noting that Emery had ten more years to complete the railway and that he had paid up his contract until 27 July 1906.
Zelaya interpreted this to mean that the contract was valid only until July 1906. (U.S. State Department. 1906-1910. *Numerical and Minor Files of the Department of State, 1906-1910, M862, microfilm roll 128 [USSD hereafter])

Zelaya annulled the Emery contract on 7 August 1906, seizing goods and embargoeing Emery’s operations. He argued that the company was selling duty-free goods in the marketplace and that it had failed to complete the railway. Emery counterclaimed for $2,000,000 in damages. Reports from the American consul in Bluefields emphasized the impact of Zelaya’s embargo, which had stopped logging operations, prevented the shipment of 6500 logs, and impounded various company assets, including Emery’s tugboat, the steamship *Yulu*, equipment, repair yards, and even the office in Bluefields. Emery appealed for international arbitration and turned to the United States (U.S.) State Department for help. The bitter wrangling that followed strained relations between the U.S. and Zelaya. (USSD, roll 128)

U.S. State Department files include a lengthy series of letters between Secretary of State Elihu Root, Emery’s Washington lawyer Judge Penfield, the U.S. Consul in Managua, Emery’s representatives, and President Zelaya. Letters debated the finer points of international law—legal hair-splitting which led to a great deal of irritation and frustration. Much of this correspondence was intended to persuade Zelaya to permit Emery to continue logging, while the dispute was being resolved. (USSD, roll 128)

In late 1906, the senior American official in Nicaragua, Lawrence Merry, began to look into the matter. He summoned Sam Spellman, who was in charge of Emery’s Nicaraguan operations, to Managua. Spellman denied the charges levelled against the company and stressed the hardship caused by the delay in resolving the issue. Merry found Spellman “combative, unyielding and mentally so constituted that he entirely lacks the judicial faculty. ‘The House of Emery right or wrong’ is his abiding mental position.” And Merry felt that this was a problem: “I regret that the Emery Company insist on keeping Mr. Spellman at Managua as their Agent. With the cordial dislike entertained against him by President Zelaya, however unjustly, it will make for me increased difficulty to reach a friendly solution.” In a report written three weeks later, Merry told the U.S. Secretary of State that “Mr. Spellman, so much from desiring a compromise, aims at a diplomatic rupture and a heavy reclamation to be enforced by our Government. No man who wants peace will declare war and state the damages he claims.” (USSD, roll 128)

For his part, Zelaya was becoming less sympathetic to American business people with investments in Nicaragua. Angered by the U.S. decision in 1903 to build the canal through Panama instead of Nicaragua, he subsequently began to investigate the work of those foreigners, especially Americans who held concessions, to determine if they were honouring the terms of their contracts. This was the context of Emery and Spellman’s complaints, and there is evidence to suggest that they had legitimate grievances. For example, in September 1905 Zelaya sold Lomax Anderson “all the pine timber on all the territory covered by the Emery Company concession … for $500,000 gold.” This concession included a long list of duty-free imports, provoking Emery to complain of double standards. He noted his own company’s much shorter list of duty-free goods and compared his export duties on cut wood with Anderson’s duty-free status. Merry was sympathetic: “It seems to me,” he wrote, “that the granting of the subsequent Anderson concession to cut timber within the limits of the old Mosquito Reserve was a violation of the Emery exclusive concession which makes no exception as to the class of timber they are permitted to cut.” (USSD, roll 128, emphasis in the original) Nor was the Anderson concession the only one that appeared to infringe on the Emery concession: Zelaya signed a similar contract with his crony Angel Caligaris, granting him the right to log another 40,000 hectares of pine within its boundaries.

Spellman tried to persuade Merry that the issue was one of defending American property overseas, arguing that

The act in the annulment of the Emery concession and the placing of the embargo on Emery Company’s property is in its essence confiscation, by striking down the law, and the tribunal, provided for their protection.
This therefore is not the case of a mere breach of executory contract, it is essentially an attack on vested rights of property. A law expressly enacted for the security of the Emery Company has been annulled. The right to the protection of the law of the land is guaranteed by the law of nations when private property is invaded. (USSD, roll 129)

Spellman’s appeal to the rule of law touched a nerve. The U.S. State Department was much concerned with “order and stability” in a region where American business interests were pressuring U.S. officials to define the term in a specific way: protecting concessions, defending contracts, maintaining currency stability, establishing international legal forums and due process, and guaranteeing the transnational flow of resources. (Rosenberg, 1999; Gismondi & Mouat, 2002) The State Department subsequently intervened to get the company’s logs released from embargo and pressed for the larger issue to be referred to arbitration. (USSD, roll 129)

4 THE FOREST AND THE TREES

Merry worked diligently to address the difficulties confronting the Emery company. In November 1906, however, Nicaragua’s Minister of Foreign Relations wrote to him and raised questions about the sincerity of the company’s motives. His letter claimed that “the Mahogany which is the principal article of [Emery’s] business is almost exhausted” and claimed that only three years’ supply of wood, or less than 100,000 logs, remained, “the value of which will not suffice to compensate the construction of the 25 miles of railway which they lack.” The Nicaraguan Government had envisaged that the railway would play a significant role in overcoming the inadequacies of Nicaragua’s internal transportation network. However, the Minister observed that the railway built by Emery was good only for timber transport, “not for the ends of commerce and transit of passengers which constitutes the purpose which my Government had in view in celebrating the contract”. The letter also drew Merry’s attention to Emery’s personal financial woes. It seemed that more was involved in protecting the Emery company from the actions of the Nicaraguan government than Merry had originally believed. (USSD, roll 128)

Merry decided to go to Bluefields and investigate matters further. He soon encountered people who corroborated the letter’s analysis of Emery’s motives. Merry spoke again with Spellman, who acknowledged that the Emery company had been cutting mahogany for seventeen years. Spellman told him “that they had taken ‘the cream of the business’—that timber was becoming scarce, and by reason of distance from seaboard and rivers more expensive to take out: that there was not much left and some times he thought it might be as well to get out of Nicaragua.” (USSD, roll 128) Claud Hollick, who had worked for Emery for eight years, assured Merry that:

... it is an inside fact well known that the Company has only about three years work left in Nicaragua: about 1000 logs at 2 1/2 logs per tree: that they cannot complete their contract if they would and have no intention of so doing or to build the 25 miles railway to complete the 50 miles required at the end of their contract, in default of which, the Company must pay the Government $500,000 dollars. (USSD, roll 128)

Hollick doubted that the company could make such a payment even if it wanted to do so. In his opinion, a counterclaim against Zelaya “for large indemnity” would pay Emery “much better than logs hard to get and 25 miles of railway to build before the logs are entirely exhausted within three years average work, the contract running about 7 1/2 years.” Two other people with whom Merry spoke confirmed this view. (USSD, roll 128) The evidence suggested that the Emery company was trying to get out of its contract with the Nicaraguan government to avoid having to pay the half million dollar penalty for failing to build the railroad. At the very least, Zelaya’s argument that the damages to Emery and American capital were “imaginary” appeared a reasonable counterclaim to
the charges levelled against him by the Emery company and officials of the U.S. State Department. (Zelaya, 1910)

Merry informed the secretary of state of his findings, pointing out that the Emery company could not work its concession and that the Nicaraguan Government remained “obdurate in its decisions to carry out its confiscation of the Company’s property.” Urging international arbitration as the only solution “Unless you desire to apply military force”, Merry assured Root that “nothing will change its attitude except international arbitration or military pressure”:

The latter will create loud ‘squealing’ at first but increased respect afterwards as has been the effect of the British action at Corinto ... We can increase our popularity by the same ‘gunboat diplomacy’, but this not being in accord with our extremely patient and forbearing treatment of these Republics, only international arbitration seems open to us at present. Even this, I think, President Zelaya will oppose but we can more consistently with our previous forbearance, force it upon him. Otherwise he commands the situation, until guns compel a ‘square deal’ from him, and that is a process which his experience, character and intention abhors as nature does a vacuum. (USSD, roll 128)

With gunboat diplomacy a real possibility in January 1907, Zelaya offered to redo the Emery contract and waive its requirement for an additional 25 miles of railroad, if the company paid taxes on the majority of goods imported for future business. Emery rejected the offer, reiterating his claim for $2,000,000 damages. (USSD, rolls 128, 130)

Zelaya suggested submitting the decision to the Central American Court of Justice but Emery held out for international arbitration and rejected Zelaya’s offer. In October 1908, Emery’s lawyer, having exhausted judicial and other remedies, sent a note to Secretary of State Root asking him to end the controversy. (USSD, roll 130) Another year would pass, however, before a settlement would be reached.

5 PHILANDER KNOX AND THE EMERY CLAIM

Philander Knox succeeded Root as secretary of state in March 1909. Within days of taking office, he ordered the American Consulate in Managua to send copies of the Emery correspondence to Washington. He interviewed former foreign-service officers and was reported to be intent on pressing “the matter to an issue at once.” (New York Herald, 1909) However, just as Merry’s investigation into the Emery claim had raised unexpected questions about the company and the near exhaustion of its timber resource, Knox too was disconcerted by what his inquiries revealed. Following George Emery’s death in January 1909, it appeared that Americans no longer held a controlling interest in the company. (USSD, roll 130)

Finding that a British citizen owned a controlling interest in the Emery company, Knox wondered whether the Emery case “should be supported by Department or withdrawn from consideration.” A State department lawyer argued that the company was American-owned when the concession was annulled and when the dispute had first begun. He concluded that the State Department could “intervene on behalf of the corporation to the extent of the present American interest” in order to “not only secure the reparation for an injury suffered to American interests, but protect the Department from criticism of intervention on behalf of foreign stockholder.” But with four-fifths of the firm in British hands, he cautioned Knox against the use of force:

Technically the citizenship of the American corporation (Emery) is unaffected by foreign ownership, but the presence of the fact complicates the question to such a degree as to preclude the suggestion of force. The foreign interest, however, would not seem to preclude the Secretary from securing, either an arbitration or other adjustment ... (USSD, roll 130)
The Emery case never went to arbitration. On 26 April 1909 a huge fire engulfed much of the Emery company’s Chelsea operations, destroying much of the plant. Meanwhile, in Nicaragua, two other American concessions, for gold mining and steamship services, exploded into controversy. Under growing pressure from Knox and the State Department, Zelaya appointed a respected Nicaraguan lawyer to negotiate a settlement of the Emery claim. The two sides finally signed an agreement on 18 September 1909. Its terms stipulated that the concession, the plant, and the equipment would revert to Nicaragua, while Emery would receive $600,000 in compensation. When he was interviewed some years later by an American journalist, Zelaya explained that “The Nicaraguan Government decided to pay the American company, as it wanted to keep on friendly terms with the United States Government.” (New York Times, 1913) The first compensation payment of $50,000 came from the Nicaraguan president’s personal bank account. The controversy surrounding the Emery claim was still not over, however.

6 PAYING THE CLAIM

On 1 December 1909 the U.S. Secretary of State broke off diplomatic relations with Nicaragua, contemptuously describing Zelaya as “a blot upon the history of Nicaragua”. (Papers Relating to the Foreign Relations of the United States, 1914) Zelaya responded by resigning, although this neither brought stability to Nicaragua, nor improved the country’s troubled relationship with the United States. However, it did stop any further payments toward settling the Emery claim: Zelaya’s initial payment was the only one that was made.

Samuel Segar, the Emery company’s British owner, decided to sell out, possibly as a result of the continuing uncertainty surrounding the claim. He approached the New York banking firm, Brown Brothers and Company. The company’s lawyer later recalled that Segar “was anxious to retire from business and he offered to sell the business out to Brown Bros.”

They did not care to buy it for themselves, but they interested two gentlemen in New York by the name of Williams, who were lumber merchants, and they were brought into the negotiations. The Williamses were willing to buy the lumber business as a going business, but they did not care to have anything to do with what they called the dead assets of the company, which were the claim against Nicaragua under the protocol and the real estate in Massachusetts. These had no direct relation to the business of the company, and so in order to put that deal through Brown Bros. & Co. bought the real estate in Massachusetts and the company’s claim under the Nicaraguan protocol, and the Williamses bought the rest of the company. (U.S. Senate, 1914)

Having acquired the Emery claim, Brown Brothers began to investigate its status and history, which involved several trips to Washington to go through the State Department’s files. In the course of this research, the firm’s lawyer learned that a Nicaraguan loan was being considered and that one purpose of the loan would be to enable Nicaragua to pay out the Emery claim. Shortly afterwards, in February 1911, the company wrote to the Secretary of State, offering to assist with the Nicaraguan loan: “we are interested in the George D. Emery Co.’s claim against Nicaragua, under the protocol of September 18, 1909, and that we have, therefore, a peculiar interest in the readjustment of that country’s finances.” (U.S. Senate, 1914)

Several months later President Taft introduced a bill in the Senate that would have provided a loan to Nicaragua, but the Senate refused to ratify it. The rebuff only encouraged Taft and Knox to change tactics. As Emily Rosenberg has shown (1999), the two men “never considered abandoning dollar diplomacy; instead, they bypassed congressional assent.” Brown Brothers subsequently arranged a Nicaraguan loan, which stipulated that an American become Collector General of Customs in Nicaragua, an individual “nominated by the bankers and approved by the State Department.” (Rosenberg, 1999) The bankers also acquired other assets.
Several years later, the Bryan-Chamorro Treaty formalized these arrangements. This gave the U.S. the right to build a canal through Nicaragua. In exchange, Nicaragua received three million dollars. Most of this money went to repay earlier loans and other debts, including the Emery claim. At the end of 1917, Brown Brothers received $485,000 “in final settlement of the Emery Claim.” (Denny, 1929)

7 CONCLUSION

In Insatiable Appetite: The United States and the Ecological Degradation of the Tropical World, Richard Tucker (2000) argues that American interest in the tropical world grew in tandem with its increasing power and its expanding internal market for rubber, coffee, bananas, and the like. The fate of Emery’s mahogany concession is a minor chapter in this much broader story. Its origins in the depletion of American walnut and its resolution in the carefully orchestrated re-organization of the Nicaraguan debt by New York bankers underscores the linkages that crossed continents and joined regions. The story of the Emery claim also sheds light on the complex relationship between the U.S. and Central America during the first years of the twentieth century, foreshadowing subsequent U.S. political and military interventions in the decades that followed.

If the story extended into the future, it also reached into the past. The first Europeans who entered the Caribbean basin were quick to appreciate mahogany’s many attractive properties, and the chronicle of its exploitation is inextricably linked with the European conquest. According to one authority, it was “probably the first wood of the Western Continent to attract the attention of European timber dealers.” (Mell, 1917) Such famous eighteenth century designers as Thomas Chippendale used mahogany extensively in their luxury products, although by the mid-nineteenth century mahogany furniture could be found even in the homes of English coal miners. Similarly, public offices and railway carriages featured the wood, increasingly as a veneer. The rapid growth of transportation networks facilitated mahogany’s extraction while simultaneously creating an insatiable appetite for its consumption. It was perhaps a fitting irony that as the Emery claim drew to a close in Nicaragua, the wood’s growing scarcity encouraged others to advertise their products as mahogany, creating a minor controversy over what constituted “true mahogany”. (Mell, 1917) Thus wood imported from the Philippines, itself a recent victim of American imperial ambition, was sold as “Philippine mahogany”, a marketing strategy denounced by foresters as bogus. As with so much else in this story, it was proving increasingly difficult to distinguish the real from the imagined.

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REFERENCES


New York Herald. 1909 [“Nicaragua Agent to Settle Claim,” 4 May 1909].


New York Times. 1913 [“Zelaya Blames Dollar Diplomacy for his Troubles,” 23 November 1913].


Vitta, José. 1946. La Costa Atlántica por el Ingeniero don José Vitta. Revista de la Academia de Geografía e Historia de Nicaragua 8(2): 1-46.

