

THE LOST EMERALD MINES OF ECUADOR: CONTRASTING PATTERNS OF EMERALD USE IN NATIVE SOUTH AMERICA

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Colombia is today one of the world's major emerald-producing countries, and there is uncontroversial evidence that the mines of the eastern Cordillera were exploited for more than five centuries before the Spanish conquest. In consequence, it is often assumed that sporadic archaeological finds of emeralds further south, in southwestern Colombia, in Ecuador, and in Peru, derive from these sources. In this paper I argue that these "southern" emeralds came from a source, or sources, in Ecuador. The only previous writer to consider this possibility was Samuel K. Lothrop (1937:188–189), and he came to no firm conclusion. Although the Spanish never managed to find the mines, their existence is well documented in early colonial historical accounts, and their products have been found archaeologically. In almost every respect, the pattern of emerald use in Ecuador and the Colombian Southwest differs from that of the emerald producing areas of the Colombian Altiplano.

EMERALDS IN THE EASTERN CORDILLERA OF COLOMBIA: HISTORICAL AND ARCHAEO- LOGICAL DATA

The Colombian emerald sources are located in the Eastern Cordillera, within, or close to, the heartland of the Muisca chiefdoms (Figures 1, 2). The Somondoco mine (now called Chivor, but originally named after a local ruler) (Fer-

nández de Oviedo 1959 [1534–1547], Volume III:114) lay just inside the eastern border of Muisca territory, overlooking the Llanos Orientales. The Muzo mines are on the opposite, western, flank of the Cordillera, near the headwaters of the Carare River, with easy access to the Magdalena Valley. At the time of European contact, Muzo was an independent, hostile polity outside the area of Muisca control (Rojas 1974:31–86). A third emerald deposit, at Coscuez, not far from Muzo, was not discovered until 1646, but the other two sources were in full production when the Spanish arrived, and we have good eyewitness descriptions of indigenous mining technology. Colonial accounts of Muzo (Aguado 1916–1917 [c. 1581], Volume II:339–499; Rojas 1974; Vázquez de Espinosa 1948[1628]: 308–309) and Somondoco (Pérez de Barradas 1951, Volume II:121–131) indicate fairly large scale opencast extraction, following beds of emerald-bearing shales (Groat *et al.* 2008: 99–100; Ottaway *et al.* 1994), and using the waters of the rainy season to wash the debris.

Despite the simple technology, productivity seems to have been high. At Muzo itself it was said that Spanish horses kicked up emerald fragments in the town square, and that cooks found emeralds in the crops of chickens (Otero 1948:32, 60). Archaeologically, a single tomb near San Cayetano is reported to have yielded

two hundred emerald beads (Arango 1943, Volume I:188), and the records of Spanish depredations during the pacification of the Altiplano give some idea of the treasure the conquistadors obtained. In October 1537 at Saxagipa (or Saxipa) they collected 1,424 pesos of fine gold, 1,700 pesos of tumbaga (gold-copper alloy), and 60 emeralds (Duque 1958:310). Two years later, after his expedition through the Muisca towns, during which he visited the Somondoco mine, sacked the cacique's capital at Tunja, and burned the temple at Sogamoso, Gonzalo Jiménez de Quesada shared out 1,630 good quality emeralds, without counting an unknown quantity of "esmeraldas bajas" (Pérez de Barradas 1951, Volume II:122). San Martín and Lebrija (1960 [1539]:187) give the grand total as 1,815 stones of various sizes and qualities. Acknowledging this richness, Jiménez de Quesada incorporated a hill strewn with emeralds into his coat of arms (Lane 2010: figure 1). Other documents, recording visits in 1577 and 1583 for the purpose of confiscating heathen religious items, mention numerous finds of emeralds in hidden sanctuaries that still functioned long after the conquest (Cortés 1965; Londoño 1989).

Historical sources, corroborated by archaeological finds (Figure 3), give a wealth of information about the role of emeralds in the religion and economy of the cordillera. Emerald jewelry was uncommon and actual specimens are few, though the cacique of Sichoca¹ is said to have owned rings encrusted with emeralds (Cortés 1960:247), Muisca warriors wore headbands of gold set with emeralds (Rojas 1974:106), and we have a few archaeological finds of perforated emerald beads (Arango 1943 [1924–1929] Volume I:188–189; Lleras-Pérez 1999:106, 108; Rojas 1974:107). In addition, the Ethnologisches Museum in Berlin has two little emeralds

from Leiva worked into conical shapes (catalogue number VA 2118).

Most emeralds, however, were left in their natural state, as crystals, and were deposited in offerings. Emerald crystals also figure in Muisca mythology, for example in the story of Goranchacha, first ruler of Tunja, whose mother was made pregnant by a ray of sun and who was born as an emerald before becoming a man (Simón 1882–1892 [1627], Volume II:320). Falchetti (2003:368–373) argues that Muisca offerings, like those of their present day Uwa neighbors, were carefully structured, and that the seeds, foodstuffs, metals, and emeralds embodied concepts of fertility, germination, and the development of life. A further reason for Muisca interest in crystals may be, as Reichel-Dolmatoff (1981:28) suggests, that the hexagonal shape had cosmic significance in itself, a view supported by the presence of quartz crystals alongside emeralds in the same votive contexts (Lleras-Pérez 1999:101–119).

Offerings were selected according to the needs of individual deities, or "demons" in colonial terminology. Gold and emeralds were offered to the dragon or serpent that lived in the lagoon of Guatavita (Simón 1882–1892 [1627], Volume II:245) and have been recovered archaeologically at both Guatavita (Bray 1978, number 29; Lane 2010:38) and the Laguna de Siecha (Botero 2006:143). It is also recorded that small emeralds and [Tairona] beads from Santa Marta were given to Cuchaviva, the rainbow, patron of pregnant women and of those sick with fevers (Simón 1882–92 [1627], Volume II:287).

Emeralds, often of poor quality and worthless as gem stones, (Egas de Guzmán and Gómez Garzón 1988 [1595]; Francis 2000), were deposited in sanctuaries and at other ritual sites, usually in combination with "idols" of wood or cotton, and with incense, textiles, cotton

¹ Sichoca is currently unidentified.

thread, *tejuelos* (button-shaped crucible ingots), pottery, featherwork, sea shells from the Caribbean, and miniature representations of human figures, animals, and everyday artefacts (Cárdenas 1990:49; Cortés 1960; Lleras-Pérez 1999; Londoño 1989). In colonial accounts and inventories, these human figurines are listed as *santillos*, “little saints” (the term *tunjo* is generally employed in today’s archaeological literature), and they are found all over Muisca territory. Emeralds were sometimes physically attached to *tunjos* (Lleras-Pérez 1999:102; Uribe 2012, figure 48), to figures carved from soft stone (Rojas 1974:110–112), to images made of wood or cotton (Cortés 1960:225; Fernández de Oviedo 1959 [1534–1547], Volume III:122), and to shells (Londoño 1989:108). From a cave at Paz del Río came marine shells containing emeralds and sealed with raw cotton, in association with shell necklaces and metal *tunjos* (Museo Nacional, Bogotá, catalogue number 791-A-791). Historical sources also report that emeralds were placed in the hollowed out stomachs of wooden images (Bray 1978, number 161), and a single *relación*, written in 1539, claims that emeralds were sometimes burned:

They are idolatrous. They sacrifice children, parrots and other birds to the sun. They burn emeralds and they say that the greater the lord, the more it does him honor to burn the finest stones for the sun (San Martín and Lebrija 1960 [1539]: 197).²

The complete document is reproduced verbatim by Fernández de Oviedo (1959 [1535–1557], Volume II:83–92).

² Son idólatras. Hacen sacrificios al sol de muchachos y papagayos y otras aves. Queman piedras esmeraldas y dicen que cuanto mayor es el señor tanto le es más honra quemar las mejores piedras para el sol.

The sanctuaries described in the literature on the extirpation of idolatry are long gone, but votive offerings (often in specially made pots; Bolinder 1937; Simón 1882–1892 [1627], Volume II:288) were buried at important places in the sacred landscape (Langebaek 1986; Lleras-Pérez 1999; Londoño 1989; Simón 1882–92 [1627], Volume II:76, 291–295) and were also stored in domestic houses (González-Pacheco and Boada Rivas 1990). Archaeologically, these offerings have been found in caves, lagoons, rivers, and springs, at mountaintop sites, agricultural terraces, settlements, and other open air localities. The presence of European glass beads, together with *tunjos*, ingots, and a handful of emerald crystals, in an offering at Tocancipá corroborates the historical evidence that the custom persisted after the Spanish conquest (Uribe 2012: figure 47).

Many of the same artifacts, including emeralds, also occur as grave goods in tombs (Boada 1987:76, 81, 1989:76–77; Broadbent 1970:15; Pradilla 2001:82; Rojas 1974:113; Silva 1945: 295), and, in some cases, the orifices of the body were closed with emeralds:

In the eyes, nostrils, mouth, and navel they put emeralds and gold ingots according to the wealth of each person (Simón 1882–1892 [1627], Volume II:310).³

Several colonial documents refer to the Muisca practice of mummification and the placing of offerings inside the body cavity of the eviscerated corpse, or within its wrappings:

... by the efforts and hands of our soldiers those stomachs and filled bellies were later investigated and cleaned out, and in them was a great quantity of gold and of emeralds that were lost there with the gold

³ En los ojos, narices, boca y ombligo les ponían algunas esmeraldas y tejos de oro, según el caudal de cada uno.

(Fernández de Oviedo 1959 [1534–1547], Volume III, 128).⁴

Further information on mummies is given by Cárdenas (1990:43); Londoño (1989:111–112); Pérez de Barradas (1951, Volume II: 517–526, 1958, Volume I:119); and Simón (1882–92 [1627], Volume II:310).

Emeralds were traded among the communities of the Eastern Cordillera, and there was a famous market devoted exclusively to emeralds at Turmequé (Pérez de Barradas 1951, Volume II:152; Zamora 1980 [1701], Volume II:25). The most important long distance trade route ran northwards, via the Magdalena Valley, linking the emerald-producing cordillera with the Caribbean coast and the Tairona towns near what became the Spanish port of Santa Marta. The Muisca exported copper, salt loaves, painted textiles, and emeralds; in return the Magdalena peoples sent gold, and the Taironas provided sea salt, conch shell trumpets, beads, and raw shell for the ornaments that are common on Muisca and Guane sites (Pérez de Barradas 1951, Volume II:155).

The chiefdoms of the Altiplano did not have a class of professional long-distance merchants, analogous to the *mindaláes* of southern Colombia and northern Ecuador. Instead they relied on trickle-trade, or down-the-line trade. Simón (1882–1892 [1627], Volume II:191) describes how Caribbean shells reached the Muisca, “passing from hand to hand” at ever-increasing values (for detailed discussion of the Muisca commercial system see Kurella 1993, 1998:202–205; Langebaek 1987; Pérez de Barradas 1951, Volume II:145–162).

⁴ . . . e por la diligencia e manos de nuestros soldados, fueron después digestos e alimpiados aquellos estómagos e vientres rellenos, en que se hobo mucha cantidad de oro y de esmeraldas que allí estaban perdidas con el oro.

The coastal end of the emerald route is poorly documented. The earliest historical reference goes back to 1514 when Pedrarias called at Santa Marta on his way to Darién. From a village sacked by Spanish troops, he obtained some jewels of gold and emeralds or emerald matrix (“*madres de ellas*”), other precious stones set in gold, and also some amber (Herrera y Tordesillas 1934–56 [1601–1615], Volume III: 436–7). A little later, Governor Jerónimo Lebrón acquired an emerald from a Tairona community on the north flank of the Sierra Nevada de Santa Marta (Langebaek 1992:148), and Fernández de Oviedo recounts a personal experience that occurred in 1514:

. . . in Santa Marta, at the time when the fleet sent by the Catholic king don Fernando to Castilla de Oro touched there, I jumped ashore with others, and we took as much as a thousand or more pesos of gold, some mantles, and Indian things, among which we observed emerald *morallas*⁵ and cornelians, and jaspers, and chalcedonies, white sapphires, and fossilized amber . . . (Fernández de Oviedo 1986 [1526]: 160–61; see also López de Gómara 1965 [1552], Volume I:127).⁶

⁵ *Moralla* is a word used in Colombia, from colonial times to the present, for low grade emerald material. Sinkanas (1981:432) defines *moralla* as “greenish to nearly white fragments, masses, or even portions of crystals, that are so filled with inclusions as to be opaque”. They are not of gem quality, but can be carved or set into jewelry. In colonial records they are recorded separately from true emeralds.

⁶ . . . en Santa Marta, al tiempo que allí tocó el armada que el Católico rey don Fernando envió a Castilla del Oro, yo salté en tierra con otros, y se tomaron hasta mil y tantos pesos de oro de ciertas mantas y cosas de indios, en que se vieron plasmas de esmeraldas y corniolas y jaspes y caicedonias y zafires blancos y ambar de roca . . . [In colonial Spanish the word *plasma* refers to cloudy, imperfectly crystalized stones, i.e., *moralla* (see Note 5 and Lane 2010:227); it also incorporates the idea that *plasmas* represent an early stage of emerald formation].

He believed that these stones were traded from the interior, information confirmed by Fray Pedro de Aguado who noted that emeralds circulated in the province of Santa Marta.

The Indians who had the emeralds:

... gave information that these had come down to them from certain peoples who lived far away from their region towards the south of that province. It was this land from which the emeralds were brought, from what they now call the New Kingdom of Granada (Aguado 1916–1917 [c. 1581], Volume I:102).⁷

There is reliable information that looters have occasionally found emeralds in Tairona tombs, but the only concrete evidence for the Caribbean end of the trade is a group of figures carved in pure Tairona style but made of emerald *moralla* (Purini 2005:170–171). Unfortunately these have no context. The few unpublished and undocumented emeralds found in the Sinú region may also be evidence of trade with the cordillera, but this question remains open.

No historical source mentions Muisca interest in southwestern Colombia. Archaeology suggests that contact with areas west of the Magdalena River was minimal, and neither Muisca pottery nor metalwork has been found west of the Cordillera Central, which separates the Magdalena and Cauca Valleys. Nor have typical Pacific products, such as spondylus shell and platinum artefacts, been found on Muisca sites.⁸ Figure 3 shows a thinning out of emerald

distribution between the Muisca-Cordilleran concentration and the southwest Colombian-Ecuadorian group centered on the Cauca Valley, the western Cordillera and the Tumaco-Tolita region of the Pacific coast (Figure 3, Sites 1, 9, 10). The regional cultures of this southwestern area traded with each other, shared many similarities in pottery and metalwork, and are grouped by Colombian specialists into a distinct Southwestern Archaeological Tradition that flourished during the early centuries A.D. (Bray 2005:130–135; Plazas and Falchetti 1983). In both time and space, the Muisca and Southwestern commercial systems are completely separate.

Relative to the large amount of (often illegal) excavation in the intermediate zone between these two concentrations, sites with emeralds are few there, and most of the discoveries consist of single stones (Arango 1943 [1924–1929], Volume I:153, Volume II:202, 306). The only documented finds are two old discoveries in Quimbaya territory on the flanks of the middle Cauca Valley: a hemispherical emerald “from an Indian grave” somewhere in the Quimbaya region (White 1876), and ear ornaments of emeralds and gold beads from a Classic Quimbaya tomb, of the first millennium A.D., at Finca Moravo (Figure 3, Site 11) (Baessler 1901; Botero 2006:164). A third emerald, in the collections of the Museo del Oro (Bogota) (accession number 026075), consists of a bead threaded onto a wire nose-ring. The evidence is scanty, but the treatment of emeralds in the Middle Cauca region is more in keeping with the Ecuadorian tradition than with Muisca usage.

In summary, the eastern Cordillera had a distinctive tradition of emerald use, based on

⁷ ... daban por noticia los indios que las tenían que auian baxado de çiertas gentes que habiaban muy apartados de su region, hazía la parte del Sur de aquella prouincia. Era tierra de do[nde] se trayeron las esmeraldas, lo que agora llaman el Nuevo Reyno de Granada.

⁸ A bead of spondylus was found close to the pre-Muisca burial of a child at Tunja, in the grounds of the Universidad Pedagógica y Tecnológica de Colombia.

Another burial from the same locality gave an uncalibrated C14 date of A.D. 90–260 [Beta 2164121] (Pradilla 2007:25).

sources that are still exploited today. Archaeologically, this tradition is associated with the Muisca, Muzos, and their neighbors from c. A.D. 800–1000 until the Spanish conquest and beyond. Although a few beads have been recorded, the majority of emerald finds consist of unmodified crystals and *moralla* used as votive and funerary offerings rather than as jewelry. Cordilleran emeralds were traded to the Caribbean coast in prehispanic times, and were exported to Europe during the colonial period through the ports of Santa Marta and Cartagena. The Southwestern or “Ecuadorian” tradition of emerald use differs from this in every way.

HISTORICAL REFERENCES TO ECUADORIAN EMERALDS

From the earliest years of the Spanish conquest, the Pacific coast of central and northern Ecuador was renowned for its emeralds.

... because, from its first discovery until today, they have found, and still find, emeralds as good as, and of as many carats as, the ancient ones of Alexandria or those which Ethiopia enjoys (Cabello Balboa 1945 [1583]:6).⁹

For Cabello Balboa, writing at a time when boundaries were still poorly defined, the “Provincia y Tierra de las Esmeraldas” extended from Cabo Pasao [now Pasado], north to the Bahía [Bay] of Buenaventura in Colombia. Ecuador’s most northerly Pacific province and its major river have retained the name Esmeraldas to the present day.

Despite the quantity of historical data, modern writers, and especially archaeologists, have largely ignored it (e.g., Doyon 1988; Shimada 1998; Shimada and Merkel 1993; Szászdi 1982–1983). This negative view can perhaps be traced back to the great Ecuadorian geographer and geologist, Teodoro Wolf, who asserted that it was geologically impossible for emeralds to come from Esmeraldas, that there was no proof that emeralds occurred naturally anywhere in the country, and that the emeralds encountered by the conquistadors had been brought from Colombia (Wolf 1892:329, 641). It has to be said that more recent geological explorations have not found any emerald deposits, but this negative view ignores the weight of historical information, which is both abundant and consistent. Although the chronicles have their limitations by today’s historical standards, and cannot always be taken at face value, many of the accounts come from people who describe what they had personally seen, using phrases like *yo ví*, *he visto*, and *testigo que* [I saw, I have seen, I witness that]. All the major chronicles mention Ecuadorian emeralds, as do sixteenth century *relaciones* [accounts], *visitas* [inspection tours] and bureaucratic correspondence (for a compilation see Navarro 1986). In several of these texts, emeralds are discussed in a matter-of-fact way, alongside gold and silver, as just one of the sources of mineral wealth available to the conquistadors.

For the early sixteenth century three separate, but interconnected, cultural and commercial systems can be recognized in this area: (1) the indigenous pre-Inca system, (2) the imperial Inca system that was superimposed on this, but never completely replaced it, and (3) the colonial system that, for a time, coexisted with both the others. A single person, alive between 1520 and 1580, could have participated in all three. Although the documentary evidence begins only with the European arrival, Inca influence on the Ecuadorian coast was minimal, and many of the

⁹ ... porque, de su primera descubrimiento hasta del día de hoy, se han hallado y hallan esmeraldas tan buenas y de tantos quilates, como las viejas de Alejandría o las que goza Etiopía.

customs the Spanish chronicles describe are probably pre-Inca survivals.

The quality of published information ranges from the speculative to the very specific. At the speculative end of the range is the statement by the eighteenth century historian Padre Juan de Velasco, based on no obvious authority, that the royal insignia of the ruler of the Caras, who lived near Quito, was an emerald worn on the forehead (Velasco 1978 [1788]:92). More reliable are accounts by people present during the early years of the conquest. Juan Ruíz de Arce, for example, notes that the Spanish obtained “six reasonable emeralds” at San Mateo, near Esmeraldas (Ruíz de Arce 1968 [c. 1543]:414), and a little later, at Tumbes, six more stones, together with a little gold and silver (*ibid.*: 419).

Perhaps the most famous emerald in South America is the great emerald of Manta, described by Pedro Cieza de León:

... in this district they affirm that the lord of Manta has, or used to have, an emerald of great size and value, which their ancestors held in great veneration and esteem. On certain days it was displayed in public, and they worshiped and revered it as if there were some deity within it. If any Indian, man or woman, was sick, they performed their sacrifices, then went to pray to the stone. They affirm that other stones were its servants. The priest, who talked to the demon, gave them to understand that by means of these offerings they would be returned to health. ... People who were sick came from all parts of the interior to the town of Manta to make sacrifices and to offer their gifts. ... And they say that this stone is so valuable and precious that they were unwilling to say anything about it. Even though the principal lords have been severely threatened, they will never

tell what they know, even if they are all killed, so great was the veneration in which it was held (Cieza de León 2005 [1553]:145–146).¹⁰

Skeptics could argue that there are other possible explanations for this silence: that the coastal peoples did not know exactly where their emeralds originated, or that the conventional view is correct and the mines were imaginary. However, the Spanish themselves had no such doubts. Cieza de León’s account agrees with one by Bartolomé de Las Casas that gives essentially the same information, adding that the sick visitors would bring other emerald stones to offer, “por persuasión del sacerdote”, so that their health would be restored (Las Casas 1967 [1552–1561], volume I:658). The name given to the great emerald at the time of European contact was *Umiña*, a Quechua word defined in Diego González Holguín’s dictionary of 1608 as a generic term for “piedras preciosas”. Emerald itself was *Komir* [green] *Vmiña* (González Holguín 1989 [1608]:354).

Girolamo Benzoni (1962 [1665]:164) says that the emerald of Manta was as big as a hen’s egg; Garcilaso de la Vega, in his *Comentarios Reales*, implausibly upgrades this to the size of an

¹⁰ ... en esta comarca afirman que el señor de Manta tiene o tenía una piedra de esmeralda de mucha grandeza y muy rica. La cual tuvieron y poseyeron sus antecesores por muy venerada y estimada. Y algunos días la ponían en público, y la adoraban y reverenciaban como si estuviera en ella encerrada alguna deidad. Y como algún indio o india estuviese malo, después de haber hecho sus sacrificios iban a hacer oración a la piedra, a la cual afirman que hacían servicio de otras piedras, haciendo entender al sacerdote que hablaba al demonio, que venía la salud mediante aquellas ofrendas. ... de muchas partes de la tierra adentro venían los que estaban enfermos al pueblo de Manta a hacer sacrificios y a ofrecer sus dones. ... Y dicen que esta piedra es tan grande y rica que jamás han querido decir de ella, aunque han hecho hartas amenazas a los señores principales, ni aún no dirán jamás a lo que se cree, aunque los matan a todos, tanta fue la veneración en que lo tenían.

ostrich egg, and adds that pilgrims would bring:

... gifts of smaller emeralds, for their priests and the cacique of Manta put it about that it was a very agreeable offering for their goddess, the great emerald, to be presented with smaller emeralds, which were her daughters. By means of this covetous doctrine they collected a great number of emeralds in this place, where they were found by Don Pedro Alvarado and his companions, among whom was Garcilaso de la Vega, my father (Garcilaso de la Vega 2009 [1609]:465).¹¹

The great emerald was hidden when the Spanish arrived, and was never recovered. Although the younger Garcilaso was writing more than eighty years after the first contact and never personally visited coastal Ecuador, his family connection gives the story some historical credibility.

Martín de Carranza's *Relación de las Provincias de las Esmeraldas que fue a pacificar el capitán Andres Contero* describes an expedition by the corregidor of Guayaquil, in 1568–1569, from the highlands towards the north coast, and notes:

They say there is a large town that is called Císcala and which is at peace with the other provinces, and this town is safe for everybody. And there they hold fairs or markets, and the Tacamas [from Atacames] bring gold and emeralds to sell, and the Campaces and Pidres [?] bring salt and

fish, and the Beliquiamas bring clothing and cotton, and there they do their trading (Carranza 1965 [1569]:89).¹²

This information is based on hearsay evidence. The expedition did not visit Císcala, and the precise location of the town remains unknown.

The most reliable accounts are those of eyewitnesses who took part in the conquest or who arrived soon afterwards as clerics or bureaucrats. Although their information is not presented in numerical form, the contact-period literature shows that Indian groups all along the coast, from Tumaco to Manta and beyond, possessed large quantities of emeralds. Diego de Trujillo, who took part in Pizarro's expedition of 1531, describes Coaque as "a large village very rich in gold, silver, emeralds and other colored stones", and records that:

The only person in this town of Coaque who knew about emeralds was Fray Reginaldo [de Pedraza] who collected more than a hundred and sewed them into a doublet, and from there he returned in Pedro Gregorio's ship to Panama where he died, and the emeralds were taken from him, and afterwards we made a gift of them to His Majesty (Trujillo 1968 [1571]:14; see also Szászdi and León Borja 1980:41).¹³

¹¹ ... traer presentes de otras esmeraldas menores; porque los sacerdotes y el cacique de Manta les hacian entender que era sacrificio y ofrenda muy agradable para la diosa esmeralda mayor que le presentasen las otras menores, porque eran sus hijas; con esta avarienta doctrina juntaron en aquel pueblo, much cantidad de esmeraldas, donde las hallaron Don Pedro de Alvarado y sus compañeros, que uno entre ellos fue Garcilaso de la Vega, mi señor.

¹² Dicen que hay un pueblo grande que se llama Císcala, que tiene paz con las demás provincias, y aquel pueblo es seguro a todos, y allí se hacen ferias o mercado, y los Tacames traen oro y esmeraldas a vender, y los Campaces y Pidres [?] llevan sal y pescado, y los Beliquiamas llevan ropa y algodón, y hacen allí sus mercados.

¹³ En este pueblo de Coaque nadie conoció las esmeraldas sino fue Fray Reginaldo que juntó más de ciento y tantas, y las cosió en un juvón, de allí se volvió a Panamá en el navío de Pedro Gregorio, y allí murió, y le sacaron las esmeraldas, y después hizimos todos servicio a S.M. de ellas.

Augustín de Zárate's chronicle of this event indicates that others were less lucky: In the town of Coaque were found some very fine emeralds

... but many of them were destroyed or broken, because the people who went there had so little experience of this kind of stone that they thought true emeralds, like diamonds, could not be broken by hammering. Believing that the Indians were deceiving them with fake jewels, they hammered these with stones, and in this way destroyed emeralds of very great value (Zarate 1968 [1555]:146).¹⁴

Miguel de Estete adds that a piece of one of the largest emeralds "that was worth many ducats" ended up in the hands of the Queen of Spain (Estete 1968 [1535–1540]:358). The unfortunate soldiers must have been laughing stocks, and the incident is mentioned in nearly every chronicle of the time. It is interesting, and consistent with this story, that no emeralds are mentioned in the 1531 record of the Crown's share of Pizarro's booty from Coaque (Hampe Martínez 1989), though references become frequent within a few years after that date.

In November 1535, only two years after the fiasco at Coaque, Licenciado Gaspar de Espinosa wrote in a letter to Charles V: "In the provinces of Quito Capitán Benalcázar has discovered . . . the river where the emeralds originate" (Andrade 1978:6). In another royal letter, dated November 1538, Padre Vicente Valverde noted that:

... in the province of Puerto-Viejo . . . there are, and have been, riches, a great occurrence of emeralds, which is a treasure of great value . . . the natives have them and give them to their masters (Andrade 1978:6).¹⁵

Valverde was unable to find out where the stones originated, but the following year he persuaded Jerónimo de Olmos to make an expedition to discover the mine (see below).

Chronicles and documents like these, and there are several of them from both Spain and Ecuador (Szászdi and León Borja 1980), suggest that there was no shortage of emeralds in western Ecuador, not only along the coast, but also inland. A *relación* of 1576 reports that the inhabitants of Puerto Viejo:

... extracted from the Indians a lot of gold and emeralds, because they were found in that territory, but they were unable to discover the mine although they put much effort into it (Valverde and Rodríguez 1965 [1576]:173).¹⁶

Zárate (1968 [1555]:167) notes that during the march from Puerto Viejo to Quito in 1534 Pedro de Alvarado found a great abundance of emeralds in all the towns he passed through, and, in another incident, Capitán Gonzalo de Olmos looted more than two *fanegas* (over one hundred kilos) of emeralds from a single town on the Coaque River (Szászdi and León 1980: 22). Finds like these, exaggerated or not, clearly raised expectations, and Salomon (1987:213)

¹⁴ En este pueblo de Coaque se hallaron unas esmeraldas, y muy buenas . . . y muchas se perdieron y quebraron porque los que allá iban eran tan pocos prácticos en este género de piedras, que les pareció que para ser finas las esmeraldas no se habían de quebrar con martillo, como los diamantes; y así, creyendo que los indios los engañaban con algunas piedras falsas, las daban con una piedra; y así destruyeron grandísimo valor destas esmeraldas . . .

¹⁵ . . . en la provincia de Puerto-Viejo . . . hay y ha habido riqueza de muy gran ser de piedras esmeraldas, que es tesoro de gran valor . . . los naturales las tienen y dan a sus dueños.

¹⁶ . . . sacaron de los indios mucho oro y esmeraldas, porque en aquella comarca las había y no se ha podido descubrir la mina dellas, aunque se ha puesto mucha diligencia.

describes an expedition of 1563 to a highland site near Ingapirca with the aim of robbing “a huaca and hidden cache in which there are over a million in gold and emeralds.” The emeralds never materialized, but the confidence in their existence is significant in itself.

It is impossible to believe that such large quantities of material were brought in from outside, and I have not found any sixteenth century account suggesting that the Ecuadorian emeralds were exotic or imported from Colombia. Instead, the documents make a clear distinction between the emerald sources of the New Kingdom of Granada and those of Ecuador (see, for example, Fernández de Oviedo 1959 [1534–1547], Volume I:183–185), and all their authors share a conviction that the Ecuadorian examples have a local origin. Thus, Zárate, describing the coast below the equator, writes:

The men wear short shirts down to the navel, leaving their private parts exposed. They wear tonsures almost like friars. . . . They delight in wearing many golden jewels in their ears and nostrils, chiefly emeralds, which are found only in that region. Although the Indians would never reveal the sources, it is believed that the emeralds originate there, since some have been found mixed with pebbles or stuck to them—a sign that they were formed there (Zárate 1968 [1555]:119–120).¹⁷

The use of emerald jewelry continued at least to the end of the century, when the semi-autonomous “Mulatos de Esmeraldas” (Cabello

Balboa 1945 [1583]:19–22; Lane 2002:24–39), now transplanted to Coaque, still had in their possession many emeralds in the form of necklaces, bracelets, and bands (Szászdi and León 1980:12). In the first decade of the seventeenth century, at the invitation of the Indians themselves, Father Pedro Romero undertook a visit of conversion to the province of Esmeraldas. He was well received there, and a document of the period comments that:

They showed themselves so grateful and happy that, laden with gold, silver and emeralds, [the Indians] offered the Father a very rich treasure (Alcina and de la Peña 1976:84).¹⁸

What happened to the treasure is not recorded.

Overland trade routes are difficult to reconstruct, but emeralds also feature in maritime commerce. The best documentation is the description of the trading balsa captured by Bartolomé Ruiz, Pizarro’s pilot, off the Ecuadorian coast near San Mateo Bay, at the mouth of the Esmeraldas River, in 1525 (Caillavet 1998: 73–75; Sámano 1968:9–11). The raft’s base was Çalangane (Salangome), a confederation of four towns in Manabí (McEwan and Silva 1989), and the cargo included gold and silver items, precious stones, and clothing made of cotton and camelid wool. These were exchanged for red spondylus shells (*mullu*) along the coast.

. . . in certain strings of beads there were little emerald stones and chalcedonies and other stones, and pieces of crystal and resin. They bring all this to trade for fish shells, from which they make coral-colored beads and white ones, and the vessel was almost filled with these (Sámano 1968

¹⁷ Los hombres traen unas camisas cortas hasta el ombligo y sus vergüenzas defuera. Hácense las coronas casi a la manera de frailes . . . Précianse de traer muchas joyas de oro en las orejas y en las narices, mayormente esmeraldas, que se hallan solamente en aquel paraje, aunque los indios no han querido mostrar los veneros dellas; créese que nascen allí porque se han hallado unas mezcladas y pegadas con guijarros, que es señal de cuajarse dellos.

¹⁸ Tan agradecidos y gozosos se manifestaron que, cargados de oro, plata y esmeraldas ofrecieron al Padre un tesoro riquísimo.

[1527–1528]:11).¹⁹

This maritime trade route seems to have continued southward to Peru, and not all the merchants were native Ecuadorians. In 1970 María Rostworowski de Diez Canseco published an anonymous document titled “Aviso de el modo que había en el gobierno de los indios en el tiempo del inga y como se repartieron las tierras y tributos”, possibly based on a lost manuscript by Domingo de Santo Tomás of the early 1540s, which refers to the merchants of Chincha on the South Coast of Peru. The *Aviso* does not specifically mention balsas, though Pedro Pizarro noted that “this lord of Chincha [had] a hundred thousand balsas at sea” (Hocquenghem 1993:704). This figure is unrealistic, but the *Aviso* goes on to claim that the Chincha traders:

... went to Quito and Puerto Viejo, from which they brought many gold beads and many valuable emeralds, and they sold them to the caciques of Ica, who were great friends of theirs and were their closest neighbors. And, in consequence, many emeralds have been taken from the tombs of the dead lords in Ica (Rostworowski 1970: 171).²⁰

One such episode of looting, documented in several chronicles, took place in the years before 1550, when one of Gonzalo Pizarro’s captains,

¹⁹ ... en algunas sartas de quantas venian algunas pequeñas piedras de esmeraldas, y caçadonias y otras piedras y pedaços de cristal y anyme todo esto trayen para rescatar por unas conchas de pescado de que ellos hazen quantas coloradas como corales y blancas que trayan easy el navio cargado dellas.

²⁰ ... iban a Quito y a Puerto Viejo, de donde traían mucha Chaquira de oro y muchas esmeraldas ricas y las vendían a los caciques de Ica, que eran muy amigos de ellos y eran sus vecinos mas cercanos y así se han sacado muchas esmeraldas de los sepulturas de los caciques muertos de Ica.

Juan de la Torre, excavated the tomb of an Ica noble and came away with a rich treasure of gold and silver items and some very fine emeralds (Menzel 1976:19).

The accuracy of the *Aviso* has been questioned (Ramírez 1995), and Sandweiss and Reid (2016) argue that direct long distance trade between Chincha and Ecuador did not begin until the incorporation of Chincha into the Inca empire and the Inca conquest of Ecuador in the 1520s, though trickle-down trade, along both coastal and overland routes may go much further back in time (Caillavet 1998; Hocquenghem 1993, 1995). The *Aviso* does not specifically list spondylus beads (*mullu*) among the items traded from Ecuador, but excavations in the cemeteries of Old Chincha yielded artifacts of *mullu* and complete spondylus valves, ranging in date from late pre-Inca to early colonial (Kroeber and Strong 1924). Nevertheless, the quantity of spondylus excavated at localities in the Chincha Valley is unexpectedly small, and nearly all of it is from Inca-related sites (Sandweiss and Reid 2016:318–319). In the other direction, not a single Chincha export item has been recorded from Ecuador.

Emeralds, like *mullu*, attained their widest distribution under the Incas, when the area from northern Ecuador to the north of Chile and Argentina formed a single commercial system under the control of the state. Although the Colombian mines of Muzo and Somondoco were well beyond the area of Inca influence, the historical sources make it clear that emeralds were thoroughly embedded into the lifestyle of the Inca ruler and the elite. The logical source for these emeralds is Ecuador.

At the first encounter between Pizarro and Atahualpa, in 1532, the Inca appeared with a necklace of large emerald beads (Estete 1968 [c. 1535–1540]:374) and, after the battle of Cajamarca, the booty seized from his camp included

fourteen emeralds (Xerez 1968 [1534]:231). There were also emeralds in the ransom paid after Atahualpa's capture. The Notary Pedro Sancho, who recorded the share-out of the treasure, mentions gold, pearls, and emeralds, but, unfortunately, he gives the figures only for precious metals (Lane 2010:250, note 3; Sancho 1872 [1534]:131). The portion of the ransom given to Pizarro as his personal share included Atahualpa's litter, with a covering of gold and emeralds worth twelve thousand pesos (Gutiérrez de Santa Clara 1963 [c. 1600]:229). It is also reported that Atahualpa was offered drinks laced with ground emeralds (Mena 1968 [1534]:154), and that nobles wore clothing adorned with silver, emeralds, and precious stones (Cieza de León 2005 [1553]:228).

The interest in emeralds extends back into the reigns of earlier Inca rulers, although these stories must be based more on hearsay evidence than direct observation. Like Atahualpa, Huayna Capac was carried in a litter encrusted with gold and emeralds (Gutiérrez de Santa Clara 1963 [c. 1600]:215–216). Sinchi Roca's attendants carried sunshades ornamented with gold leaves and emeralds (Montesinos 1920 [1644]:86), and at festivals the Inca gave his nobles and caciques "shirts of gold and silver, and vessels of gold and silver, and necklaces and bracelets and other jewels of emeralds, turquoises, and other stone" (Falcón 1918 [1567]:154).²¹

Even allowing for misidentifications and exaggeration, it seems that emeralds were available in some quantity. After the conquest, the Inca still retained a store of emeralds, and during the search for Tupac Amaru in the forests of Vilcabamba Captain Martín de Meneses seized the idol of the sun and with it a great deal of gold, silver, and precious emeralds (Murúa 1987 [1611–1616]:299).

²¹ . . . camisetas de oro y plata y collares y brazaletes y otras joyas de algunas esmeraldas y turquesas y otras piedras.

Emeralds were also used in architectural decoration. The Coricancha temple in Cusco had emeralds set into the royal thrones (Cieza de León 2005 [1553]:360), and Huayna Capac is said to have given the priests at Pachacamac quantities of gold, silver, and emeralds to decorate the Temple of the Sun (Cieza de León 2005 [1553]:444). At Tomebamba (Tumipampa), near Cuenca: "The doorways of many of the rooms were very elegant and brightly painted, with precious stones and emeralds set into them. . . ." (Cieza de León 2005 [1553]:30; see also Las Casas 1967 [1552–1561], Volume I:293).²²

One of the structures at Tomebamba was called Mullo Camcha [Mullucancha], and:

The walls of this house or palace were adorned inside with a certain inlay of mullo, which are small beads made from sea shells, very similar in color to fine coral. . . . (Cabello Balboa 2011 [1583]:433).²³

There is no evidence that the Inca state directly controlled any emerald mines, and there is only sketchy information about the mechanisms by which emeralds moved from the producers to the imperial storehouses. Cieza de León (2005 [1553]:145) notes that the Indians paid tribute in gold and emeralds to Huayna Capac, and other emeralds were obtained during Huayna Capac's expedition from the Ecuadorian highlands to the coast. After a battle somewhere in the interior, the Inca drove the enemy back to their settlements on the coast near Coaque and captured an immense quantity of:

²² Las portadas de muchos aposentos estaban galanes y muy pintadas, y en ellas asentadas algunas piedras preciosas, y esmeraldas . . .

²³ Las paredes de esta casa o palacios eran guarnecidas por dentro de cierta ataracea de *mullo* que son unas cuentezuelas hechas de conchas de la mar muy semejantes en la color a fino coral. . . .

... very rich spoils, and very rich emeralds and turquoises, and a great quantity of very valuable *mollo*, which is a substance made out of sea shells, more esteemed by them than gold or silver (Sarmiento de Gamboa 1965 [1572]:264; see also Cabello Balboa 2011 [1586]:454).²⁴

Martín de Murúa describes the same campaign, and his list of the booty includes very large and fine emeralds of a kind never before seen by the Inca (Murúa 1987 [1611–1616]:133). Murúa was writing some ninety years after these events but, taken at face value, his comment suggests that, for the first time, the expanding Inca state was getting close to a source of emeralds. The lord of Puná Island drew his own conclusions from the incident and sent messengers inviting Huayna Capac to visit him:

Ambassadors came to him on behalf of the lord of the Island of Puná and they brought him presents of great esteem and value, such as fine emeralds, *Mulli*, and very rich and delicate cotton clothing (Murúa 1987 [1611–1616]:134).²⁵

Citations like these open another line of inquiry. Apart from the great idol of Manta, emeralds are not usually described as items of symbolic or ritual importance, nor are they singled out for special attention. Garcilaso de la Vega (2009 [1609]:443) notes that the Incas valued emeralds more highly than turquoise, but again and again the chroniclers use the formula “emeralds and other precious stones”, as if emeralds are just one (though perhaps the most

prized) of a set of minerals that frequently includes turquoise and quartz. The value of these stones to the Incas seems to derive from their exotic nature (they do not occur everywhere) and from the fact that they provide a suite of precious materials in a variety of different colors. The ubiquitous *mullu*, red, orange, or purple spondylus shell from the Ecuadorian and northernmost Peruvian coasts, also fits into this concept. Although, unlike the other materials, it had an important role in ritual life, it was also employed, like any other “stone”, for beads, pendants, and mundane artefacts.

WHERE WERE THE ECUADORIAN EMERALD SOURCES?

We have no first-hand information about Ecuador’s emerald mines. There are uncorroborated reports of emerald deposits in the Ecuadorian Oriente, one at an unspecified locality on the eastern slope of the Andes (Brezzi 2003:254), the other in the Oriente, within about one hundred miles of Puerto Napo (Sinkankas 1981:438). Apart from these unreliable reports, early colonial writers refer only to areas on the western slopes of the Andes.

As the name suggests, there were persistent rumors of prehispanic emerald deposits in the colonial province of Esmeraldas, but these accounts are short on detail. In 1582, Ruy Díaz de Fuenmayor, in his description of the Provincia de las Esmeraldas, merely notes that:

Its demarcation is from the limits of the city of Portoviejo along the southern coast as far as the río San Juan [in Colombia], at the limits of the jurisdiction of Popayán. . . . It is a land of mountains. It has many rivers, and there are reports of much gold in them; and likewise there are in this province the rich mines of emeralds; we have some information about both of these because the Indians wear a lot of gold.

²⁴ . . . despojos muy ricos y muy ricos esmeraldas y turquesas y gran fuerza de mollo, muy rico, que es cierta masa hecha de conchas de la mar, más estimado entre ellos que oro ni plata.

²⁵ Le llegaron embaxadores de parte del señor de la Puná y le truxeron presentes de mucha estimación y valor como fue de esmeraldas finas, de Mulli, y ropa de algodón muy rica y delgada.

And there . . . one finds the emeralds named after Portoviejo, which are worked by the Indians (Díaz de Fuenmayor 1991 [1582]:312).²⁶

Antonio Vázquez de Espinosa, who was in Ecuador c. 1614, comments that the Mulatos of Esmeraldas:

are very handsome and they all wear gold nose ornaments in their nostrils, gold plaques on their breasts, and gold ear pieces in their ears; I myself saw them; as for emeralds, it is certain that there are rich mines of these in this province and that they are finer than those from Muzo (Vázquez de Espinosa 1948 [1628]:351).²⁷

Several colonial authors shared this view, and the belief was persistent. In 1771 Fray Juan de Santa Gertrudis was told that the Jayapa [Cayapa] Indians of the interior had emeralds in their possession, and knew the source in a quebrada in the mountains (Brezzi 2003:252), and from the nineteenth century there is a curious account of a lost Jesuit mine accessible by the Bichele River (possibly the Viche River, a tributary of the Esmeraldas River; Bollaert 1860:83–84). Nevertheless, the mines of Esmeraldas may be more legendary than real, though the headwaters of the Esmeraldas River are close to the pueblo of Sigchos (Figure 5), a

more plausible source of emeralds. The majority of sixteenth century documents, including the most reliable, locate the emerald sources somewhere in central Ecuador in the region behind Portoviejo and Manta. Antonio de Herrera y Tordesillas (1934–56 [1601–1615], Volume I:130), summarizing the work of earlier writers, repeats the claim that the emeralds from the mine near Manta are the finest in the Indies, and gives the prevailing view on emerald formation—that they are born within the rocks, where they form veins that gradually coalesce into crystals, originally half white and half green, before achieving their full perfection. The idea that emeralds become greener as they mature in the ground was general belief at the time (*e.g.*, Garcilaso de la Vega 2009 [1609]:443; Vázquez de Espinosa 1948 [1628]:308; see Bray *et al.* 2005, figure IV.76).

The lowlands around Manta and Puerto Viejo are geologically unsuitable for emerald formation, but several early writers draw attention to the hinterland behind these towns. Padre Velasco, not the most trustworthy of authorities, asserts that “beryl, a kind of rock crystal with milky clouds, is found in the cordillera de Cubillín which separates the provinces of Riobamba and Huamboya” (Velasco 1977 [1788]:94). Because emerald is the chromiferous and vanadiferous variety of beryl, this suggests that gem quality emeralds might also be present in the area. Cieza de León (2005 [1553]:146) and Garcilaso de la Vega (2009 [1609]:442–443) point to the mountains in the province of Manta. Cabello Balboa (1945 [1583]:6, 12–13) is more specific, and was informed that emeralds came from the headwaters of the Rivers Jama and Coaque, in the Sierra de Campas, a low mountain range between the coast and the main range of the Andes. The name suggests a possible link with the Campaces, who traded in the lowland market at Císcala (Carranza 1965 [1569]:89; Tamara Estupiñán Viteri, pers. com. 2017).

²⁶ Su demarcación es desde los términos de la ciudad de Portoviejo por la costa del Sur hasta el río de San Juan, términos de la gobernación de Popayán. . . . Es tierra de montañas. Tiene muchos ríos y en ellos hay noticia de mucho oro; y asimismo están en aquella provincia las minas ricas de esmeraldas; de lo uno y lo otro se tienen cierta noticia porque los indios traen en cima de sí mucho oro y allí . . . se halla con las esmeraldas que llaman de Portoviejo que trabajan los indios.

²⁷ . . . son muy dispuestos y todos traen moquillos de oro en las narices, y patenas en los pechos, y orejeras, porque así los vi y las esmeraldas es cierto que hay minas muy ricas de ellas en esta prouincia y que son mas finas que las de Muzo.

Martín de Carranza's *Relación* of 1569 says that there were emerald sources near Puerto Viejo and in the province of Tacama [Atacames], and that the Inca "took many emeralds from a mountain that is in Langazaco" [sic] (Carranza 1965 [1569]:88).²⁸ The *Relación de la Provincia de Quito y distrito de su audiencia*, compiled by officials of the Real Hacienda in 1576, comments that:

... we have had information that in the towns of *Sicho* [Sigchos], in the direction of the *South Sea*, is the mine of the rich emeralds that were discovered in this kingdom in the town and province of *Puerto Viejo*, which falls along this direct route, and there have been Indians who said they have seen it and that it is of great richness, because the emeralds are better than those of the *Nuevo Reyno* ... (Valverde and Rodríguez 1965 [1576]:177).²⁹

The document adds that the Spanish searched for the mine but, as always, the expeditions ended in failure. Spanish documents describe the *Sichos Angamarcas*³⁰ as a group of Indian traders and merchants who came down to the coast to exchange their gold for salt, cotton, and dried fish (Carranza 1965 [1569]:88), and it is reported that in 1538 a certain Capitán Peña set out from Guayaquil

and ascended the Babahoyo River to its source in the Cordillera de Angamarca in the hope of finding emerald mines (Andrade 1978:8). This was the first serious expedition to search in this area and, although Peña came back empty handed, the stories continued to circulate, optimists continued to look for the emerald sources, and in 1568 Capitán Andrés Contero ascended the Daule River to reach a mine he had heard of (Carranza 1965[1569]:88). González Suárez (1893:18) places this locality at the foot of the cordillera near Angamarca. Like all his predecessors, Contero failed to find anything. Imprecise though they are, all these accounts concur in locating the emerald sources in the mountainous region behind the north-central coast, either on the western slope of the main Andean range, or in the hills between this and the sea. The Sigchos-Angamarca region is conveniently situated near the headwaters of three major river systems, the Esmeraldas, Daule, and Babahoyo Rivers (Figure 5), but it is probably coincidence that there is a community called Esmeraldas (parroquia of Pucayacu, cantón of La Maná) in the western foothills of the main cordillera some twenty kilometers west of Sigchos (Figure 5).³¹

Interest in the emerald mines reached to the highest level. A letter, dated 30 March 1536, from the Queen of Spain to the governor and officials of the provincia del Perú reads:

²⁸ This may be a misspelling of the name *Longoçoço*, which appears in Carranza's previous paragraph.

²⁹ ... se ha tenido noticia que en los pueblos de *Sicho*, hacía la *Mar del Sur*, está la mina de esmeraldas ricas que se descubrieron en este reino por el pueblo y provincia de *Puerto Viejo*, y cae en aquella derecera, y ha habido indios que han dicho que es de gran riqueza, porque las esmeraldas son mejores que las del *Nuevo Reyno*. ...

³⁰ Carranza treats the Sigchos Angamarcas as a single entity, but in fact they were two separate ones. The Sigchos were present in pre-Inca times, but the Angamarcas were a colony implanted by the Incas (Tamara Estupiñán Viteri, personal communication, 2017).

³¹ This locality is listed in most gazetteers of Ecuadorian place names (see also the Pucayacu website: <http://pucayacu.gob.ec/cotopaxi/?p=85>, accessed 21 February 2022). Tamara Estupiñán Viteri (personal communication, 2017) suspects that the community has a historical origin. The Carta de la Provincia de Quito. (the first map of Ecuador, published in 1750 <https://www.loc.gov/resource/g5300.ct000888/?r=0.315,0.851,0.124,0.075,0> accessed 2 April 2022) lists: *Mangachis nombre de los Sambos de Esmeraldas y Cabo Passao queviven retirados*. The geographical coordinates suggest that this community may be the one near Pucayacu. On the archaeology of La Maná see Guillaume-Gentil 2013.

Certain persons who have come from this province have brought emeralds which have been very good there. By the same token it has been reported to me that this province has a great quantity of these stones, some of them fine, and, when you see any such, bring them for the Emperor, my Lord, and for me. Since you would know the people who have them, and must register them before you in order to pay the *quinto* [the crown's share of booty], I charge and command you that when you see any fine emerald from the said land at the time of taxation to extract the *quinto*, you should take them for us, pay for them from our treasury and send them to our officials who reside in Seville at the Casa de la Contratación so that they can send them to the Emperor Our Lord (Navarro 1986:6).³²

Another letter, written on the same day, instructed the royal officials to seek information about the source of the emeralds and to send it to Spain (*ibid.*). There was further correspondence on this theme in 1535 and again in 1539 (*ibid.*:15–16).

By persuasion or force, the queen's colonial subjects were equally keen to obtain this information. Girolamo Benzoni, who was in Manabí in 1547, records that:

³² Algunas personas de las que de esa provincia han venido, han traído algunas piedras de *esmeraldas* que acá han sido buenas. Así mismo me han hecho relación que en esa provincia hay de las dichas piedras cantidad y algunas buenas y cuando veáis estas tales, que se las traigan para el Emperador, mi Señor y para mí. Como conocéis a las personas que las tienen, las cuales tienen que registrar ante vos para cobrar el quinto de ellas, os mando y encargo que cuando veáis alguna esmeralda buena de las que hay en dicha tierra, al tiempo que se tase para sacar el quinto, las toméis para nos y las paguéis de nuestra hacienda y las enviaréis dirigidas a nuestros oficiales que residen en Sevilla en la Casa de la Contratación para que ellos las envíen al Emperador Nuestro Señor.

. . . the natives [of Puerto Viejo] have many emeralds, but keep the mines to themselves, and, although the Spanish have tortured and killed many of them, they have never been willing to say where they are. Yet I understood from a Maggiordomo of Captain Giouan Dolmos that an Indian woman, his concubine, showed him the place where the mines are situated, but he did not want to publish it for fear that the King would seize it for himself (Benzoni 1962[1665]:162).³³

Not everyone was convinced (Cieza de León 2005 [1553]:146), but the exploits of Capitán Juan de Olmos were well known to his contemporaries, and are mentioned in various other written sources of the period (Navarro 1986:10, 17–18, 21).

In the face of passive resistance by the Indians, with tales of demons that guarded the way to the mines (Bollaert 1860:84; Carranza 1965 [1569]:88; Valverde and Rodríguez 1965 [1576]:177), and the difficulties of the terrain, no Spaniard (except perhaps de Olmos) ever seems to have reached the sources of emeralds, though many tried. Fairly typical is the experience of Benito Hernández, resident of Puerto Viejo (Lane 2002:29). As a letter dated 19 May 1552 explains:

. . . he has worked at this and wasted a lot of money without being able to discover [the mines]. In order that nobody shall find them, the Indians, who knew where they were, closed the road and let it become lost so that the Spanish should not

³³ . . . gli paesani haueano molti smeraldi & tengano le minere fra di loro, & ancora che gli Spagnuoli ne habbino tormentati, & ammazzati molti, mai non hanno volute dire doue siano, í ben ch'io intesi de vn Maggiordomo del Capitano Giouan Dolmos, che vna India, sua concubina v'insegnò il luogo doue stauano, & che non volse publicarlo, temendo che'l Re se la pigliasse per lui.

make themselves owners of them (Navarro 1986: 39).³⁴

Nevertheless, Ecuador was, for a time, an important source of emeralds, some of which were of fine quality.

Certainly the number of emeralds that have been seen and found in this district of Puerto Viejo is very great, and they are the best in all the Indies; for although there are more of them in the new kingdom of Granada, the best ones from there are not as good, nor nearly so valuable, as the most ordinary ones from here (Cieza de León 2005 [1553]:146).³⁵

From Manta and Puerto Viejo, if not captured by pirates en route (Kelsey 1998:155; Wright 1932:339), the emeralds were sent by sea to Panama for onward shipment to Spain.

There was also an active internal market for emeralds. The libros de Protocolos Notoriales for early colonial Quito make abundant references to emeralds in the manufacture of jewelry, with information on prices, the social status of the owners, the names of individual jewelers, etc. Emeralds are mentioned in connection with dowries, wills, and commercial transactions of various kinds. Unfortunately the source of these emeralds is not specified (Tamara Estupiñán Viteri, personal communication, 2017). Already, by 1569, fake emeralds were being made

from colored glass (Carranza 1965 [1569]:89).

Gradually, as the mines remained undiscovered, and the native population of the coast dwindled and became acculturated, Ecuadorian emeralds fade from the historical record. There are early hints of this in the *Relación de los pueblos de Manta y Puerto Viejo*:

Near Puerto Viejo there are emerald mines that were formerly exploited, but which have been abandoned for some years, since the Spanish cannot enter there because it is a war zone, and also because of the lack of Negroes to work them (Carranza 1965 [1569]:90).³⁶

Garcilaso de la Vega comments that emeralds from New Granada were now flooding the European market and were driving down prices. He was not the only one to make this complaint (Lane 2010:240, 246). At the same time the supply of emeralds from Manta was drying up.

The Spanish have never, despite many efforts, succeeded in discovering the mineral that produced them, and there are now almost no emeralds from that province, though it formerly produced the best in the empire (Garcilaso de la Vega 2009 [1609]:443).³⁷

ARCHAEOLOGICAL EVIDENCE FOR EMERALDS IN ECUADOR, SOUTHWEST COLOMBIA, AND PERU

³⁴ . . . en ello se ha trabajado y gastado mucho dinero sin poderlas descubrir. Para que no se hallasen, los indios que sabían donde estaban, cerraron el camino y lo dejaron perder para que los españoles no se hicieran dueños de ellas.

³⁵ Y cierto mucho ha sido el número de esmeraldas que se han visto y hallado en esta comarca de Puerto Viejo, y son las mejores de todas las Indias, porque aunque en el Nuevo reino de Granada haya más, no son tales ni como mucho se igualen en el valor las mejores de allá a las communes de acá.

³⁶ Cerca de *Puerto Viejo* hay unas minas, que antiguamente se han labrado, de esmeraldas, las cuales agora se han dejado de algunos años a esta parte, así por no poder entrar los españoles, por ser tierra de guerra, como por aparejo de negros que tienen para ello.

³⁷ No ha sido posible a los españoles, por mucho que lo han procurado, haber dado con el mineral donde se crían; y así casi ya no hallan esmeraldas de aquella provincia, y eran las mejores de todo aquel imperio.

With the decline of colonial emerald production, historical information becomes scarce, though finds of presumably prehispanic emeralds were recorded sporadically by travellers (e.g., Bollaert 1860:83–85; Juan and Ulloa 1758, Volume I:370). Juan and Ulloa describe emeralds from the tombs of Atacames and Manta as carved into various shapes and provided with biconic perforations, as on the archaeological examples, and they comment regretfully that “these mines are now entirely lost, very probably thro’ negligence.” From c. 1700 to the present the evidence is archaeological rather than historical.

In Esmeraldas and the adjacent Tumaco region of Colombia, archaeological emeralds are numerous, though most of them were not found by professional excavators and they are therefore under-represented in the scientific literature. When the find spots of these “informal emeralds” are reliably known, they have been included on the distribution maps, but for any useful contextual information we have to rely on a small number of properly excavated sites. Numbers correspond to those in Figures 3 and 4.

1. La Tolita, Esmeraldas, Ecuador

The Banco Central del Ecuador has a considerable number of emeralds and emerald artefacts, and there are many more in the hands of farmers, collectors, and dealers. Most of these are said to have come from La Tolita, where there is a long tradition of placer-mining for redeposited gold items washed out from the archaeological site (e.g., Brezzi 2003:255). This situation is not unique, and Saville (1910:341) records gold items and a drilled emerald crystal from a similar, but unlocated, site on the Mate River. Despite the numerous hearsay reports from La Tolita, documented finds are few.

A platform (*tola*) excavated by a local land owner contained a skeleton with a large clay

seal in its hand. Accompanying the body were various pots and a gold “egg” with an unworked fragment of emerald inside (Saville 1910:340). Examination of this “egg” in 1994 by Jeffery Maish and David Scott showed that it was, in fact, an ovoid-shaped tumbaga appliqué, probably for attachment to a textile, that became crushed around the emerald (David Scott, personal communication 2009). More recently, Francisco Valdez excavated a round, perforated emerald in a deposit of ceramic debris (perhaps the remains of some ceremonial activity) on top of a platform. The associated figurines belonged to the Late Tolita phase, A.D. 300/400 (Francisco Valdez, personal communication, 2009).

Valdez’s excavations have established that La Tolita was occupied from c. 800 B.C. to c. A.D. 400. He confirms that items in Tolita style include figurines and metal jewelry embellished with additions or inlays of precious and semi-precious stones, among them perforated and finely worked emeralds. The selection of stones, all of them exotic to the site, provides a range of color options: green (emerald, esmeraldina, jade or jadeite,³⁸ serpentine), blue-green (turquoise), dark blue (sodalite), reddish (agate), and semi-transparent (quartz) (Valdez 1987:69). A selection of Tolita-style jewelry combining gold and emeralds is illustrated in the catalogues of the Banco Central del Ecuador (Museo Nacional del Banco Central del Ecuador 1998:7; Ontaneda 2007:55; Yépez Regalado 2000:26). Spondylus and Conus shells were present from the beginning of the sequence at La Tolita, and some of the *mullu* was used to make jewelry, small beads, and inlays for gold, bone, and wooden objects (Valdez 1987:72–73, 1992:273).

2. La Florida, Quito. Chaupicruz Phase, c. A.D.

³⁸ No undisputed sources of jadeite have yet been found in South America. Archaeological reports of jade should be treated with caution unless supported by mineralogical analyses.

100–450.

At this site Leon Doyon excavated a cemetery of shaft graves with pottery related to the Capulí Style of the north Ecuadorian and Colombian Andes. One of these tombs yielded two drilled emeralds (Doyon 1988:62, 1995:70). From the cemetery as a whole came coastal pearl shell and more than seven kilos of spondylus beads. There is an uncalibrated radiocarbon date of A.D. 340 ± 80 for the site. Coastal connections are also attested at the nearby site of Jardín del Este with fragments of Tolita-style figurines.

3. Manta, A.D. 800/1000 to Spanish conquest

Roundish, perforated emerald beads were found “con frecuencia” in Manteño-period cremation urns excavated by Jijón y Caamaño (1997 [1952]:227).

4. Cerro Jaboncillo, Manabí, A.D. 800/1000 to Spanish conquest

At this Manteño site Jijón y Caamaño (1918:261) excavated a copper nose-ring with an emerald threaded on it.

5. Loma de los Cangrejitos, Chanduy, Guayas, c. tenth–thirteenth centuries A.D.

In a Huancavilca/Manteño tomb Zevallos and Marcos excavated a pierced spherical emerald bead on a tumbaga nose-ring. Similar ornaments are modelled on Manteño effigy vessels from this and other cemeteries (Jorge Marcos, personal communication, 2009).

6. Riobamba (a reported provenience, uncheckable and without contextual information)

An emerald threaded onto a small gold penannular nose-ring (Cambridge University Museum of Archaeology and Anthropology,

accession number 36.747).

7. Batán Grande, La Leche Valley, Peru, A.D. 900–1100

On the face of the principal individual in a very rich Middle Sicán tomb at Huaca Loro (East Tomb) was a large gold mask. The whites of its eyes appear to be of mineralized silver alloy, on which are irises consisting of hemispherical amber beads with pierced spherical emeralds serving as the pupils. Among the twelve tonnes of sumptuary artefacts were enormous quantities of beads made from spondylus, amber, turquoise, sodalite, amethyst, quartz, crysocola, and agate. There were also three cloudy emerald beads (Shimada and Merkel 1993:21; Shimada 1998:236; 2000: 47). Microscopic examination of the emerald eyes led Jo Ann Griffin to suggest that their origin was the Muzo mine in Colombia (Shimada and Griffin 2005:85), though a possible Ecuadorian origin is not completely discounted (Shimada *et al.* 1997:15; Izumi Shimada, personal communication, 2016).

The contents of another tomb, at Huaca El Corte, included emeralds and colored semiprecious stones. On a second mask, almost certainly looted from a tomb at Batán Grande, each eye pupil consisted of seven spherical, graduated emeralds threaded on to a gold wire (Carcedo Muro and Shimada 1985:62, 67). These are the southernmost finds of archaeological emeralds.

8. Vicús, Upper Piura Valley, Peru, A. D. 200-900

No emeralds have been found in controlled excavations, but they may have been present in the looted cemeteries. Sawyer (1968:31) describes beads of gold, emeralds, and other colored stones, and attributes these to “Classic Vicús” on stylistic grounds. The fact that the emeralds came from the Domingo Seminario

collection gives some credibility to this provenience, but the case remains unproven.

9. *Malagana, Palmira, Valle del Cauca, Colombia. Malagana Phase, first century B.C. to third or fourth century A.D.*

The cemetery was looted in 1992, and part of the domestic area was subsequently excavated, under the direction of Marianne Cardale Schrimpf, Leonor Herrera, and Carlos Armando Rodríguez, between 1994 and 2001. Emeralds were reasonably common in the richest tombs at the cemetery, and several can be reliably traced back to the original find (BML and Quinn 2002; Bray *et al.* 2005: figure IV, 76; TM 1994). Though there were some unworked crystals, most of the emeralds were faceted or carved, and then perforated to make beads. Some of these copied the forms of Malagana gold beads; others were threaded onto gold wire *nariguera*s (nose ornaments) as in Tumaco and the Ecuadorian province in general. Unpublished items in private collections, most of them made from emerald *moralla*, include carved human and animal heads, little frogs, disc beads, miniature renderings of Malagana double-spouted vessels, a bird overlaid with gold, and a gold lizard or crocodile with a large gem-quality crystal set into its head. Since the style of these carved emeralds is unmatched elsewhere, we must assume that they were locally made from imported raw material. Visual examination by professional gemologists of Malagana items in Bogotá museums confirms that the material is genuine emerald, often of good quality (TM 1994; Clemencia Plazas, personal communication, 2015).

Besides an abundance of pottery and gold-work (including a few objects imported from the Pacific coast), Malagana has yielded beads of quartz, red *Spondylus* shell (Bray *et al.* 2005: figure IV.74), sodalite, green chert, and an unidentified jade-like stone. None of these

materials is native to the Cauca flood plain, but several of them are also present at La Tolita and, in general, the usage of emeralds and colored stones at Malagana follows the Ecuadorian-Pacific pattern.

A few kilometers further the north, a looted cemetery at Cerritos has yielded gold items in Malagana/Yotoco style and a number of carved emeralds.

10. *Calima Region, municipios of Restrepo and Darién, Cordillera Occidental, Valle del Cauca, Colombia. Yotoco Phase, first century A.D. to 500–800.*

Anecdotal evidence suggests that emeralds are not uncommon in the region. One resident of the area still has part of a Yotoco grave lot from Darién consisting of emerald *moralla*, a gold nose-piece, a gold ear-spool, and 65 pottery spindle whorls; another, from Restrepo, recalls the discovery of a tomb containing five to six *libras* (pounds) of gold artefacts and two Yotoco vessels, one of them an *alcarraza*³⁹ in the form of a monkey, the other a bowl full of perforated emerald beads (Pro Calima archive, unpublished). This material has disappeared, but among the items in the Museo del Oro, Bogotá, are necklaces of gold beads or of gold wire with emerald pendants (Bray 2005 *et al.*: figure III.69; Pérez de Barradas 1954, Volume I:205, lámina XV). Old finds, reportedly sold to the Museum, include two emeralds (one found loose, the other on a *nariguera*) from a cemetery with Yotoco gold and pottery excavated at the Hacienda Palermo, Darién (information from the landowner, Eduardo Ochoa, 1962).

Several nose-rings from Calima have beads of green stone or what looks like sodalite threaded onto them in the Ecuadorian manner,

³⁹ *Alcarraza* is the local name for a pot with two spouts linked by a bridge handle.

and quartz beads are also common. Yotoco pottery and goldwork have links with those of Tumaco and other regions of southwest Colombia, and from Calima there are several small items made of platinum originating from the rivers that drain into the Pacific (Bray 2005 *et al.*, figure III.43; Pérez de Barradas 1954, I, lámina XV; Scott and Bray 1994: figures 8–11). In the other direction, part of a Yotoco lime dipper reached La Tolita (Zevallos Menéndez 1965–1966: figure 9). Like Malagana, Calima clearly belongs within the “Ecuadorian” emerald-distribution province and has no obvious connections with the Cordillera Oriental.

11. *Finca Moravo, District of San Francisco, Municipio of Chinchiná, Department of Caldas (formerly Cauca), first century B.C. to A.D. 800/900.*

Ear ornaments of gold and emerald were found in the same Classic Quimbaya tomb as the golden helmets now in the Ethnologisches Museum, Berlin. The tomb contained several other items of gold and tumbaga, marine shells and various stones (Baessler 1901:39; Botero 2006:164).

In summary, emeralds in southwest Colombia and Ecuador:

1. Were exploited and traded from the early centuries A.D. until the Colonial Pperiod, a process that starts before anything so far recorded in Muisca territory;
2. were used predominantly for carved and drilled jewelry items, rather than as natural crystals;
3. were used initially in secular contexts, not as votive objects, even though many of them ended up as grave goods, and;
4. belong within an Ecuadorian-Southwest

Colombian tradition of using exotic and colorful materials for inlays and attachments to composite objects. Since the 1980s archaeologists have recognized that the regional cultures of southwest Colombia (Calima, Malagana, Tierradentro, San Agustín, and Tumaco) share a number of technological, artistic, and ideological traits, and that the adjacent parts of Ecuador participated in this tradition (Bray 2002: 102–109; Bray *et al.* 2005; Plazas and Falchetti 1983). Links between the Calima and Cauca Valleys and the Pacific coast of Tumaco were particularly strong. As well as colored stones, a number of materials of Pacific origin circulated within this region: spondylus (*mullu*) and pearl shell (Mester 1990) from the warm waters of the Colombian and Ecuadorian coasts, and platinum from the Pacific hinterland (Scott and Bray 1994). In this context emeralds fit best as one more “local” product, rather than as a unique import from more than seven hundred miles (one thousand one hundred kilometers) away.

In colonial times “Ecuadorian” emeralds were exported to Europe via Manta and Puerto Viejo on the Pacific coast, then onwards to Panama; in contrast, “Colombian” emeralds went by way of the Caribbean ports of Santa Marta and Cartagena. These two distinct commercial systems reflect prehispanic trading patterns.

CONCLUSIONS

Archaeological and historical evidence unequivocally shows that quantities of emeralds were in the hands of the native population of Ecuador before and after the Spanish conquest. The orthodox view is that these stones originated in the mines of highland Colombia, in which case we are looking at an extreme example of long distance commerce in luxury goods. There is, however, an alternative explanation for the presence of so many stones so far away from the Colombian mines. Although geologists

and gemologists are unwilling to accept the idea, a strong, if circumstantial, case can be made for the existence of prehispanic and early colonial emerald sources in Ecuador itself. These have not been rediscovered, and may perhaps never be found, though it would be worth searching for them on the ground and also re-examining the local geology with the possibility of emeralds in mind. Unlike the Colombian examples, which formed in sedimentary shales, most emeralds worldwide occur in zones of igneous activity (Fallick 1994:522). In the absence of known Ecuadorian sources, the most pressing need is for more analyses of existing emeralds. The few from Malagana that have been examined are said to be “consistent with” a Colombian, *i.e.* Muzo/Somondoco, origin (BML and Quinn 2002), as are those from the Tumaco region (Clemencia Plazas, personal communication, 2015). Oxygen isotope analysis has proved its ability to discriminate between emeralds from different sources (Giuliani *et al.* 1998, 2000) and this may be a way forward. Even though we have no geologically sourced Ecuadorian emeralds to serve as a control, there is a case for a program to compare provenienced “Ecuadorian” emeralds with those from Muzo and Somondoco. If the two groups prove to be analytically distinct, the argument for independent Ecuadorian sources will be greatly strengthened. Whichever way the debate is eventually resolved, the mismatch between the documentary evidence and the mineralogical data is interesting in itself.

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Figure 1. Colombia and adjacent countries. Dotted area within box indicates Muisca territory at the time of the Spanish arrival (adapted from Falchetti and Plazas de Nieto 1972).

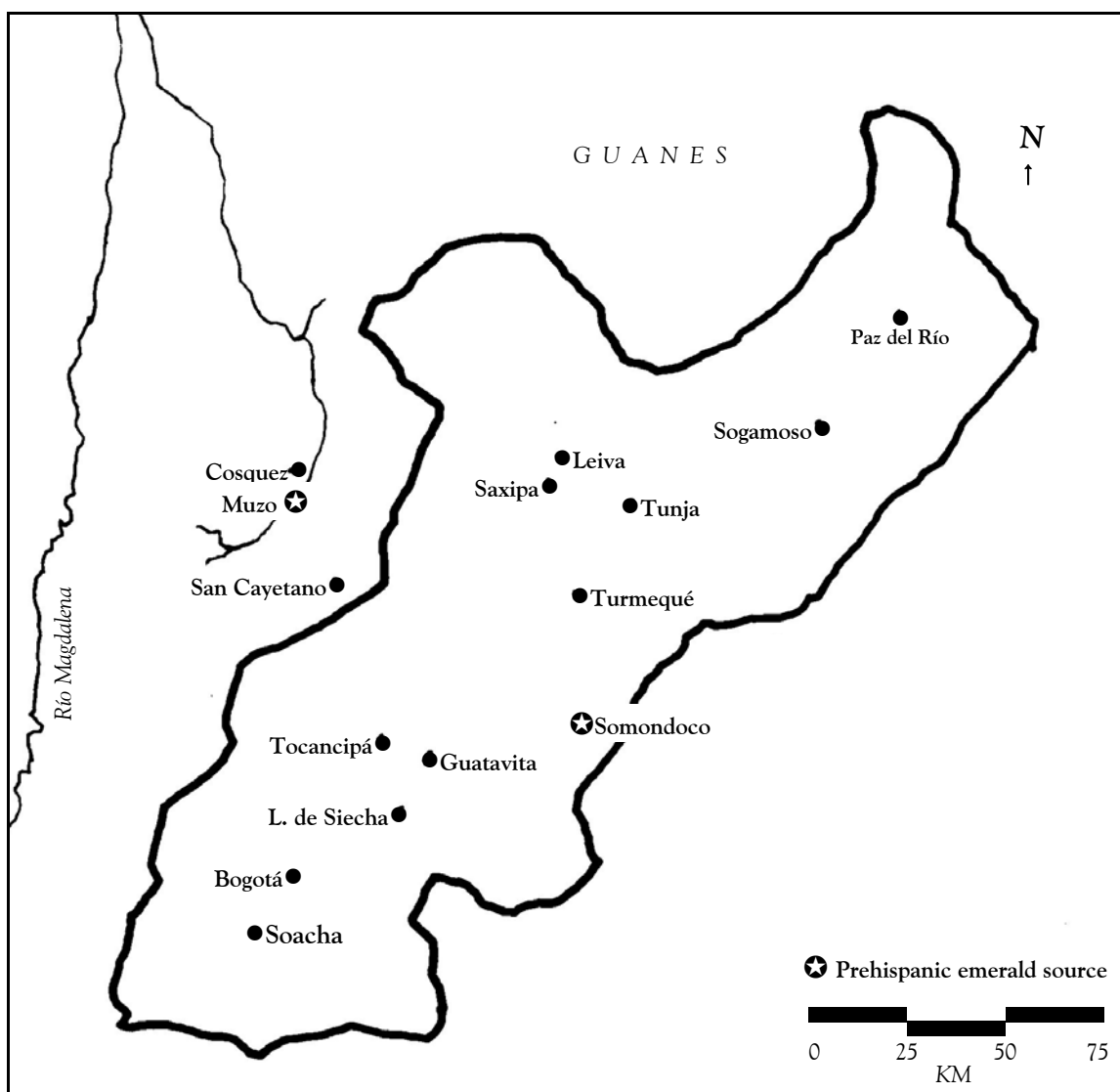


Figure 2. Muisca territory at the time of the Spanish arrival, with localities mentioned in the text (adapted from Falchetti and Plazas de Nieto 1972).

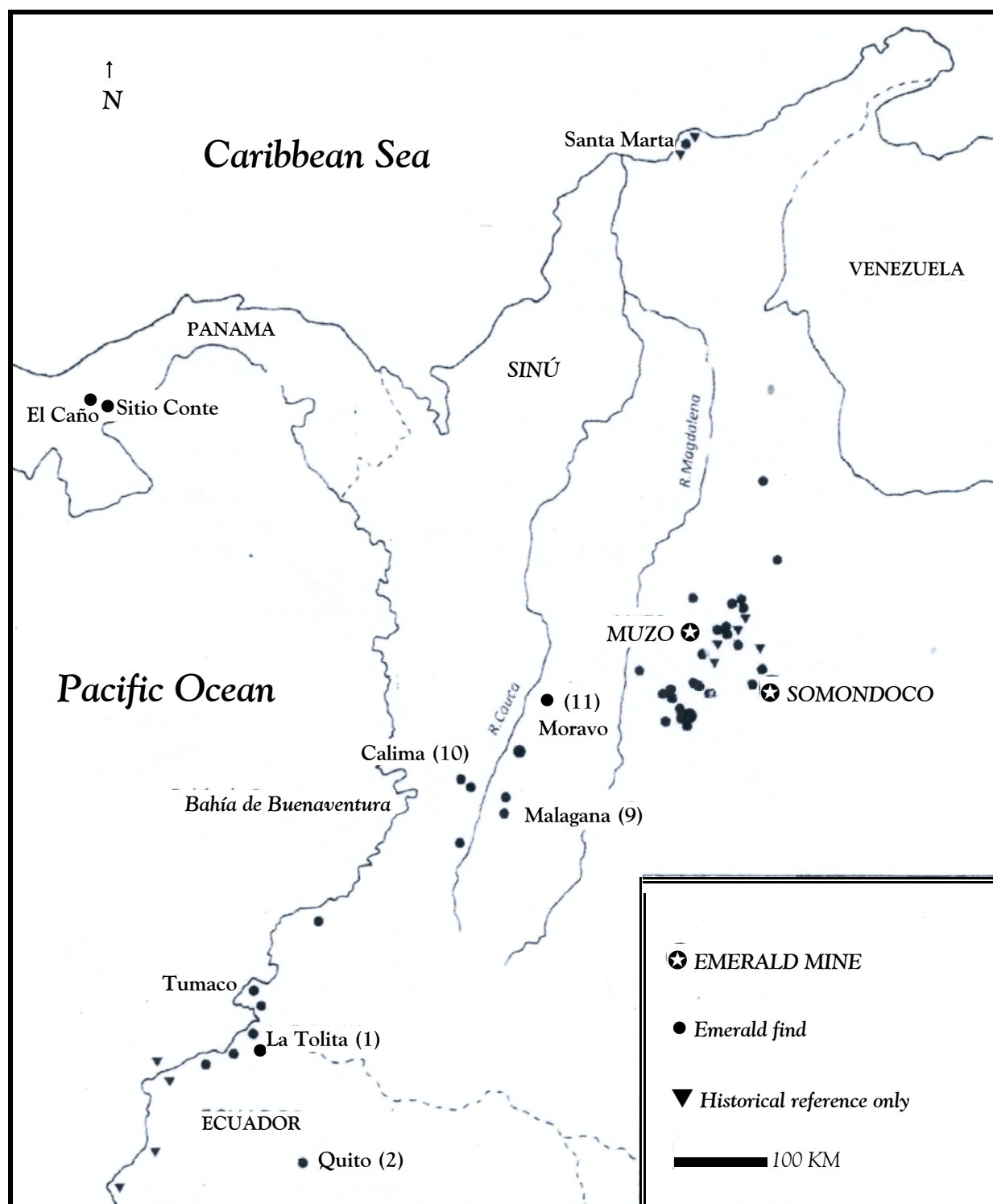


Figure 3: Map of Colombia and adjacent Ecuador showing archaeological and historical evidence for indigenous emerald use. Numbered sites are discussed in the text.

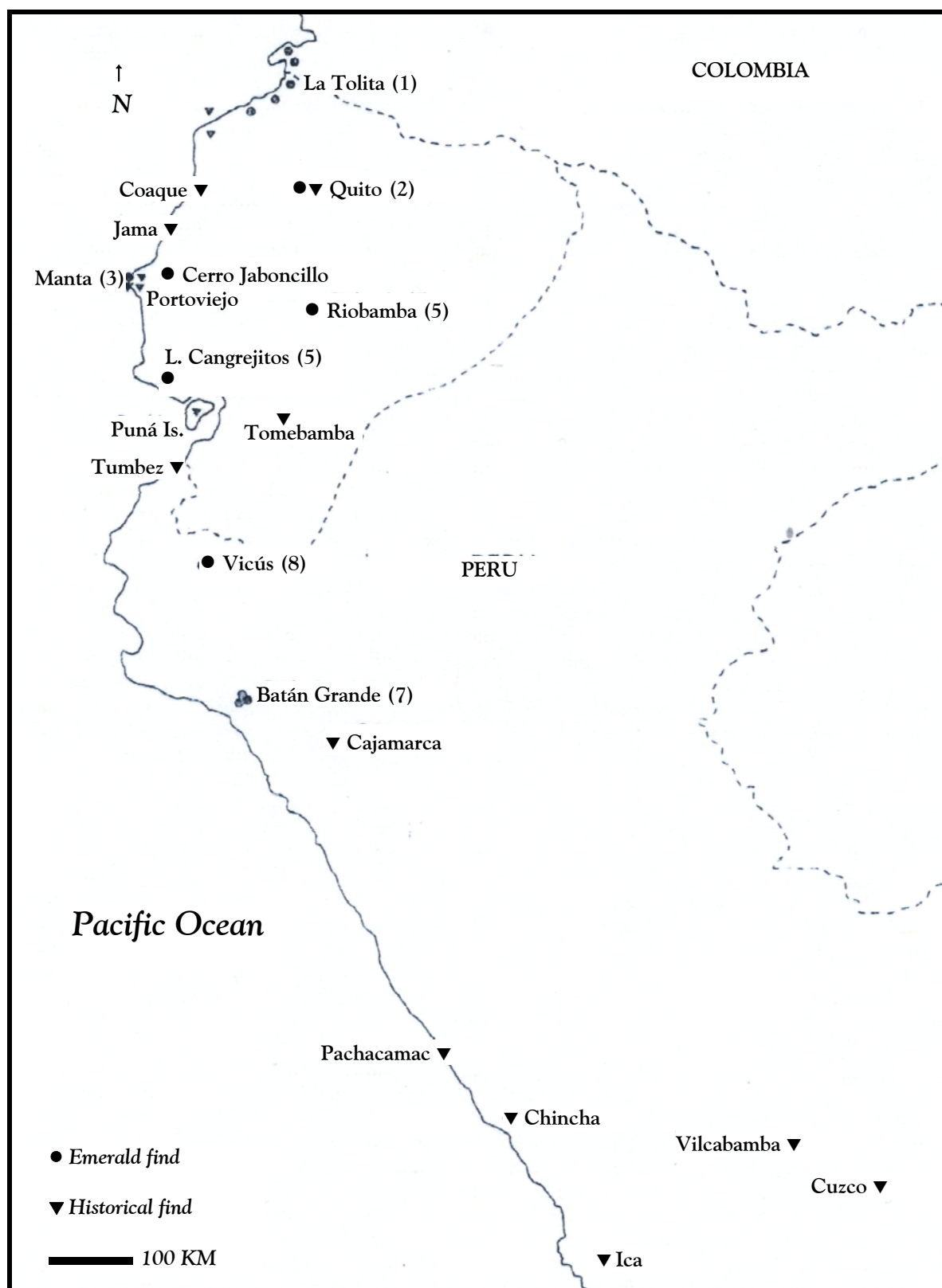


Figure 4. Ecuador and Peru: archaeological and historical evidence for indigenous emerald use. Numbered sites are discussed in the text.

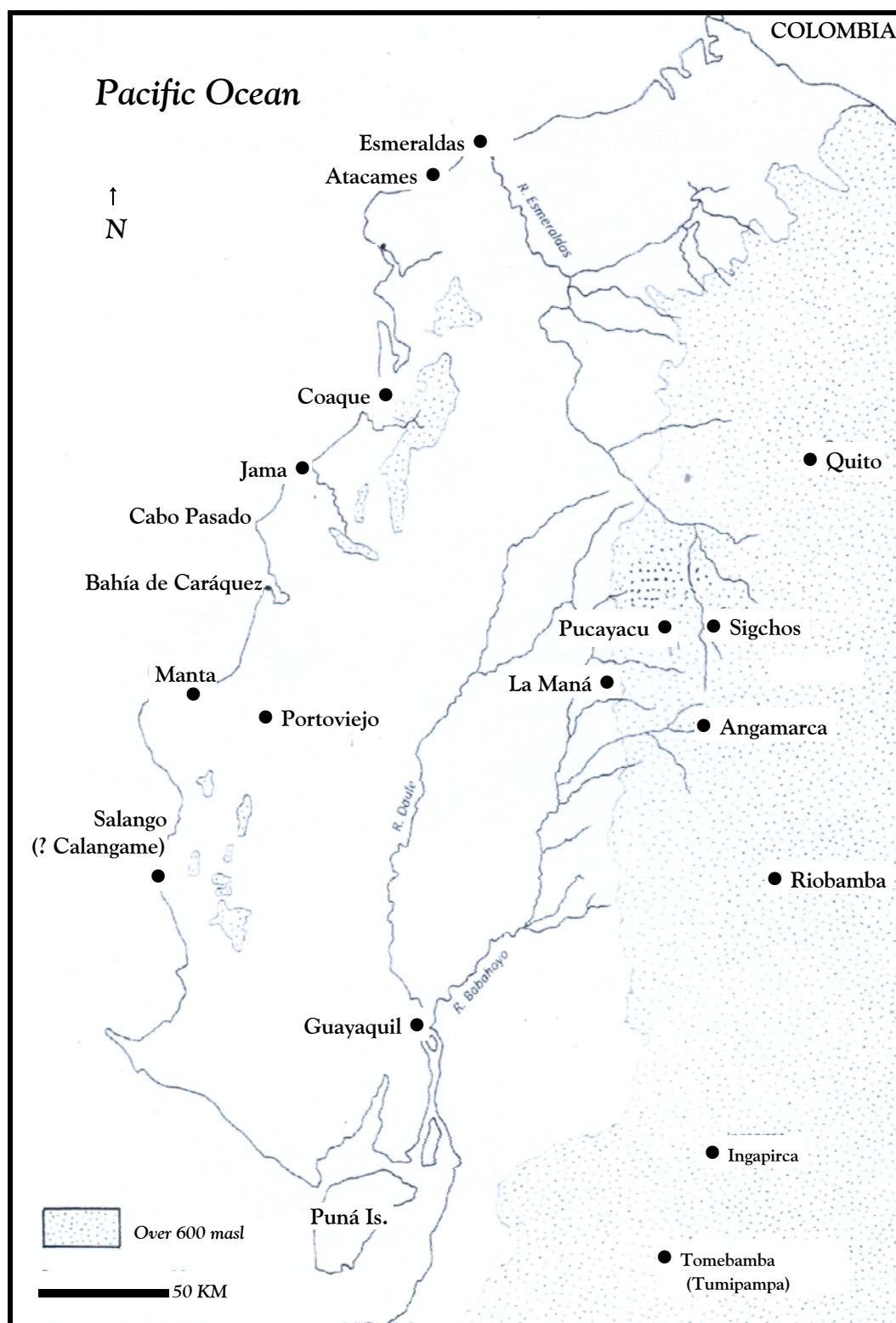


Figure 5: Ecuador with locations mentioned in the text.

