Almost a hundred years after Elizabeth Gwillim and her younger sister Mary Symonds arrived at Fort St George or Madras, Rudyard Kipling wrote “The Song of the Cities,” a poem about his grand tour of the Empire and in one of the fifteen quatrains he describes the changing fortunes of Madras. In the first decade of the 19th century, when Elizabeth Gwillim and Mary Symonds were in Madras, the city was emerging as a place of consequence. This paper records the sister’s remarkable documentation of the landscape and architecture of Madras and its surroundings.

In 1522, the Portuguese were the first European power to gain a foothold on the Coromandel coast, through the presence of a colony at San Thomé, some four-five kilometres south of the present Chennai city centre. By the time the Gwillims arrived, San Thomé had been...
absorbed into the settlement of Madras, and it was there that they settled after 1802, in a house next to the current Ambedkar bridge.

Madras, or Madraspatnam, developed around Fort Saint George, a trading post founded in 1639, in the wake of negotiations between Francis Day and Andrew Cogan of the English East India Company (EIC) and the local Hindu ruler from the Vijayanagara empire. The dangers posed by the natural environment quickly became clear to the settlers. Three weeks into the settlement an unseasonal cyclonic storm sank ships in the harbour of the nascent fort. When the British took possession, the population of Madras amounted to 7000. The famine that followed seven years later in 1646 is said to have wiped off 4000 of the population then amounting to 19,000.

After the establishment of the Company's factory, merchant communities including weavers were attracted from many other south Indian centres, and settled along the coast north of Fort St George, in what became known as "black town," as opposed to "white town," also called "Christian town," which was surrounded by a new wall built in the 1650s. The "white town," was designated as an administrative centre controlled by a governor (a presidency) by 1652, and over the period 1688 to 1749 gradually began administering the region in a radius of five miles around it. The name "white town" initially came about because the ruling Nayak had decreed that the town inhabited by the English be painted only white. By the early eighteenth century, "black town" was also walled, funded by its Indian inhabitants under pressure from the EIC. Captain Dampier recorded the beauty of the fort in 1690:

I was much pleased with the Beautiful prospect this place makes off at Sea. For it stands in a plain Sandy spot of Ground close to the shore, the Sea some- times washing its Walls which are of Stone and high, with Half Moons and Flankers, and a great many Guns mounted on the Battlements; so that what with the Walls and fine Buildings within the Fort, the large
Town of Maderas without it, the Pyramids of the English Tombs, Houses and Gardens adjacent, and the variety of fine Trees scatter'd up and down, it makes as agreeable a Landskip as I have anywhere seen.  

As this passage highlights, although Fort Saint George was the earliest fortified settlement of the East India Company in South India, it remained completely unprotected from the sea for more than 300 years until the construction of a protected harbour in the late nineteenth century. Even relatively smaller tall ships had to anchor offshore and land their passengers and cargoes via small boats. This transfer using simple flat-bottomed country crafts through heavy Indian Ocean surf was precarious, often passengers were taken ashore on shoulders of native boatpersons. During monsoon, the surf is so high that harbour remained closed. In a letter to her mother Elizabeth wrote:

The months of November December & January are what is called here the Monsoon, that is the rainy season. The surf of the sea is very great on this Coast & therefore during this Period it is thought unsafe for any Vessels to lie near the Coast. For this reason at the commencement of the Monsoon the flag is struck, & not set up again till it is over, to indicate that no ships are to remain in the Harbour or Roads nor to come into it.  

During the seventeenth century, the Company was embroiled in wars between the Mughal empire and its enemies, that included the Marathas and the nearby kingdom of Golconda, and was in a fragile position. It also saw struggles between the Dutch and the French for a foothold in the Coromandel coast. The trade of the EIC was extremely profitable none the less. One of the most
famous governors of Fort St George was Elihu Yale, who began his governorship in 1687. He returned to England with considerable wealth amassed in India and assisted the then struggling collegiate school of Connecticut with a gift of books and pictures which realized £560 giving the university that followed his name in 1718.\textsuperscript{10}

Gradually, the EIC settlement became the centre of the Company’s operations on the Coromandel coast and the migration of Indian traders resulted in a population of 80,000 by the start of the eighteenth century. However, in 1732, Governor G.M. Pitt noted the decline of the Madras trade, which had previously boasted of sending of thousands of bales of calicoes, due to the increase of ground rents.\textsuperscript{11} The impact of increasing taxes on manufactures was becoming apparent. White town had higher property values but lower taxes, a system that was designed to favour the English.\textsuperscript{12} The French occupation of Madras between 1746 and 1748 involved the destruction of the original black town, moving its inhabitants four hundred yards from the gates of white town. The English retained this reorganization, expanding the fortifications further and enlarging the area of white town.\textsuperscript{13}

When the French took over Madras in 1746, the city was plundered and its population plummeted to 55,000, but by 1800, it had risen to 125,000. By the late eighteenth century, the English were in a more assured position having taken over Bengal in 1785 and having crushed Tipu Sultan in Mysore. In this period, the East India Company’s territorial acquisitions drained vast sums from its coffers, but individuals were still making immense profits. For example, the Battle of Plassey in 1757 had yielded a payout of £1,238,575 of which Robert Clive received £31,500.\textsuperscript{14}

In 1801, the countryside around Madras was still recovering from the war with Tipu Sultan, who was defeated and killed in 1799 following the fourth Anglo Mysore war that resulted in the
dismantlement of Mysore to the benefit of the East India Company. Revenue collection intensified the agrarian stress and the famines of the period. The British had by this stage begun to colonise large areas of the sub-continent of India. Conflict, agrarian interventions, and heavy taxation had rendered the peasants impoverished and subject to natural disasters including floods and droughts with limited resilience. Exacerbated by the climate, the later eighteenth century saw a series of scarcities and famines in 1733, 1782-83, 1785, and 1782-83. These affected South India, including Madras and the surrounding areas (under British East India Company rule) and the extended Kingdom of Mysore (then under the rule of Haider Ali and his successor Tipu Sultan).

For the East India Company, the tracts of land that they gained control of following the defeat of Tipu Sultan were new and largely unknown territory that needed documenting. Rosie Dias writes: “The visual recording and representation of colonial settlements and exotic landscapes was crucial to the expansion and legitimisation of Britain’s empire in the 18th and 19th centuries. Nowhere was this more apparent than in the East India Company’s active engagement of visual production as a means of acquiring and cementing colonial knowledge and control.” According to Dias, the Company’s new territories represented “an unfamiliar and often inhospitable landscape encompassing hundreds of thousands of square miles and stretching from the northern to southern, and from the western to eastern, extremities of modern-day India, and beyond. It incorporated a series of highly disparate environments and political configurations which were inflected not only by nature, but by the practices and legacies of native peoples and previous invaders. .. Establishing, comprehending and controlling this landscape necessitated the production of visual records and representations in unprecedented volume and in a variety of forms.” Conspicuously, the visual recordings of the Mysore war spilled over beyond the shores of India. J. M. W. Turner, the most loved British romantic painter,
was one of the eminent artists who employed his skills and imagination illustrating this war. For in nineteenth century England, exotic Indian scenery was a portable commodity. A wide variety of artists, including Turner, who never visited India produced numerous sketches, watercolor, and designs, and engravers provided the illustrations for the consumption of the growing middleclass clients. It is therefore imperative, to consider the visual evidence judiciously.

In 1779, William Hodges became the first major British artist to travel to India; prior to that, as an artist he had accompanied the great explorer and cartographer Captain James Cook, on his expeditions to the South Pacific. The seascapes and landscapes of that voyage are well discussed by Bernard Smith, however, his Indian works are less known. Under the patronage of the Governor General, Warren Hastings (1731-1818), he recorded north Indian scenery. The works were published in London in 1786-88. Elizabeth Gwillim and Mary Symonds may have owned or seen his portfolios. In any case, the works hugely influenced other artists, including the famous uncle and nephew team of Thomas and William Daniell. Thomas and William Daniell, had recorded India between 1786 and 1794 during their three trips. Although their visit to Madras was brief, the Daniells were able to give a precise image of that colonial establishment and its surroundings as they used a camera obscura - a device they had employed extensively in their works to set up compositions accurately and quickly. Today, we recognise how their views are shaped by art historical conventions and the expectations of their English market. However, Thomas Daniell himself drew parallels in the preface to his 1810 publication between his work and that of a "naturalist," "philosopher" or scientist exploring "the shores of Asia" for the "diffusion of truth."

Another form of visual documentation of the landscape was surveying. Charts and maps were used extensively by the East India Company for recordkeeping, to help set up their
establishment, and for the running of its growing empire. In India, the Company started the Madras Surveying School in 1794 to meet the growing need for trained surveyors necessitated by colonial expansion. According to Jennifer Howes, the School also provided useful employment for Indian-born sons of the European military. Howes also explored the legacy of the first Surveyor General of India who left behind a massive collection of manuscripts and drawings gathered between 1784 and 1821 which were collected mainly in southern India. On relatively small scale, maps hold important cadastral information such as property lines and buildings. A closer look at city-maps can reveal a lot: they tell us about the place, its setting, provide historical information, inform us of the urban hierarchy and the spatial order. There are several detailed maps that are almost contemporary with the period of the Gwillim's visit and can be read in conjunction with their correspondence and paintings, including the 1798 map which served to designate the area under the control of the Supreme Court on which Henry Gwillim sat. A map based on an 1814 survey and another published in 1822 are also useful in situating the Gwillim/Symonds family's experience within its geographical context.

Much of the perspective in Mary and Elizabeth's correspondence could be said to be gendered. Sarah Mills has argued that we need to distinguish between male travel writing and female travel writing and that while women's writings should also be seen as colonial texts, they differed from male-authored texts in privileging personal relations and resisting narrative authority. It is important that the heterogeneity of the texts must be examined to understand whether the writing was constrained by the genre’s conventions or societal expectations of femininity which "restricted women to self-deprecating and confessional modes." In a recent study of three female travelers, Carl Thompson argued that self-deprecation, such as professing an ignorance of botany, was often a form of self-defence for learned women, who otherwise risked
being mocked for displaying excessive learning or pride, both of which were considered inappropriate for women. The sisters occasionally made self-deprecating statements both about their natural knowledge and their artwork, for example Mary, in her letter to her sister, Hester, wrote:

Your new drawing room will be an additional inducement to me to endeavour at improving myself in drawing. I am at present incapable of giving you any satisfactory representations of this country or of the people and consequently cannot send you any thing that will be worthy of a place on the wall. but my anxiety to give you an accurate idea of these people makes me send you some little daubs from time to time by way of illustration to our letters.

This self-effacing letter aside, Elizabeth and Mary’s portfolios are comparable to the works of leading artists of the period working in the subcontinent and beyond. The correspondence similarly reveals that the Gwillim and Symonds sisters were clearly interested in the land and the people, were often sympathetic and engaged with the landscape aesthetically, were drawn to the different flora and fauna, became amateur naturalists and imbibed ways of seeing and being that showed a generosity of spirit. Theirs was not explicitly a conquest narrative but about the pleasures of being in a foreign land. Nevertheless, it is worth noting that pursuits like collecting, describing, and other forms of natural history also enabled and justified empire. The detail in the letters and their attentiveness to natural history are useful for the environmental historian. For example, their depictions of rivers, tanks and aquifers and help us compare these to the landscape
changes brought about in Madras in the nineteenth century and can be read as the environmental history of a region.

**The Urban Environment**

If we examine contemporary maps, the “black town” to the north of the Fort is evident, with its ordered streets and much denser urban layout. Elizabeth described it methodically like an urban geographer or a planner would. She begins with the general overall description and gradually fills in the final details. The townscape was filled with landmarks, of various religious edifices like churches, pagodas or temples, mosques, and tombs, which were set in contrast to the lower residential structures, notably they were integrated throughout the settlement. The town followed a orthogonal circulation layout, streets were wide but not paved, street corners had signs written in two languages, Tamil (she referred to it as Malabar) and English, houses were also numbered. The residential structures addressed the street, with their two to three feet raised intervening stoops, platforms, and porches. Roof overhangs protected these platforms which during the day were used to sit or conduct business on and in good weather sleep at night. Like most traditional cities, houses combined residential and commercial or trade activities. From the outside, houses were not ostentatious, they had no windows giving on the street, the entrance to the houses too was kept modest, which at times was decorated with wooden carvings. However, the entrances were decorated: a practice that continues until now. Describing this proud tradition and the interior layout of the courtyard dwellings, Elizabeth wrote: "The door is small & low with a carving in wood over it & the wall of the house has no window to the street, but is painted according to the fancy of the owner - either with Tygers a Tyger hunt or dancing girls - flowers in borders or plain stripes. These paintings are in water colours painted on the white….".29
Elizabeth sketched a plan of one of these houses in her letter. She illustrated and described the passage leading from the door lined with a bench plastered in the same manner as the wall and the small room for cooking, shaded by a gourd vine and a closed, dark room used for sleeping during rainy times. Otherwise, she wrote, the people use the verandas for sleeping as well as working or keeping accounts. Furthermore, she noted the interdependent relationships of these houses with the surrounding countryside: "In such a house therefore the square wou'd be paved & no tree over it but the cooking & slop water thrown over it which is drained off but serves to keep it cool. - beyond this square there is another, which is a kind of yard where the Cows &c are kept & sometimes a Garden beyond, but their gardens are more frequently a mile or two from the towns in places appropriated to that use."

Moving to the south and west, the spread-out almost country like landscape of Madras is evident. Originally, the Governors of Madras lived within the protected confines of Fort St George in its compact surroundings. The construction of fortifications was expensive. Even under the fear of repeated attacks by native and other European powers, the city started to grow outside the fortification, where the Company agents had also laid out a garden for the employees. Then, a Company Garden House to welcome and entertain dignitaries was approved by the Board and constructed. Soon after, Governors started using this as a country place, but it was destroyed during the conflict with the French. So, when Madras reverted to the British, the estate of a wealthy merchant’s widow was acquired as a Governor’s house. In 1798, Edward Clive became Governor of Madras (1798-1803). Finding the house inadequate, he commissioned
his friend John Goldingham to renovate and enlarge it adding a banquet hall. Goldingham, was the head of the Madras Survey School and an astronomer and worked as an architect and engineer. The Grecian Hall he designed to commemorate the victory over Tipu Sultan, included the decorations of victory scenes of the Battle of Plassey in 1757 and the Great Mysore War. Describing the beauty of this hall in one of her letters to her mother, Elizabeth wrote:

Before the Monsoon it Lightened every night as soon as it was dark the sun set. The clouds have the most fantastick forms & the lightening shoots from different parts of the Sky in the most beautiful manner… . One Evening at a Ball at Lord Clive's where there are very large Glass Lusters, the Lightening shooting through the windows upon the cut glass lighted, up as they were, with the Dancers under them produced one of the finest effects I ever saw.

Once the Governor and the higher ups stepped out of the Fort, there was no stopping the others. According to Norma Evenson:

The founders of Madras and other colonial cities were temporary sojourners - adventurers in search of wealth. City planning involves an investment in the future, and the future, for those who lucky enough to survive and make their fortunes, lay in Britain. Although the initial settlement pattern of Madras embodied compactness and regularity, the overall development of the city reflected a semi-rural type of building. While the London merchant, confined in narrow terrace house, dreamed of the day when he might retire to a country estate, his counterpart in India enjoyed the life of a country gentleman while still engaged in urban commerce.
Thus, many wealthy merchants and Company agents acquired large properties outside the fort. As noted by Evenson, this was despite the opposition of the British East India Company officials to “the folly and vanity of merchants in having the parade of country houses and gardens and attempts by the Madras Council to restrict land grants to the upper rank of employees, a general movement outward proved irresistible.”

To the south and west of the Fort, tree-lined avenues connected the luxuriant estates of gracious bungalows and their large spaces, as we know from sisters’ letters. They were surrounded by small native settlements, and varied village appendages. Looking closely at contemporary maps, we notice the clumps of varied trees around numerous water bodies of varying sizes and well-constructed water-tanks, each married with their own cluster of houses and other structures. All village settlements are surrounded by their adjoining farms and paddy-fields. Strikingly, these elements work in harmony with the undulating ground plain. The colonial urban order of streets and buildings of varying sizes are dispersed on and within this semi-rural carpet. Describing the verdure-covered British folies and their giddy atmosphere Elizabeth wrote:

I think nothing of the kind can exceed the beauty of an evening ride to see all the houses lighted up & people dining or dancing in the Verandoes with the attendants lying about the garden, particularly at a Ball when if there are 150 people or 200 which is generally the number, there will be 400. 500 or more of these people in their muslin dresses scattered under the trees before the house. The Fort is very handsome from the Fortifications it has several handsome squares in it & the buildings are all in the same stile as the Garden houses, but higher but with flat roofs - The Church & some publick
buildings rise above them. In a view it looks like prints one has seen of views of Grecian Cities, all Temples & no middling houses.37

The tracts of land between the sea to the Saint Thomas' Mount and between the Adyar and Cooums rivers were covered with gracious homes of successful British merchants, Company Agents, and military officers, which include palatial structures like the Brody Castle, the Palladian mansion of the Chief Justice Sir Thomas Strange, and Gwillim’s own residence at Saint Thomè, of which Mary made several watercolors. These dramatic mini-palaces were interspersed with farms, paddies, waters, and interconnecting tree-lined avenues.

Mary Symonds' account of the landscape around Madras in 1801 gives us clear descriptions of the variety of native trees, many of them planted by local communities:

I think this is a most beautiful country here are a variety of fine trees and a delightfull verdure we drive out every morning from five to seven o'clock at which time it is quite fresh and cool here is the greatest variety of roads that can be made in a flat country and which ever one takes one is sure of a fine avenue or a beautiful lane shaded by the fall Bamboo intermixed with the gum Arabic tree which abounds here and is the most elegant tree that I ever saw, the largest trees that resemble English foliage are the tulip tree, the Banyan and the mango these I mean are common in the publick roads but we have a great number very fine in the Gardens.38

Mary’s paintings of their own residences in Madras39 and at San Thomè40 and other rambling dwellings, like Mr Falconer’s villa at Adyar (which later became the Madras Club)41 beautifully
capture their picturesque setting in the lush tropical vegetation. Her watercolors of the interiors are more revealing of the organization of the homes, the spatial sub-division, the use of bamboo screens, and their pavilionlike character with decorative balustrades. Elizabeth’s meticulous descriptions of these provide further architectural information to complete the picture. In a letter to her mother she wrote:

As you are a great architect I think you will like to hear something of the buildings here which are much talked of but I hardly know how to begin a subject so various - The Houses of all Europeans are nearly equal as to goodness & size in what situation soever the dwellers are, for building is cheap & young people generally build & these are let out afterward or sold - They are all like Pictures of Italian Palaces with flat roofs or balustrades, I hardly know what to compare them to that you know for they look like Marble & are all built with columns but it is a lighter kind of building than our fine churches in London & much more beautiful architecture than the inferiour... many are only Pavillions with nothing above the ground floor which is the case of the house we live in, they are the prettiest houses, but the upstairs houses as they call them have more air.

Elizabeth continues, to describe in detail the locally made lime or chunam with which the houses were covered, lending them the bright white appearance that originally gave white town its name. As she writes:

This Chunam is a finer lime than the Plaster of Paris it is made of the small white shells which this rough surf occasions the Sea to throw up in great quantities - To prevent them
being carried back with the tide there are fishers who with a peculiar kind of net drag them out of the surf they are then carefully cleaned & burned. The Stucco made of this lime & called Chunam bears a pollish almost equal to white marble, but as is generally said, but I think it is more like the pollish of or glaze of very smooth white China.43

Elizabeth went on describe the use of chunam on the columns and balustrades of the house and on the floors, where in the Gwillim household it was interspersed with black squares and closely resembled marble. She also describes the green-painted Venetian window blinds and folding screens used in the rooms, and the verandas, on which dinner was served.44

Remarkably, Elizabeth was aware of the inadequacies of the European-inspired architecture, especially when compared to the traditional dwellings which respond adequately to the hot tropical climate. She judiciously compared the merits of Indian and European housing in the same letter to her mother:

These kind of houses are much cooler than our large houses they have a very thick wall & the light coming down in the middle does not heat it as ours are heated which are exposed all round - They never sit in a draught of air They indeed lye down in the open air before Choultries &c but being in a house or near buildings which bring current of air they always get a wall at their backs, generally on three sides of them; but the Europeans think the more air the better & build their houses like lanthorns so that one can never get out of a draught of air & the rooms are too hot & too cold at the same time They are certainly beautiful buildings, but many regret that they have not the coolness of the native houses.45
Indeed, later in the nineteenth century, the British in India abandoned their Palladian-style villas in favour of bungalows, which were inspired by local housing.  

Another strategy to avoid the heat was to move out of town to higher ground at certain times of the year, a tendency that would later prompt the growth of hill stations. From 1803, the Gwillim and Symonds family began spending periods outside the city, first at St Thomas' Mount and later at a cotton farm owned by a Mr Webb in Pammal, about twelve miles from the centre of Madras. At Pammal, Mary turned her attention to local architecture, writing to her sister Hester in 1805 to report sketching "Pagodas (temples) & choultries & montathums (mountains), mosques, and mausoleums." Close to Pammal was the Ranganatha temple, which is visible in the background of several paintings with its distinctive twin gopurams and dwajasthambam (flagstaff) (Figures 1.5 and 3.2).

Mary's paintings also include a domed building, probably a mosque, a burial ground containing several tombs, and a building with minarets and tombs. Tomb shrines or dargahs were important places of worship for Sufis, whose devotions often focused on saints. The labelling of some of the paintings betray confusion over whether the building in question was a Hindu or Muslim religious building. As well as being a result of retroactive labelling (Mary seems to have labelled her paintings later, as shown by her use of her married initials M.R.), this can be explained by the fluidity of religious traditions in the subcontinent, in which Muslim saints' shrines often became linked with Hindu cult divinities.
Probably also while in Pammal, Mary painted a village scene with a pillared veranda shown in the foreground and a series of smaller thatched buildings in the background. Similar thatched buildings appear in the image titled "the Rustic Horn" (Figure 3.4). Elizabeth wrote describing them: "The Villages are still more concealed; they are for the most part in the groves of Cocoa palms, in the neighbourhood of some Chouldry or Pagoda both which are very numerous. They consist of a set of houses made little other than larger bee hives of the palm leaves platted & thatched with the same or with Palmyra leaves another kind of Palm."

In a later letter, she gave a similar description of the houses growing under coconut palms which provide shade. Here, she also provides a more detailed description of the fabrication of the house, which involved using brick, covered with mortar or chunam. She again describes the roofs as being made from either coconut palm or palmyra and the walls from the same materials, plaited into a sort of mat. These "beehive" shaped houses with palm-leaf roofs still survive in parts of the region. Their shape as well as the construction within groves of trees made them well-protected against extreme weather, as Elizabeth noted in another letter, writing: "wherever the natives of this country build they also plant every man makes a screen for his own house to shelter him from the bad winds & to shade him from the noonday sun."

Natural Environment and Climate
"This is the first monsoon day we have had, it now blows hard from the Northward and rains torrents, we are all praying for a heavy monsoon as the late dry season has occasioned a scarcity of rice in some parts, which is a dreadful thing in this country as the natives depend entirely upon it for thier subsistence" wrote Mary Symonds in 1803. Descriptions of weather, climate, and environment abound in European travel writings of the eighteenth and nineteenth century and are only beginning to be mined by environmental historians as they can provide important insights into the environmental and climate history of India. Local and regional histories of this kind are also beginning to be researched using a variety of sources, colonial, local, and indigenous.

South India at the time when the sisters arrived was rich in flora and fauna and its environmental history is yet to be properly mapped. Well before the advent of the Mughals, the Deccan had a flourishing garden culture that influenced the north. Irrigation systems flourished, and it was a Chola king who built the great anicut in the first century CE. Most empires in South Asia in the first millennium remained close to riverbanks in the valleys and grass lands in the plateaus. In between were large swathes of forest home to a large variety of flora and fauna and to Indigenous communities and forest polities. By 1800, patterns of engagement between different agroecological zones were characterised by connections and mobility. The resource extractions of the Maratha and Mughal empires was beginning to weigh heavily but unlike China, elephants were not on the retreat, but survived in part because of their used as war elephants. Borders between cultivated and the uncultivated lands (savannah, scrub, forest landscape) were fluid. The Tamil word *kadu* which variously signified dry land, thicket was transformed through settlement and water tanks into *nudu* or settled areas for cultivation by the thirteenth or fourteenth centuries. Rangarajan and Sivaramakrishnan argue that even as late as 1600 CE only one-fourth of the land was under the plough. Wild animals like cheetahs, elephants and tigers were abundant for example
in Vetavalam forests close to Gingee Fort in Tamil Nadu, and this was the landscape that the EIC came to encounter during the expansion of its rule in the latter half of the eighteenth century. By the later nineteenth century the destruction of the grasslands was apparent, with forest remaining only in the mountainous areas.

[INSERT FIGURE 3.5 HERE]

One of the most noticeable features of images and maps of this period is the abundance of water. Elizabeth described the seasonal and meandering character of the rivers:

We have four Rivers in this place neither none of them navigable within some miles of this place & then only for boats - They are very shallow streams, but broad when there has been rain & the banks rich with wood in many parts, they wind about this plain in a most irregular manner & there are a great many Bridges over them, besides innumerable fords which being causeways well made in the dry seasons are quite safe & we seldom go out to dinner without passing one two or three of these. These Rivers run into the Sea at this place some of them come down the country 40 or 50 miles, & they enliven the country exceedingly. The great beauty of this place is that if you quit the sea side you have always a river on one hand or the other, or else a tank, by which you are to understand a Lake, partly natural, but aided by art the dams being carefully kept up; Some of these tanks are many miles long & are very fine pieces of water - many of the houses are built on the banks of them with flights of steps to the water.
Elizabeth reflected on the importance of the network of tanks to sustaining agriculture in the region. As she wrote in a letter of 1802: "The rice is Green in the fields & the flowers keep blowing on us. They do not depend immediately on the rains for the preservation of things of that kind - The tanks & rivers do not fail & they cut channels in every direction which they easily fill & water every part."68 Two years later, she again referred to the importance of the tanks in providing water for agriculture, during a year where famine had been threatened until the rains arrived.69

The accurate descriptions of agriculture are insightful; they reveal local practices of irrigation and the wide variety of irrigation methods. Elizabeth wrote her mother in England, "It is carried on here in a manner just the reverse of your's and so is Gardening, for as you raise beds for the vegetables & leave a sunk path to walk round them, here they sink the bed about a hand-breadth, & the path round is raised. This is to retain the water which is of course much exhausted in the day."70 Their ruminations on agricultural practice also referred to enclosed fields with multiple cropping of crops such as rice, coconut palm and a variety of trees and shrubs:

The inclosures of the rice corn fields are very irregular some small & others like common fields in England with groves & plantations of tall trees & flowering shrubs, of every form more various than you can guess from the great leaf of the cocoa Palm each one of which is a load for a strong man & which he binds up & carries on his head or shoulder like a deal plank - to the fine cut Mimosas of many of which are as light & thin as a piece of lace (The Gum Arabica is the finest of all.) - These groves & corners & the full Hedges give a remarkable richness to the look of the corn fields - Never were seen such beautiful hedge-rows as are on each side the roads & dividing every field & garden.71
Clearly local agricultural practises maintained dams, aided irrigation, and nourished a thriving agricultural economy at the start of British rule. The abundant water, rich flora and fauna are well recorded in Elizabeth and Mary's paintings. The bounty of fruit and vegetables of all kinds are commented on:

Seasons are only considered in Vegetables - & in very few of those, most of the fruit trees bear blossoms & fruits at the same time. The plantains of all kinds are always growing, Mellons are not quite in yet - The favourite fruit of the country is the Mango & the Mango trees are now in full blow smelling very fresh & nice The orchards look like Walnuts or Pear trees but the flower is a large spike of small blossoms like Madow Meadow-sweet - There are as many sorts of Mangos as of apples & as much difference in them.  

Descriptions of the monsoon and the weather abound in the correspondence, though with an increasing degree of unease about the unwelcoming heat as the weather progressed: "The warm weather seems to agree with me very well it is now getting as warm as is agreeable - we had a few fine showers a day or two ago but we are not to expect rain till June & it will be hotter till that time. The last three months have been the most delightful weather that can be imagined - I begin to get quite a Housekeeper & to feel at home." 

These writings should be taken in the climatic context. The weather of the Madras region is mostly governed by the large-scale seasonal wind and pressure changes associated with the Southeast Asian (or Indian) Monsoon system, but it is significantly modified by the east coast position of Madras adjacent to the Bay of Bengal. The main features of the climate at Madras can
be divided into four seasons: (i) a cool dry season with NE winds from mid-December to mid-February; (ii) a hot, dry season with SE and later SW winds from mid-February to May; (iii) a SW monsoon rainy season from June to September; and (iv) a NE monsoon rainy season from October to mid-December. Upper easterlies prevail during both the SW and NE monsoon rainy seasons, but are replaced by upper westerlies in the dry season period. The southern peninsula of India is separated from the north by the Vindhya mountains and is more dependent on the monsoon which run east to west across central India. The monsoon marks the life of the seasons in South India, dominating agriculture, filling rivers, lakes, and irrigation channels.

Madras was one of the earliest sites for which meteorological observations were regularly recorded. The Madras meteorological observatory was established in 1786. Even earlier, from the mid-1700s, various missionary groups operating around Madras made the first recorded measurements of meteorological variables. Various diaries of their observations around 1732–37 and 1789–91 have already been studied, but more of this material has yet to be assessed. By the latter half of the 1700s, British colonial officers, such as the assistant surgeon Dr William Roxburgh and the Comptroller-General of the Army and Fortification Accounts on the Coromandel Coast, Colonel James Capper, were making daily meteorological measurements, including those of barometric pressure, at Fort Saint George in Madras. Those of William Roxburgh cover the period from October 1776 to May 1778 whereas those of Capper overlap for the period from March 1777 to May 1778 with some differences from Roxburgh’s (Capper’s records were written up in England after he had finished his tour of duty in India). These measurements help testify to the local effects of larger climatic events.

The Gwillim sisters were encountering the calm after the storm. India had been in the grips of a devastating El Nino from 1783-1793 which had killed an estimated 600,000 people in Madras
presidency. The unsettled weather brought typhoons and storms in the first instance and later droughts and famine.\textsuperscript{77} The most valuable section of colonial records preceding the sister’s arrival is the one containing details of the famine and general upheaval caused by a series of storms in 1787. Several sources reported on this event: an article in The Nautical Magazine recorded that “Captain Huddart describes one [storm] which destroyed ten thousand persons in the neighbourhood of Coringa, in May, 1787, and penetrated twenty miles over the country.”\textsuperscript{78} William Roxburgh noted a major loss of his papers, including those on various plant species in his collection, because of this event.\textsuperscript{79} The Madras typhoon of May 1787 was one of a series of very severe storms that year, which also affected Bengal and another storm was reported in November the same year, followed by an unprecedented “violent inundation” or flood.\textsuperscript{80}

An important point here about the meteorological record is that the second storm (along with others described below), which occurred in November, exacerbated the already difficult situation caused by the typhoon in May. This second disaster made the problems associated with the first much more difficult to recover from. The governor general, Lord Cornwallis, was suspicious of false claims, warning that “it will be the duty of the board of revenue to make the most scrupulous investigations, and to reject every ill-founded claim for deductions”. Again, an embargo on export was put in place, now for six months. The scale of the mortality evidenced in his writings. Already devasted by a famine in 1780, the circars of the Madras presidency were severely affected by drought in 1789-92 and many villages of the Godavery delta were depopulated.\textsuperscript{81}

Since 1782, according to Buchanan Hamilton, rainfall levels had deteriorated in southeast India. This was also noticed by Roxburgh. The drought ended in 1792 to be followed by another period of drought in 1802-1804. It is interesting and important that the sisters note the lack of
rainfall in the period 1801-1803. In March 1804, Elizabeth wrote that between their arrival in July 1801 and April 1803, there had only been around ten days of monsoon rain. Mary noted how close the region had come to famine on this occasion, particularly after the imposition of an embargo on grain exports from Bengal:

This is the first monsoon day we have had, it now blows hard from the Northward and rains torrents, we are all praying for a heavy monsoon as the late dry season has occasioned a scarcity of rice in some parts; which is a dreadful thing in this country as the natives depend entirely upon it for their subsistence, in Bengal they seem to entertain some apprehension as Lord Wellesley has issued an order that no grain of any description shall be exported from there. I suppose that will come a little hard upon us for we receive the greatest part of our wheat from thence.

In contrast, between 1804 and 1806, the rains were almost continuous. Agriculture in the district of Chingleput 40 km from Madras depended on the north-east and south-west monsoons and provides insights into how dependent the locals were on the monsoon in the nineteenth century. In fact, it could be deduced from the available evidence that the rainfall in the district was neither copious nor very regular. Rainfall averaged about 45 inches during the year, though this varied across localities. This was because the greater part of the annual supply was received from the north-east monsoon, which parted with some of its moisture by the time it traversed to the eastern side of the district. Rainfall sufficient for cultivation usually was not available in April and May. During the south-west monsoon (Jun to Sep) the early "dry" crops were grown. However, much of the cultivation was carried out with the north-east rains, which were supposed to fill the tanks
and enable the "wet" or irrigated crop to be raised.\textsuperscript{85} Elizabeth Gwillim noted this pattern of cultivation in a letter of March 1804. She wrote:

\begin{quote}
The Natives are much pleased with the season for it is a season of plenty. Rain is their wealth & their Glory - If we had not had such rains there wou'd probably have been a famine a dreadful calamity everywhere but to these poor people who make no provision for the morrow horrid beyond description - All the parts about this place however dry in appearance & which have been barren ever since I came here were sowed with Rice & different grains the whole place has looked like a corn country in England in June - they sowed in Dec: & now is the Harvest I suppose the greater part will be cleared in a about a week & the tanks that is reservoirs - or Lakes you may call them are still well stored & they will no doubt get a second crop.\textsuperscript{86}
\end{quote}

Elizabeth's claim here about the lack of provision for times of hardship made by local people was one that would become a common feature of colonial discourse. In fact, local coping strategies were progressively eroded by colonial policies. Later in the nineteenth century, the rise of mill-made cloth would result in the loss of livelihoods for weaving communities, but that was yet to come at the time the sisters were writing. There is, however, no doubt that even at this early date, the impact of a failure of the monsoon on the livelihoods of communities was exacerbated by British taxation and other colonial interventions.

Many of the sisters' comments on the weather relate to their own health and wellbeing. Both sisters complained about the land winds, which blew between April and August. Elizabeth wrote that although they were considered healthy by locals, "They give sometimes people a
dryness of the skin as if sand had been blown on it, & I found it impossible to keep my hair from curling to a perfect frizz.”

Elizabeth wrote that during the hot summer months of June and July, both she and Henry Gwillim suffered from boils and prickly heat. The damaging heat from June was described in great detail:

This wind has in it nothing unwholsome but by blowing over a long space of Land heated by the Sun & by bringing with it a quantity of fine sharp Sand it gives a burning to the skin just like the effects of a sharp frost in England. The extremes of heat & cold seem to produce nearly the same effects. The wind sweeps with great violence & is dangerous for this reason that the heat & sharpness of it produces boils & prickly heat which if exposed to the wind are checked by it - for this reason we wear shawls & guard ourselves from it by shutting the windows as we do from Cold - These winds are not very troublesome when they are low or during the night & in good seasons the sea breeze sets in as it has lately done at nine in the morning.

As mentioned above, by April 1802, they had moved closer to the sea, in San Thomé to avoid the worst of the heat, with some success. David Arnold has written extensively about death in the tropics that stalked the white man and woman and how in the latter half of the eighteenth-century graveyards were littered with the stones of young British men, women and children who had died due to a variety of diseases including malaria and other fevers caused by waterlogging and inclement weather. Although the sisters' letters contain many complaints about the weather, they also believed that they would become "seasoned" to the climate over time. As Mark Harrison and Suman Seth have shown, this attitude would give way over the course of the nineteenth century
to a more rigid sense of racial difference, in which European constitutions were considered unadaptable to the Indian climate.\textsuperscript{93}

**Conclusions**

The stay of the sisters in India was short. In the seventh year of their stay, Elizabeth died, after which Mary departed for England. Nevertheless, they left a remarkable trail of letters that offer a window into the social, cultural, and environmental history of India. It is essential to note not just what is said in the letters but what is unsaid. The unsettled conditions, the precariousness of British rule in the period, the agricultural decline, the increasing poverty, and the famines underlie the letters and need to be brought to the fore. The correspondence ends on a somber note with news and descriptions of the Vellore mutiny or uprising on 10 July 1806 which was the first instance of a large-scale and violent mutiny by Indian sepoys against the East India Company, predating by half a century the Indian Rebellion of 1857. The revolt, which took place in the South Indian city of Vellore, lasted one full day, during which Indian soldiers seized the Vellore Fort and killed or wounded 200 British troops, before the uprising was brutally suppressed.\textsuperscript{94}

Despite the damage wrought by colonial rule, the landscapes and wildlife of India would continue to inspire British artists and writers over the centuries after Elizabeth and Mary's visit. Edward Lear (1812-1888) was the last major British painter to travel to India from 1873 to 1875 before the widespread use of photography. Remarkably, he began his artistic career as an ornithological painter. During his India trip he made more than 2,000 watercolors and drawings and his visit included trip to the Coromandel, Mysore, Travancore. In his Indian Journals he wrote: “Such redundant beauty one could hardly dream of! India, Indiaissimo! Every foot was a picture. Altogether, a new world my masters!” Elizabeth and Mary's paintings and
correspondence similarly register their wonder at the beauty of the landscape and architecture of southern India.


2 It was first published in English Illustrated Magazine in May 1893, originally, as one of the six poems which form "A Song of the English," and subsequently, it was included in his collection of poems Rudyard Kipling, *The seven seas* (London: Methuen & Co, 1896).


5 Love, *Vestiges*, 89.


8 Elizabeth Gwillim to Esther Symonds, January 23, 1802, BL IOR Mss.Eur.C.240/1, ff. 21r-32r, f. 22r.


11 *Vestiges of Old Madras*, vol 2.


16 Though, according to Merriam-Webster, the word environment as referring to our natural surroundings was first used by Carlyle in context of Scottish countryside in 1827.

17 Dias, "Recording and representing India".


20 Their trips were funded with sponsorship from the East India Company that also helped with the production of their *Oriental Scenery* (London: Robert Bowyer, 1795-1808). Hundreds of sketches, studies and notes were taken throughout their expeditions, many of which are in the British Library.

21 Madras Survey School later grew into the Guindy Engineering College. Because of its roots it is considered the oldest technical education institutions outside of Europe.


27 Mary Symonds to Hester James, February 11, 1802, BL IOR Mss.Eur.C.240/1, ff. 39r-46v, f. 39r.


29 Elizabeth Gwillim to Esther Symonds, January 23, 1802, BL IOR Mss.Eur.C.240/1, ff. 21r-32r, ff. 29v-30r.

30 Elizabeth Gwillim to Esther Symonds, January 23, 1802, BL IOR Mss.Eur.C.240/1, ff. 21r-32r, ff. 29v-30r.

31 Elizabeth Gwillim to Esther Symonds, January 23, 1802, BL IOR Mss.Eur.C.240/1, ff. 21r-32r, f. 30v.
The original location of the garden was to the north of the Black Town. What we see here in the 1814 map is its new location.

He is known for his work as an astronomer, which includes the experiment to measure the velocity of sound, establishing the geographical coordinates, and the time of Madras among others. He was relieved of his Hall commission for charging very high fees, but that is another story.

Elizabeth Gwillim to Esther Symonds, January 23, 1802, BL IOR Mss.Eur.C.240/1, ff. 21r-32r, ff 24r-2v.

Evenson, *The Indian Metropolis*, 5.

Evenson, *The Indian Metropolis*, 5.

Elizabeth Gwillim to Esther Symonds, January 23, 1802, BL IOR Mss.Eur.C.240/1, ff. 21r-32r, ff. 29r-29v.

Mary Symonds to Esther Symonds, October, 14 1801, BL IOR Mss.Eur.C.240/1, ff.12r-13v.

Planting trees as wayside shade has a history that goes back to Ashoka's edicts. The tradition was continued under the Mughal and later the British regimes.

Madras Album, South Asia Collection, PIC PIC106.55

Madras Album, South Asia Collection, PIC106.77.

Madras Album, South Asia Collection, PIC106.47.

Elizabeth Gwillim to her Mother, Esther Symonds, January 23, 1802, BL IOR Mss.Eur.C.240/1, ff. 21r-32r, ff. 28r-29v.

Elizabeth Gwillim to her Mother, Esther Symonds, January 23, 1802, BL IOR Mss.Eur.C.240/1, ff. 21r-32r, ff. 28r-29v.
Elizabeth Gwillim to her Mother, Esther Symonds, January 23, 1802, BL IOR Mss.Eur.C.240/1, ff. 21r-32r, ff. 28r-29v.

Elizabeth Gwillim to her Mother, Esther Symonds, January 23, 1802, BL IOR Mss.Eur.C.240/1, ff. 21r-32r, ff. 30v.


South Asia Collection, PIC106.9, "Entrance into a Hindoo Temple".

South Asia Collection, PIC106.2, "Palms Near Sacred Buildings".

South Asia Collection, PIC106.13 "A Mohamedan Tomb and Minarets". PIC106.29 also shows a building with minarets, perhaps the same building from a different angle and a domed building.

South Asia Collection, PIC106. 9, "Entrance into a Hindoo Temple" seems to show a mosque, while PIC106.6, showing a temple in the foreground, is variously labelled "A Mahomedan Mausoleum," "Buildings attached to a Pagoda," and "Entrance to a Hindoo Temple."


South Asia Collection, PIC106.7.

Elizabeth Gwillim to Esther Symonds, October 17, 1801, BL IOR Mss.Eur.C.240/1, ff. 14r-18v, 15v.


57 Mary Symonds, Gwillim Correspondence, 1802

58 Mary Symonds to Hester James, October 20, 1803, BL IOR Mss.Eur.C.240/2, ff. 154r-159v, f. 154v.


60 Christopher Hill, *The environmental history of South Asia*, 2008

61 Hill, *The environmental history of South Asia*.


66 Today, Chennai has only three main rivers: in the North, Kosasthalaiyar; the South, Adyar; and in the middle, the Cooum that flows through the city. The three rivers are connected by the Buckingham navigational canal which was built in the 19th century after they left Madras. There
were several smaller rivers in the area. Many were covered over, so not evident which fourth river she is referring to.


68 Elizabeth Gwillim to Hester James, August 23, 1802, BL IOR Mss.Eur.C.240/1, ff. 72r-76v, ff. 73r-73v.


70 Elizabeth Gwillim to Esther Symonds, January 23, 1802, BL IOR Mss.Eur.C.240/1, ff. 21r-32r, f. 28r.

71 Elizabeth Gwillim to Esther Symonds, January 23, 1802, BL IOR Mss.Eur.C.240/1, ff. 21r-32r, f. 27r.

72 Elizabeth Gwillim to Hester James, March 18, 1802, BL IOR Mss.Eur.C.240/1, ff. 49r-54v, f. 52r.

73 Elizabeth Gwillim to Hester James, March 18, 1802, BL IOR Mss.Eur.C.240/1, ff. 49r-54v, f. 52r.

74 RPD Walsh, et.al, 1999 quoted in Allan, Reason, Carroll, and Jones, "A reconstruction of Madras (Chennai) mean sea level pressure".

75 Christopher Hill, *South Asia: An Environmental History* (Santa Barbara, Calif.: ABC-CLIO, 2008).

76 Allan, Reason, Carroll, and Jones, "A reconstruction of Madras (Chennai) mean sea level pressure".

‘Corringa storm”, *The Nautical Magazine*, vol 1 (1832), 293. Coringa is in Andhra Pradesh.


Roxburgh’s diary quoted in Campbell and Hunter in Vinita Damodaran et.al., "The 1780s" in White, *Palgrave handbook of climate history*.

Campbell and Hunter, *Extracts*, 141.


Mary Symonds to Hester James, October 20, 1803, BL IOR Mss.Eur.C.240/2, ff. 154r-159v, f. 154v.

Elizabeth Gwillim to Hester James, February 11, 1806, BL IOR Mss.Eur.C.240/4, ff. 310r-313v, f. 310v-311r.


Elizabeth Gwillim to Esther Symonds, January 23, 1802, BL IOR Mss.Eur.C.240/1, ff. 21r-32r, f. 22v.
Elizabeth Gwillim to Esther Symonds, July 16, 1802, BL IOR Mss.Eur.C.240/1, ff. 62r-71v, f. 71r-v.

Elizabeth Gwillim to Hester James, August 23, 1802, BL IOR Mss.Eur.C.240/1, ff. 72r-76v, ff. 72v-73r.

Elizabeth Gwillim to Hester James, August 23, 1802, BL IOR Mss.Eur.C.240/1, ff. 72r-76v, f. 72v.


Mary Symonds to Hester James, February 7 1803, BL IOR Mss.Eur.C.240/2, ff. 100r-103v, f. 102r.
