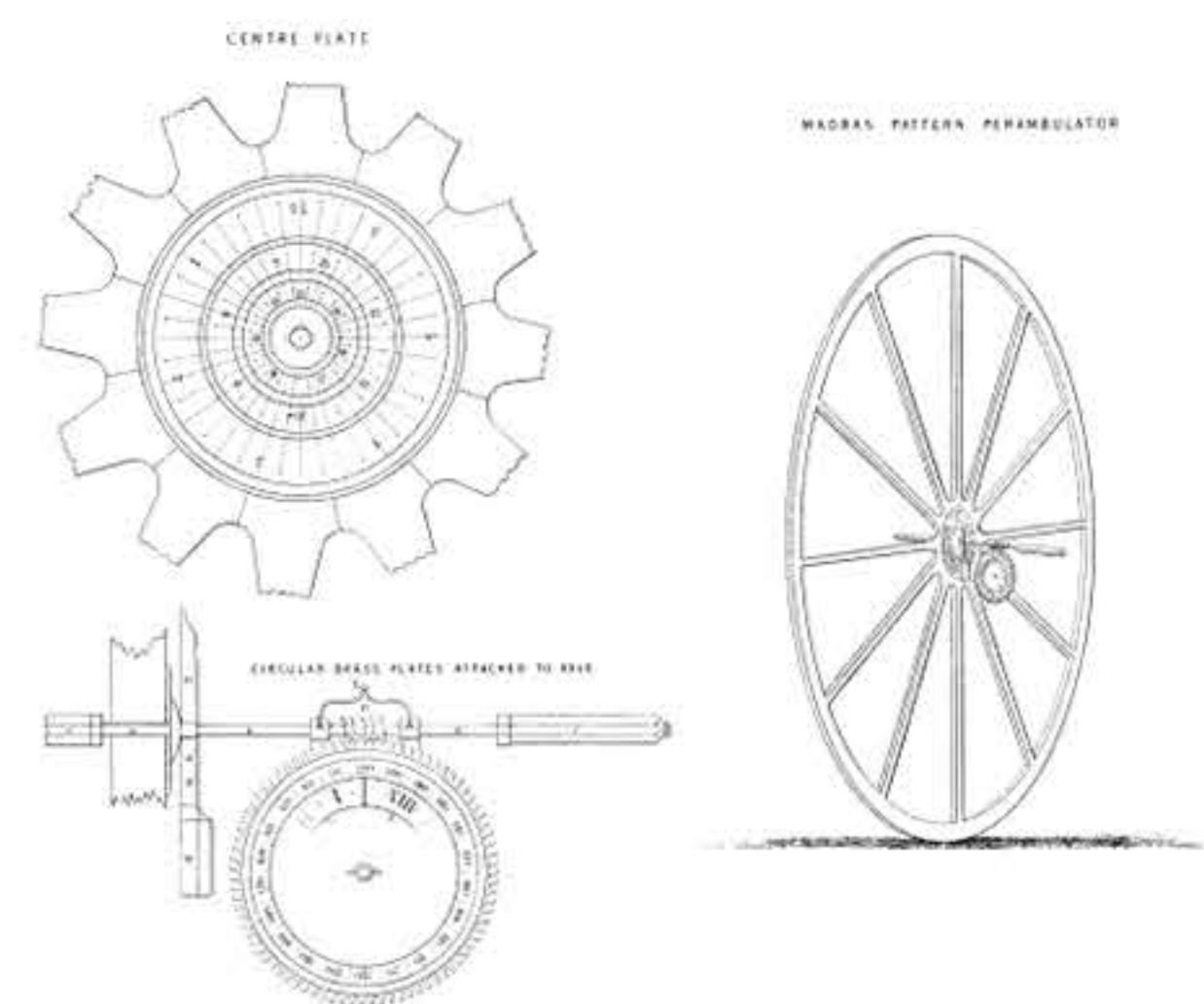


# SURVEYING

In 1791 the East India Company army prepared to ascend the ghats from the coastal plains of the Carnatic near Vellore. It comprised 14,000 'effective men', many of them on horses, 27,000 bullocks, artillery, and 80 elephants. Added to this were attendants of men and animals numbering "four times the fighting force," families of native soldiers, merchants with their own servants, and 'adventurers' "with no other view than to plunder in the enemy's country." The result, according to Major Dirom was "a scene altogether resembling more the emigration of a nation guarded by its troops than the march of an army, fitted out merely with the intention to subdue the enemy!"

Governor General Cornwallis would lead the army but he was in turn led by route surveyors -- men with perambulators, compasses, knowledge of the stars, but above all the ability to be ahead of themselves. Upon the route surveyor, it was often said, rested the fate of the army. They identified routes, sources of water, food and forage, sites for attacks, camp grounds, etc. They also plotted the objects that they singled out and in the process mapped 'new' territories.

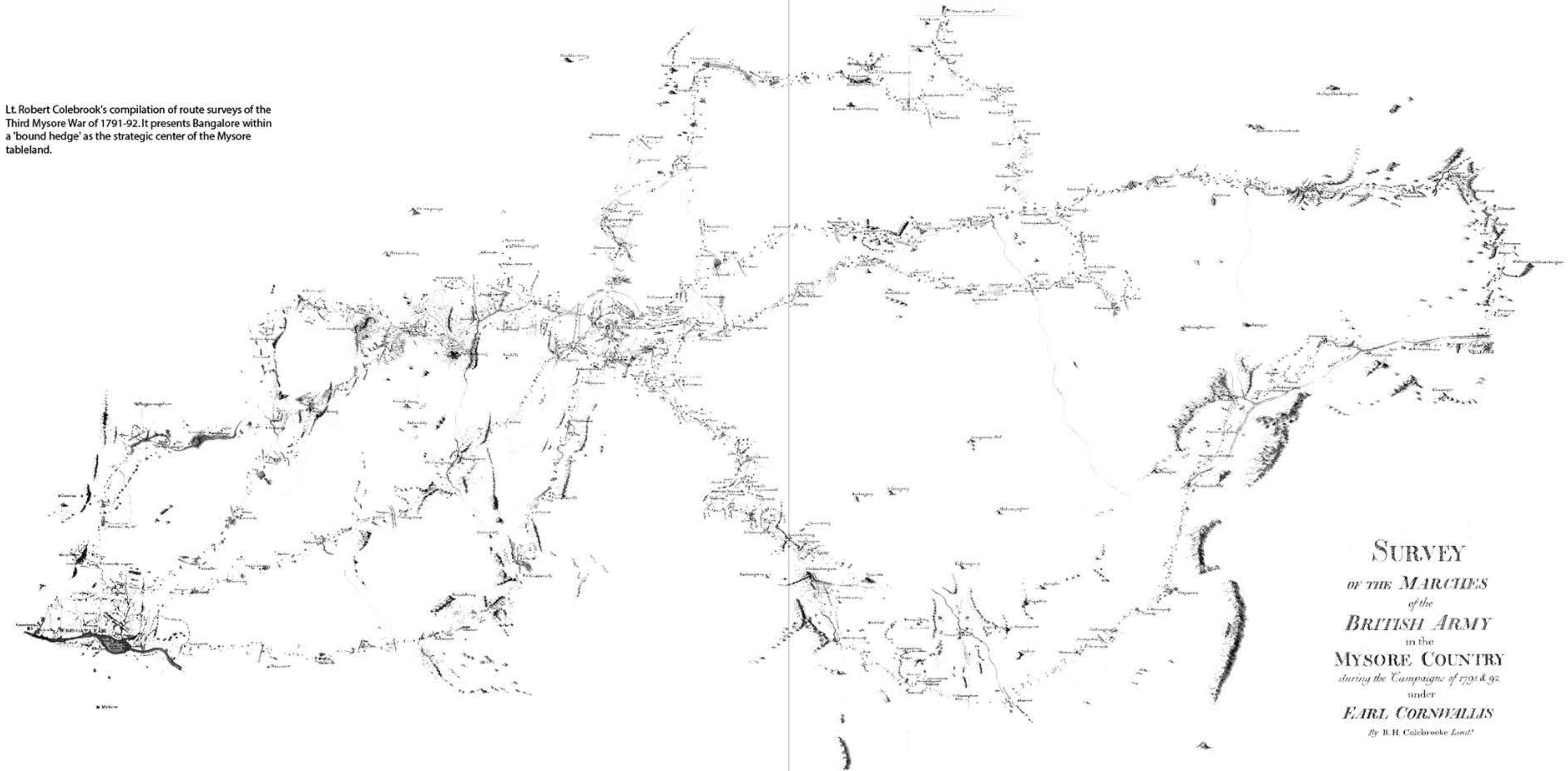
The "Madras Pattern Perambulator," from Colonel H.L. Thuillier and Lt. Colonel R. Smyth's *A Manual of Surveying for India*.



A page of Beatson's field book showing Cornwallis' army entering the 'interior' by the Moogly Pass connecting Chittoor (bottom left) and Palmaner (middle right). "This line in the middle of the page [2 inches to a mile]," writes Beatson, "represents the tract of the perambulator: upon which, are noted the distances measured; the bearings of the road by a pocket compass; the objects to the right and left, as hills, rivers, tanks or reservoirs of water, villages, forts, ravines, etc. are sketched in plan, to which are added short descriptions or remarks."



Lt. Robert Colebrook's compilation of route surveys of the Third Mysore War of 1791-92. It presents Bangalore within a 'bound hedge' as the strategic center of the Mysore tableland.

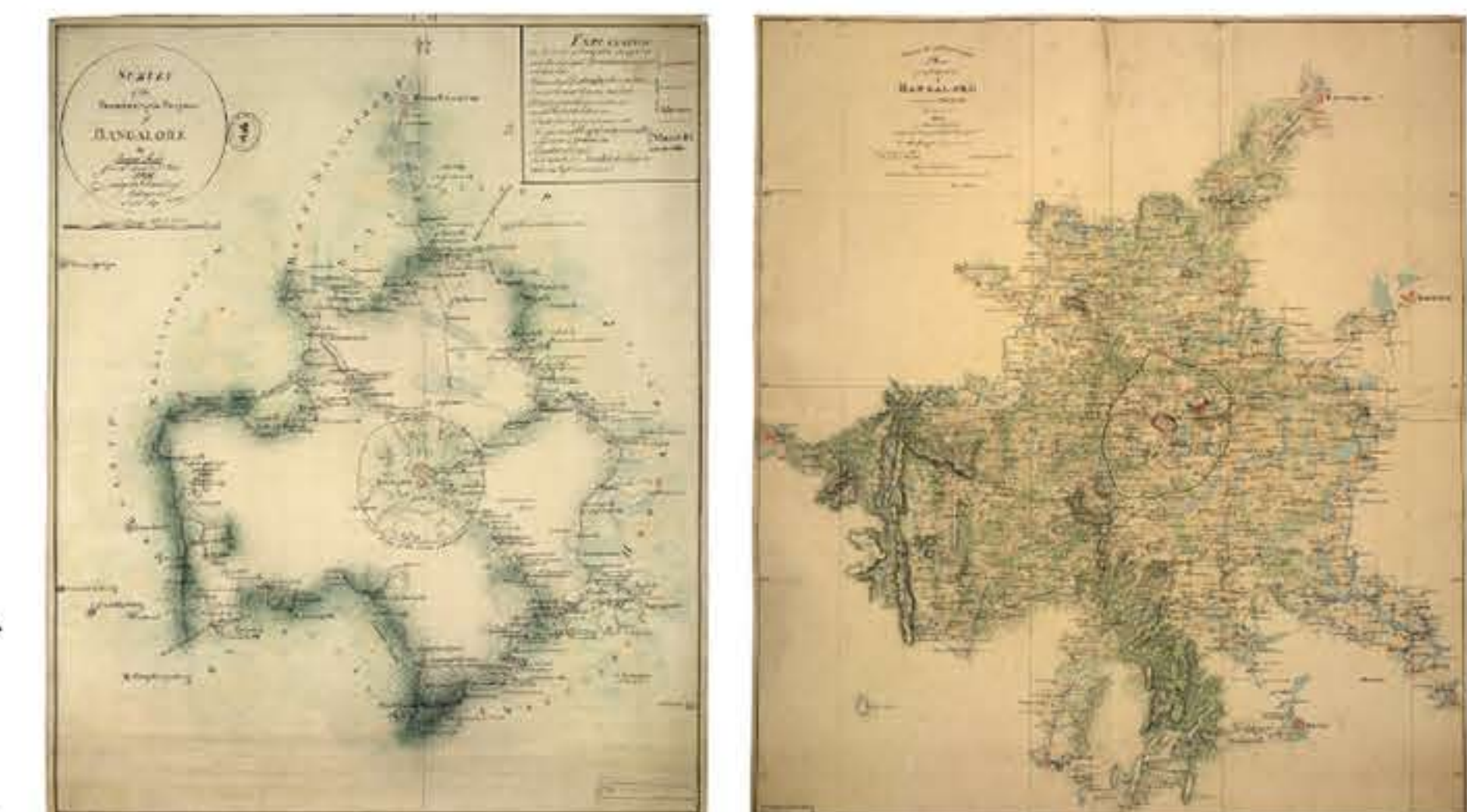


The land to the west of the ghats was a new territory to the route surveyor. They were familiar with the Payenghat (land below the passes) through the many battles that the Company had fought since the 1740s. They were now prepared to enter the Balaghat (land above the passes) described by Sir Walter Scott as the "interior" beyond "those tremendous mountain-passes ... winding upwards among immense rocks and precipices." Cornwallis was determined "to bring the enemy to a decisive action in the field," the enemy being Tipu Sultan who had been 'raiding' the Carnatic from the haven of the interior, determined as he was to rid the subcontinent of the English. Cornwallis' eventual goal was to take Seringapatam, Tipu Sultan's capital. The immediate objective however was to take Bangalore.

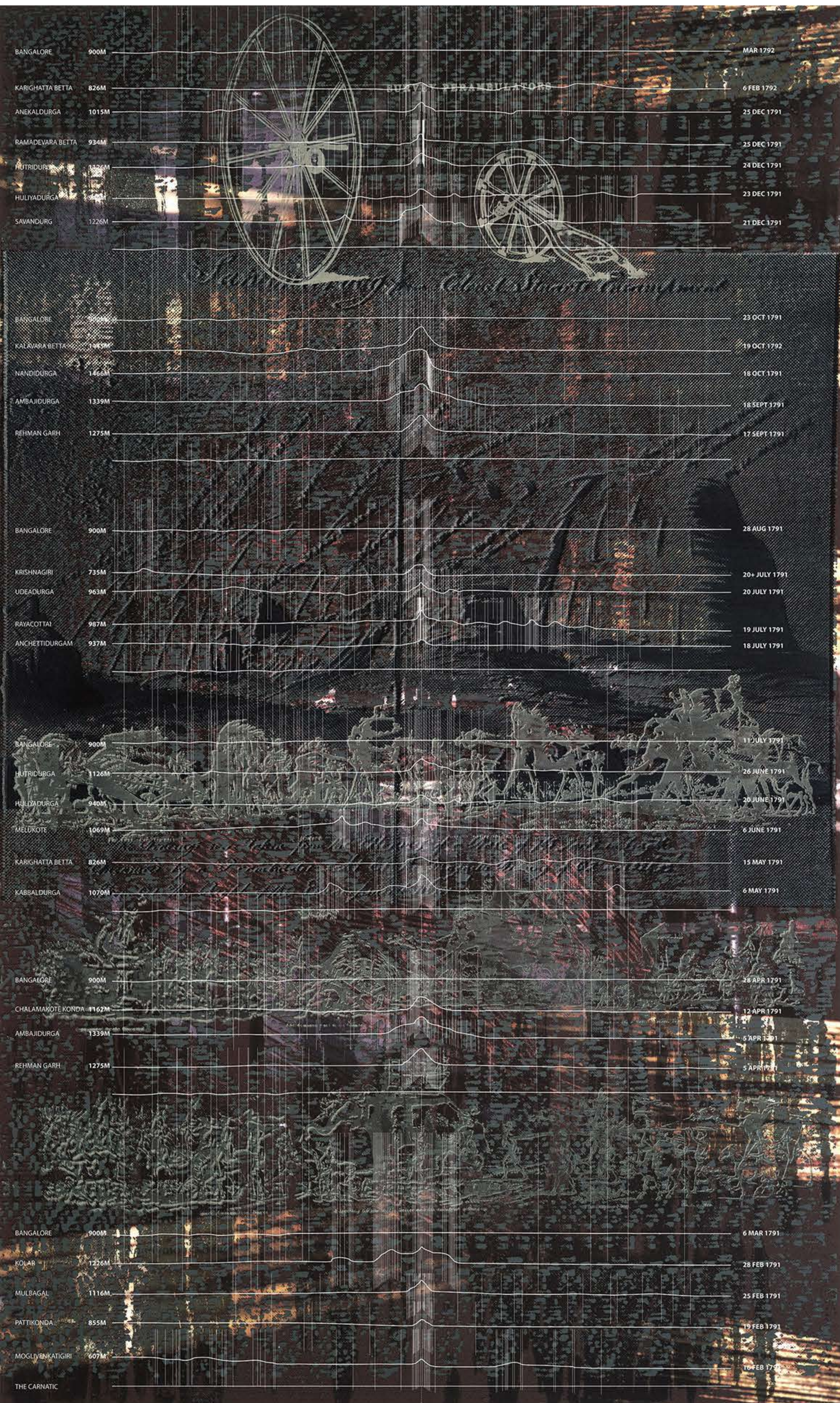
# BANGALORE 1

Bangalore however would not merely be a stop on the way to Seringapatam; it would become the Company's 'home ground', a base from where Cornwallis would initiate a series of expeditions that in the maps of route surveyors would assert Bangalore's centrality on the tableland.

An 1800 map and an 1832 map of the Purgannah of Bangalore show the progress made by route surveyors after the Third Mysore War. They moved from battle routes to administrative boundaries to the 'interiors,' plotting information on topography, settlement, vegetation and water bodies, giving the tableland a vocabulary of landscape.

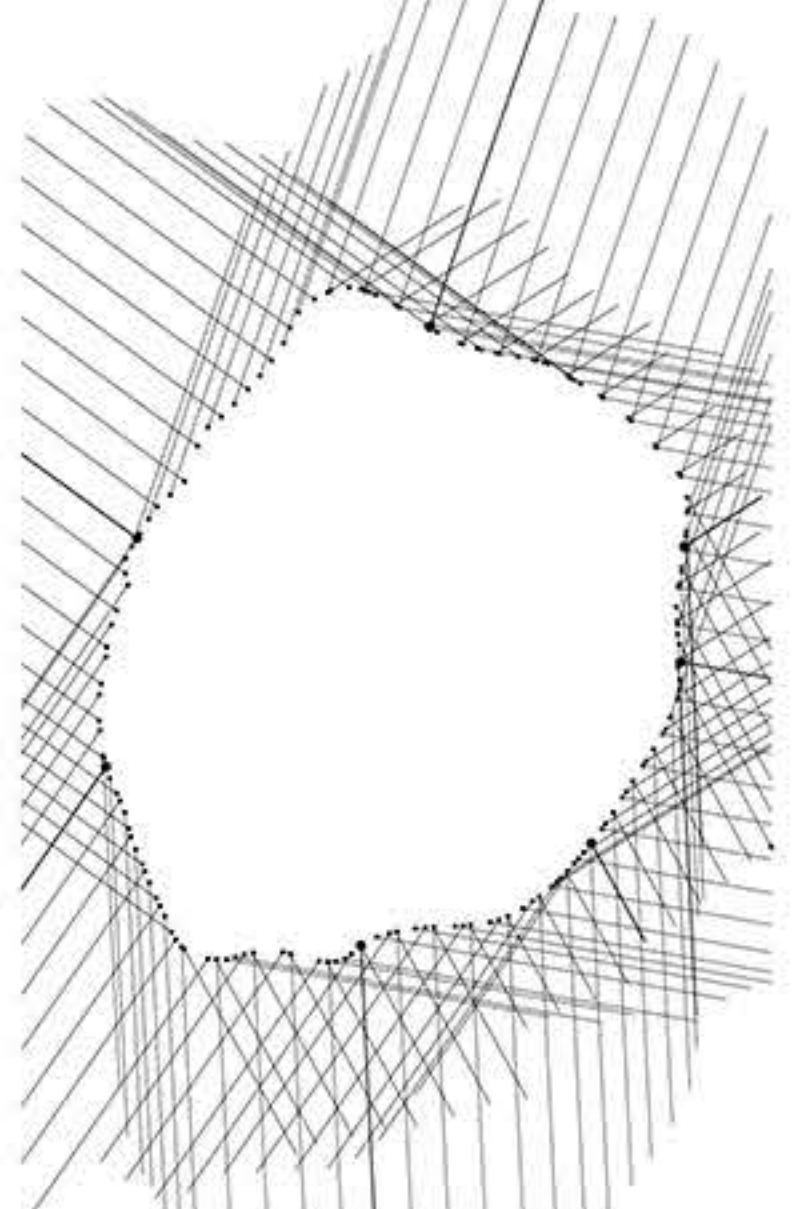






# CAMP GROUND

Once through the Moogly Pass and on the Mysore Tableland where "the air was remarkably pure; and the nights very cold; from the greatness of the elevation," Cornwallis raced to Bangalore. He reached it alongside Tipu Sultan's army retreating to intercept him from the southeast where Tipu was led to expect the English. The armies converged just outside the "bound hedge" of Bangalore, "a broad strong belt of planting, chiefly the bamboo tree, the prickly pear, and such other trees and shrubs as form the closest fence." From March 5th to the 21st 1791 the fifty square kilometer area within this hedge was the site of maneuvers, charges, assassination attempts, bombardments, defenses and encampments.

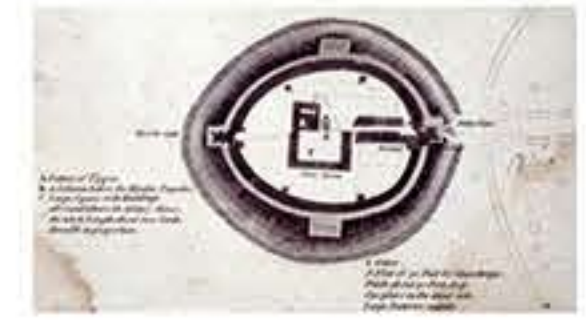
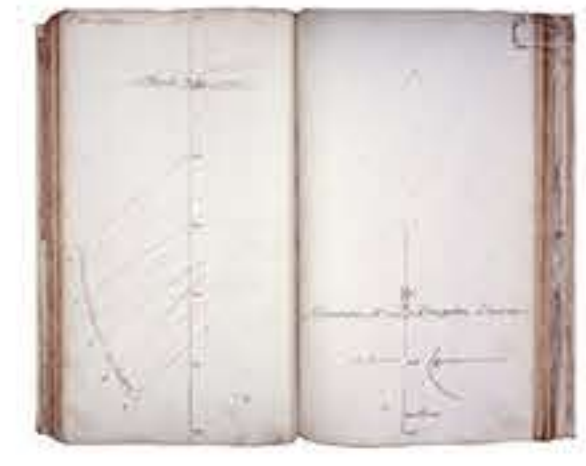


Tipu Sultan's men camped to the southwest while Cornwallis camped to the northeast, storming the pettah on March 7th "as the only means of procuring forage for the cattle and materials for the siege." Two weeks later with the "moon shining bright" he took the fort.

On the undulating terrain of the tableland between droogs the first obstacles faced by an attacking army were 'bound hedges'. They enclosed a group of settlements. Bangalore or Bengaluru was within one such hedge. This enclosure did not last through the 1800s; but it has left its traces - the toll stations on the major highways, the same roads by which Cornwallis' army entered and exited each time they undertook an expedition from their base within the hedge.

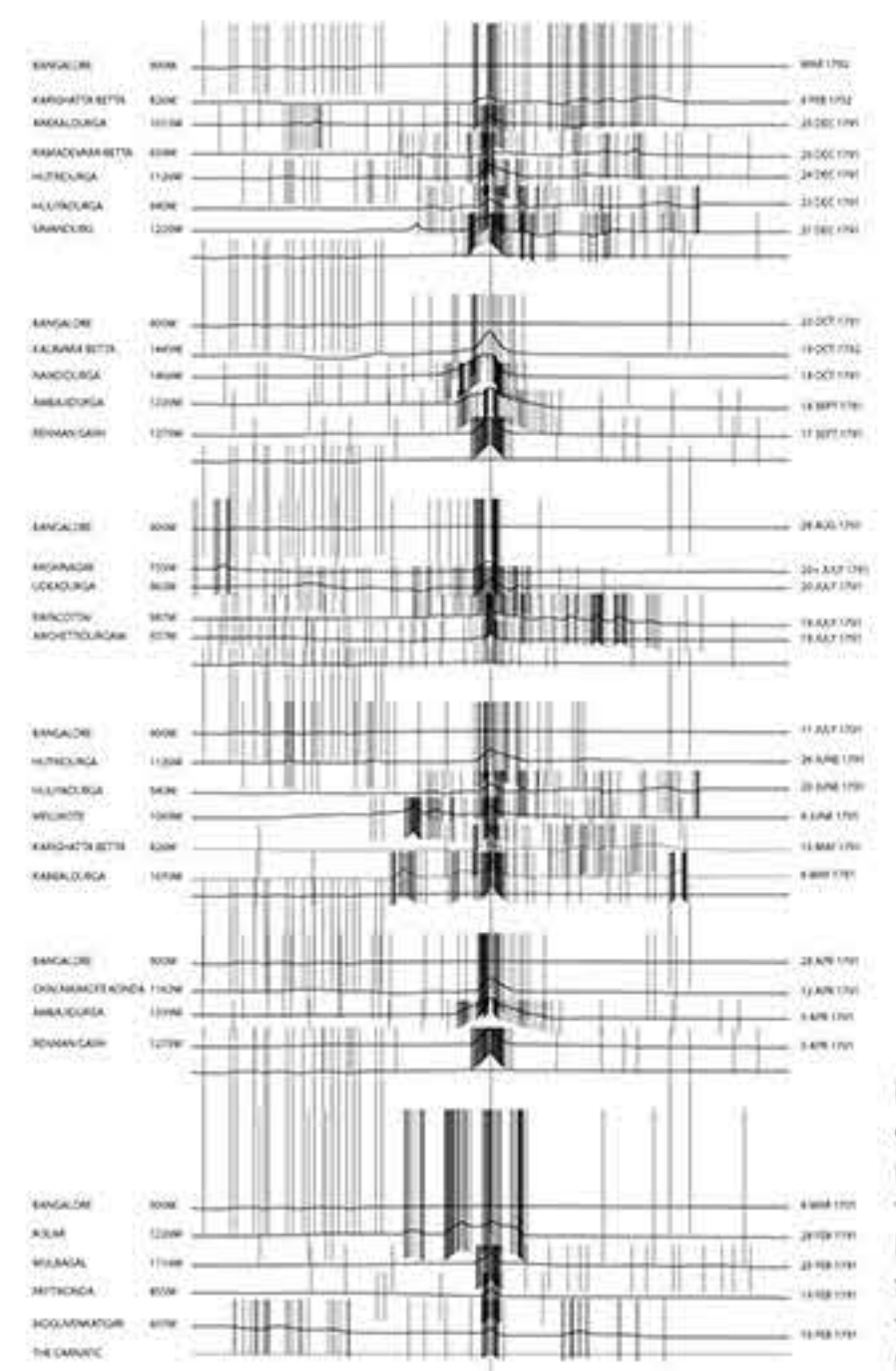
For a better part of the year thereafter, the centrality of Bangalore was inscribed on the tableland. From here Cornwallis's men undertook a number of expeditions always returning to a place that Major Dirom writes, "the army looked forward to as their home." These forays involved battles for droogs. The droog, one surveyor writes, is "a hill, or rather a mountain, standing by itself in a plain, or so unconnected with its contiguous chain as to be out of reach of annoyance from that quarter. It is also such as to be, from its declivity, or the scarped nature of its sides, particularly difficult of ascent." Eventually Cornwallis conquered them all, clearing the way to reach Seringapatam in February 1792 to force the Sultan to the treaty table.

Major Alexander Beatson's field book records a meeting of Cornwallis' and Tipu Sultan's armies outside the 'bound hedge' of Bangalore. "Thick fog concealed the Mysoreans for some time after sun rise; but clearing up as the day advanced, their whole force was discovered in motion toward Bangalore. Orders for marching were immediately issued in the British camp, and the two powers moved for some time parallel to each other, separated by a piece of low swampy ground." The Sultan's forces, "made a show of offering battle; but Lord Cornwallis, not deceived by this feint, opposed to him his left wing only, while the right, covering the battering train, baggage, and stores, pursued its march."

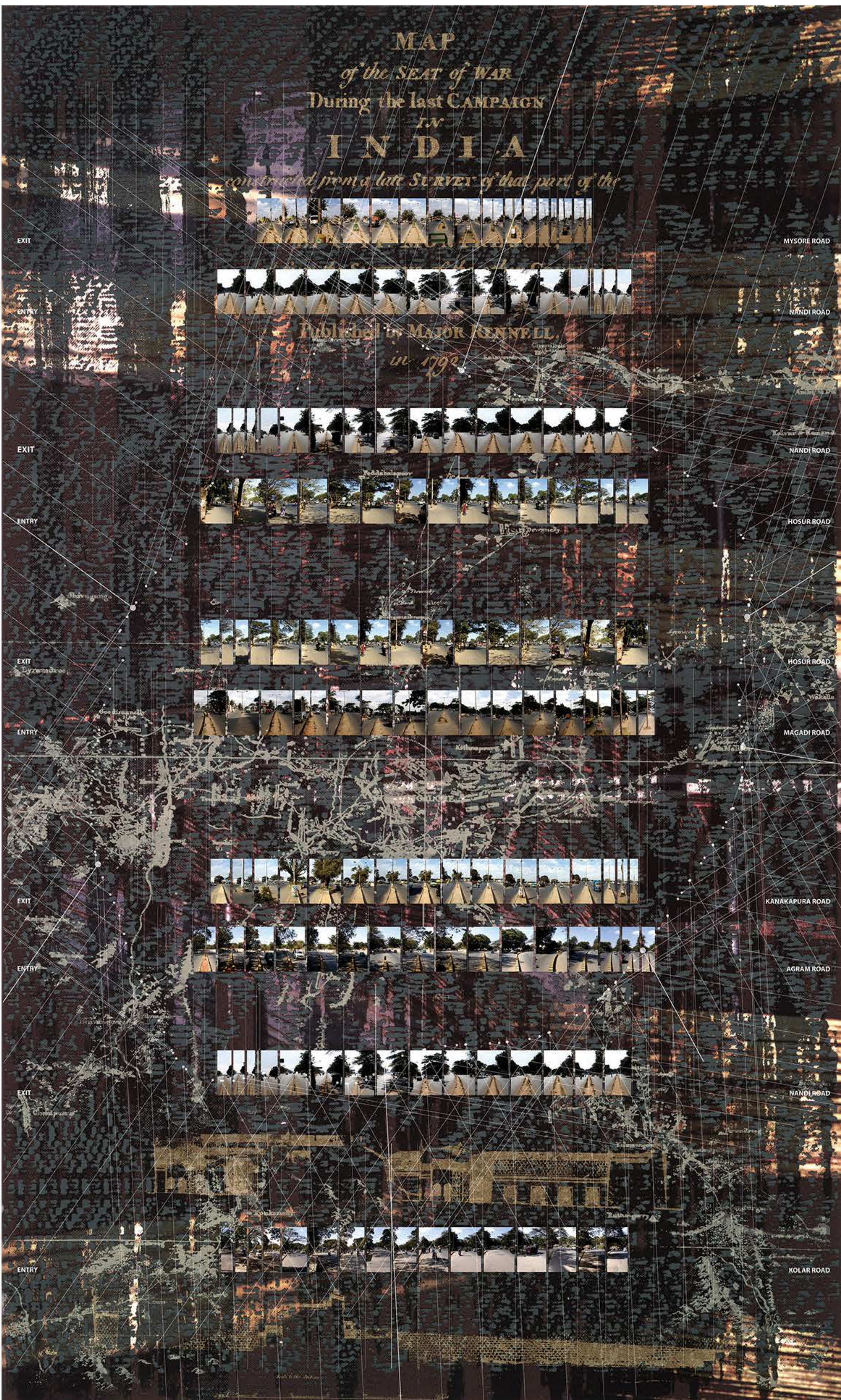


"This fort is about a mile in circumference," notes Colonel Claude Martin of the stone fort south of the pettah, taken by the Company on March 21st 1791, "and shaped like an egg. There are two entrances to it: one at each end, lying to the north and south."

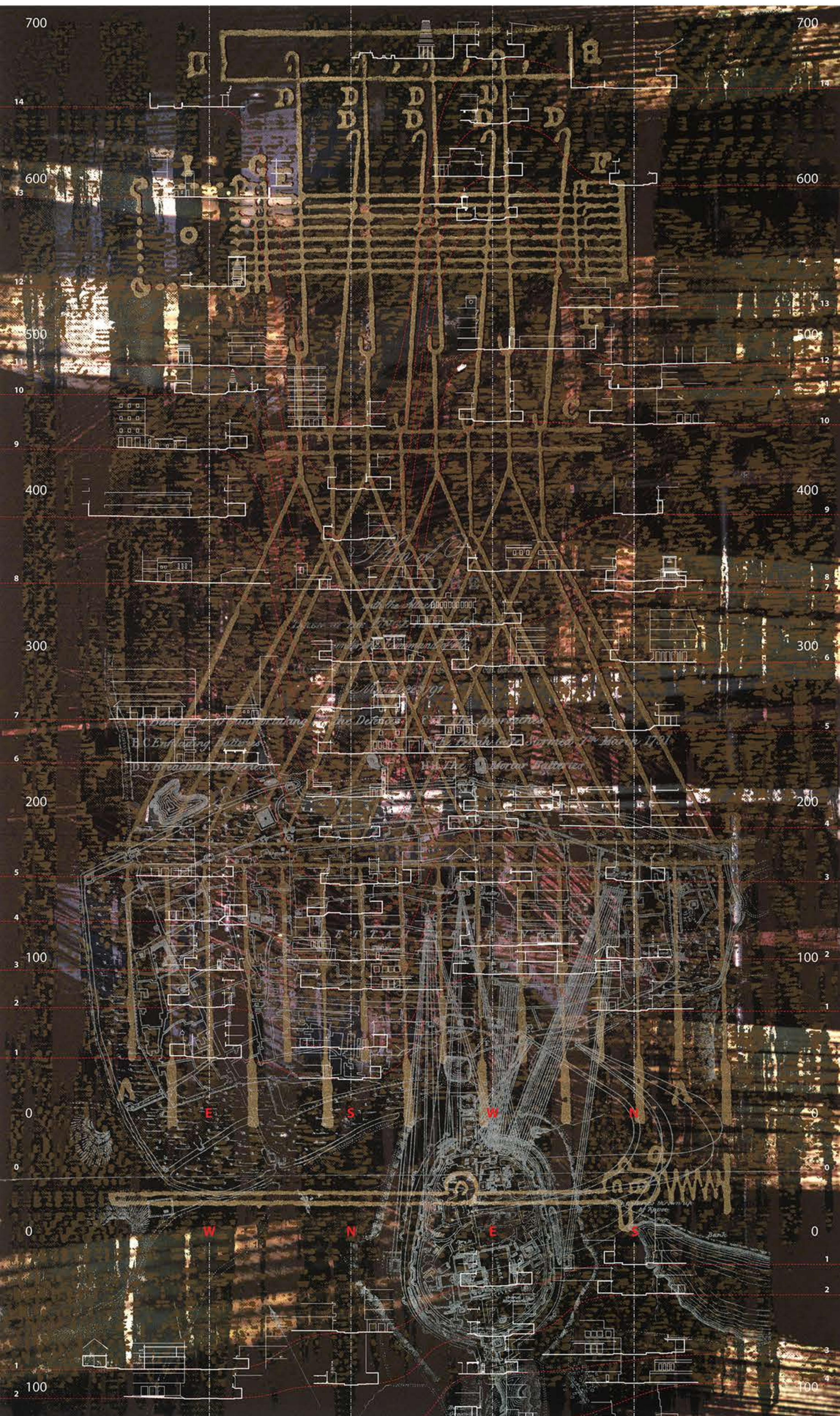
The battle for Bangalore took place within the 'bound hedge' and extended from March 7th when the pettah was captured to March 21st when the fort was taken. Surveyors distinguished between low grounds of water collection and high grounds for positions and camps.



Droogs were sentinels of the Mysore country. Each of these "immense masses of naked stone" loomed 200 to 500 meters above a pettah whose inhabitants sought its summit in the face of enemies. Cornwallis captured these hills in a series of expeditions from his camp in Bangalore.





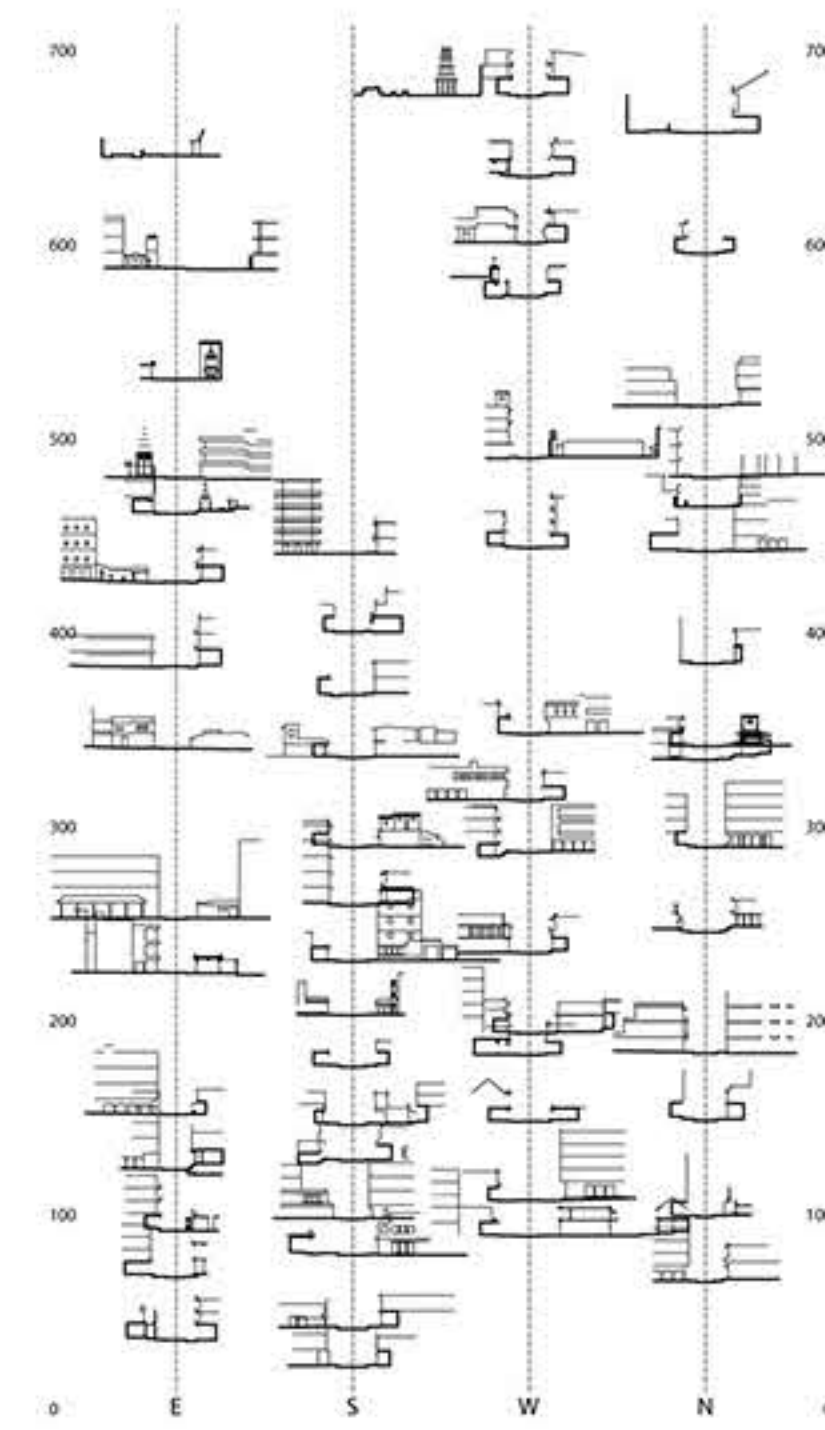


# PETTAH

On March 6th 1791 surveyors reconnoitered the Bangalore pettah, searching for ways to penetrate its "three-mile circumference" which was fortified with a "lofty mud wall, a thick hedge of bamboo, thorny bushes and prickly shrubs nearly a hundred yards wide, and a dry ditch." They chose the north gate to break in. Here they found "streets laid out with much regularity, and of great width; few towns in Hindostan can boast of better houses, or of richer inhabitants." They also found "bales of cloth, with immense quantities of cotton and grain; ... indeed the booty dug up by individuals, out of concealments and deserted houses, strongly indicated ease, comfort, and happiness in former times."

Surveyors mapped this entity in the days that followed. When historians would later seek the origin of this town they would find it in the life of Kempegowda I, a chieftain whom they say laid it out in 1537 as a 1.5 square kilometer walled entity. Their image is the surveyor's drawing of 1791. But these men would also uncover a myth which suggested that the pettah's beginning was in an event rather than a walled entity. The story goes that at an auspicious moment at a place where in a dream he saw a hare chase a dog Kempegowda I pointed "four milk white bullocks ... harnessed to four decorated ploughs" in four directions and let them furrow the streets. Mud-walls were merely moments in the unfolding of this event.

Today's Bangalore can be seen as a continuation of this event as it intersects with the trajectories of other initiations each evolving by its own rhythms.



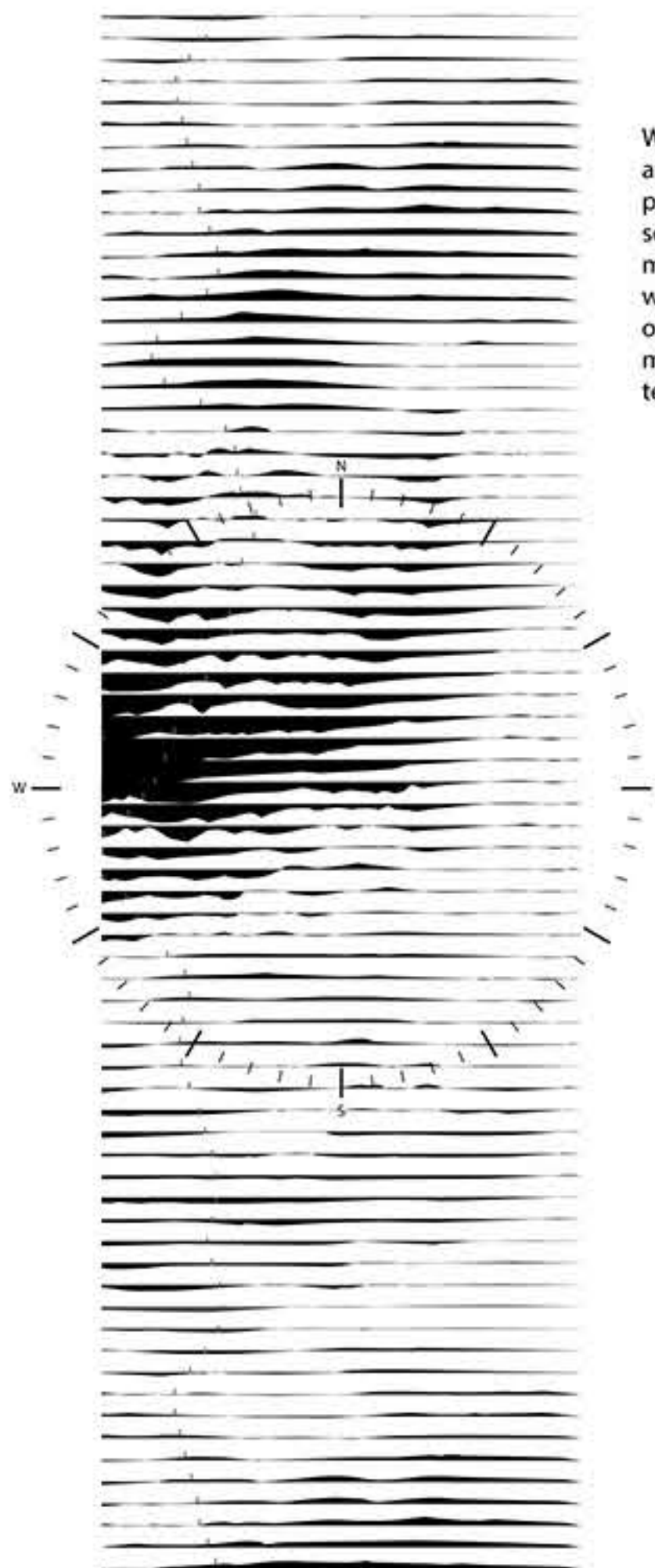
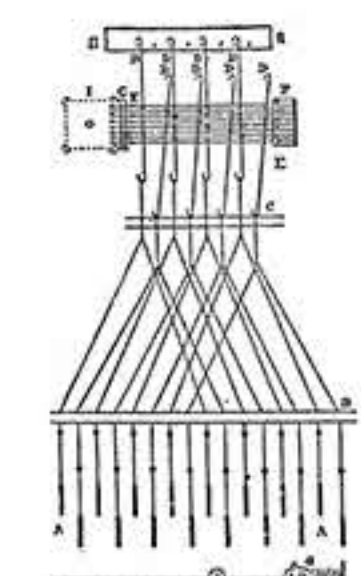
Route surveyors found 4 entrances to the pettah, each leading to a center that they described as an intersection of main roads or a chowk. Folklore however, would turn this view around portraying this center not as an intersection but a starting point, the site of an event that began the settlement of Bengaluru.

The route surveyor's plan of Bangalore was a recording of an event as much as a space. It shows the breaching of the fort from the pettah on 21st March 1791.

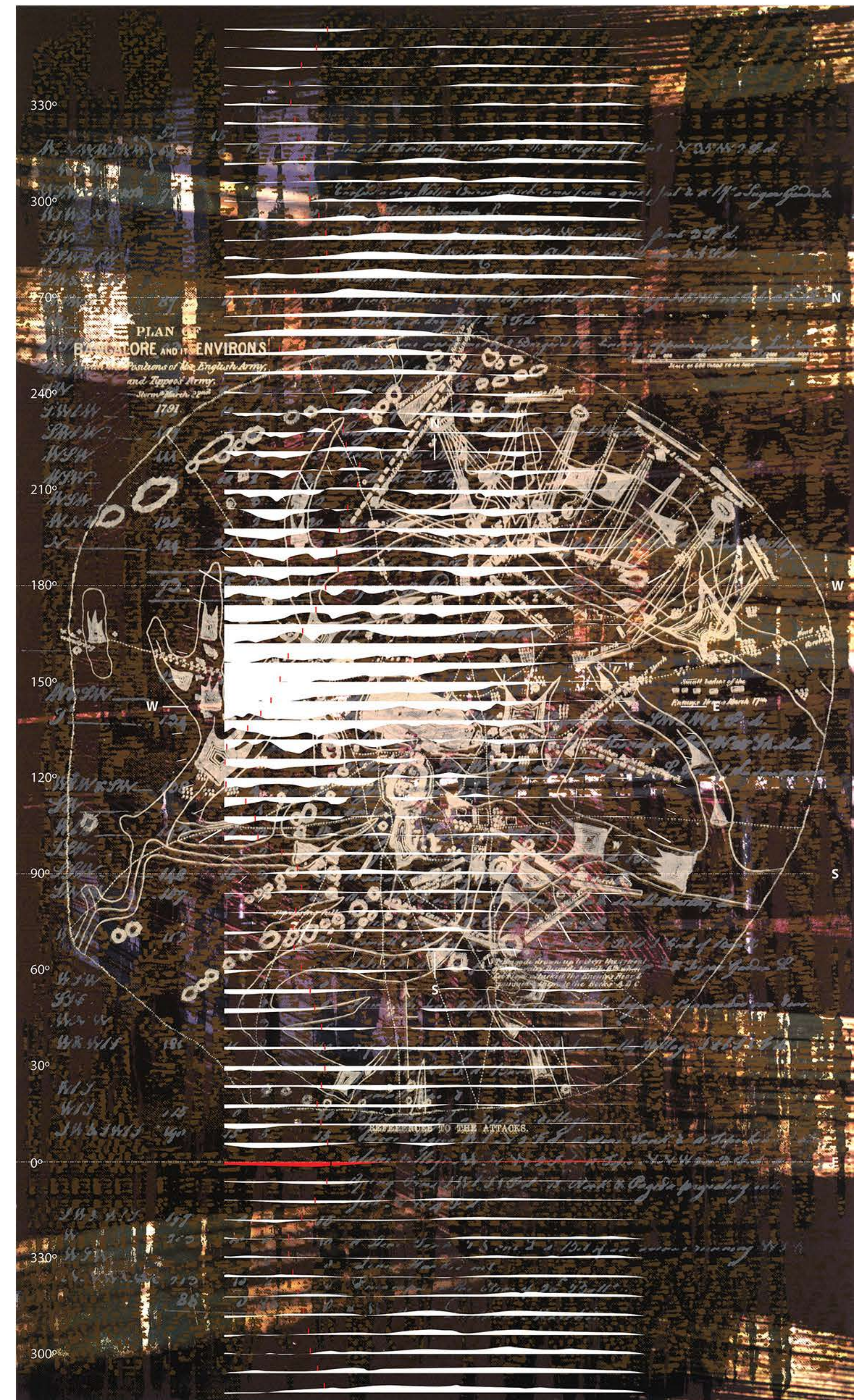


Robert Home's drawing of the gate through which the Company Army broke into the pettah. "The point of attack was a gateway of considerable strength on the north face... The first barrier was soon carried... but whilst the field pieces played on the inner gate, without effect, as it was barricaded with stones, a brick fire from a mud bastion, from turrets, and from roofs of houses, made considerable slaughter amongst the Europeans. It was here that the gallant Moorhouse fell."

Some streets of the pettah today work to the rhythms of the Jacquard loom and its successors. These looms, programmed by a slot card are forerunners of the computer. The sounds of their shuttles emerge from behind veils of secrecy that mark the competition of the silk industry.



While Kempegowda I seeded Bengaluru at an auspicious moment, his son, Kempegowda II, pointed the organism that grew from this seed further across the tableland to rises marked by 'watchtowers.' Four of these watchtowers exist today, signifying the limits of his horizon; but there were perhaps many more on the high points of the undulating terrain stretching out all around him.







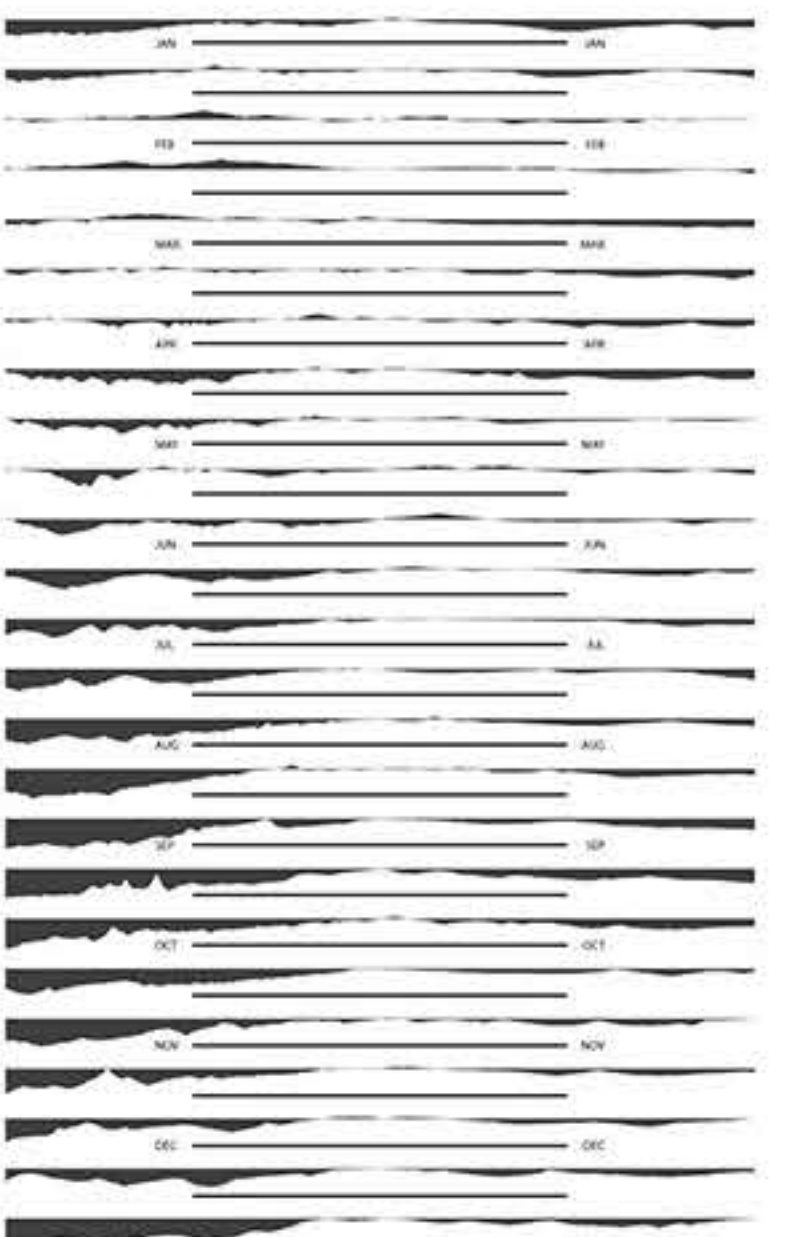
# ESPLANADE

In 1799 the Company army returned to the tableland. This war was brief, perhaps because the land was 'known'. "For the purposes of the rapid advance on Seringapatam, the surveys already collected were sufficient."

Following this war, the tableland was placed in the hands of the Wodeyars, all except a few places that were tenured by the Company. Bangalore was not one of them, the buildings being inadequate. But the Company located a 'tented station' here "if it be only to preserve tranquility in the adjacent districts." In 1807, confident of the peace, the Company decided to centralize troops on the tableland. Bangalore, deemed 'additionally salubrious', was chosen for the purpose.

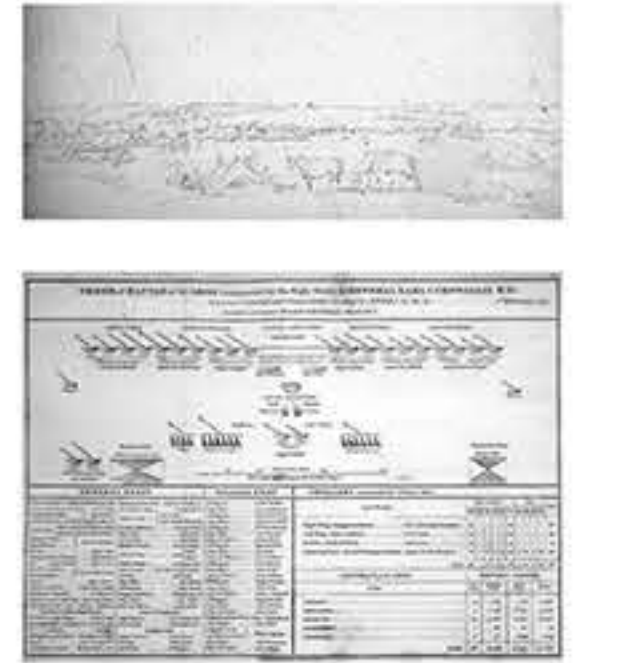
Lt. John Blakiston designed the new cantonment a few kilometers east of the pettah. To him it was a longer lasting camp organized around an esplanade, a leveled perfection of the Mysore tableland. More than a mile long it was noted for "brilliant maneuverings," "angry artillery, practicing its thunders on mock mud forts," but also bazaars and sport.

Blakiston's camp however fast settled into a town as the 'theatre of war' became a distant backdrop, and the esplanade a 'parade ground'. Two decades later, Blakiston writes, "Since I left the country, [Bangalore] has increased both in size and beauty, and may now be considered one of the largest and finest cantonments in India. The reader will excuse me for indulging in a little garrulity on the subject of this my architectural offspring. I consider myself, in fact, a little Romulus." Even its designer had begun to believe its permanence.



Lt. John Blakiston of the Madras army writes of being "ordered up to Bangalore to fix on a site, and prepare plans, for a new cantonment about to be established there on a large scale." The site he chose was the site of Cornwallis's camp on March 5th 1791. Coming from the east as Cornwallis did, the camp was pitched a moment before the gently undulating terrain transitioned into a more rugged one. The transition divided the camps of the two sides at war in 1791 as it would divide the cantonment from the 'native town' until 1949.

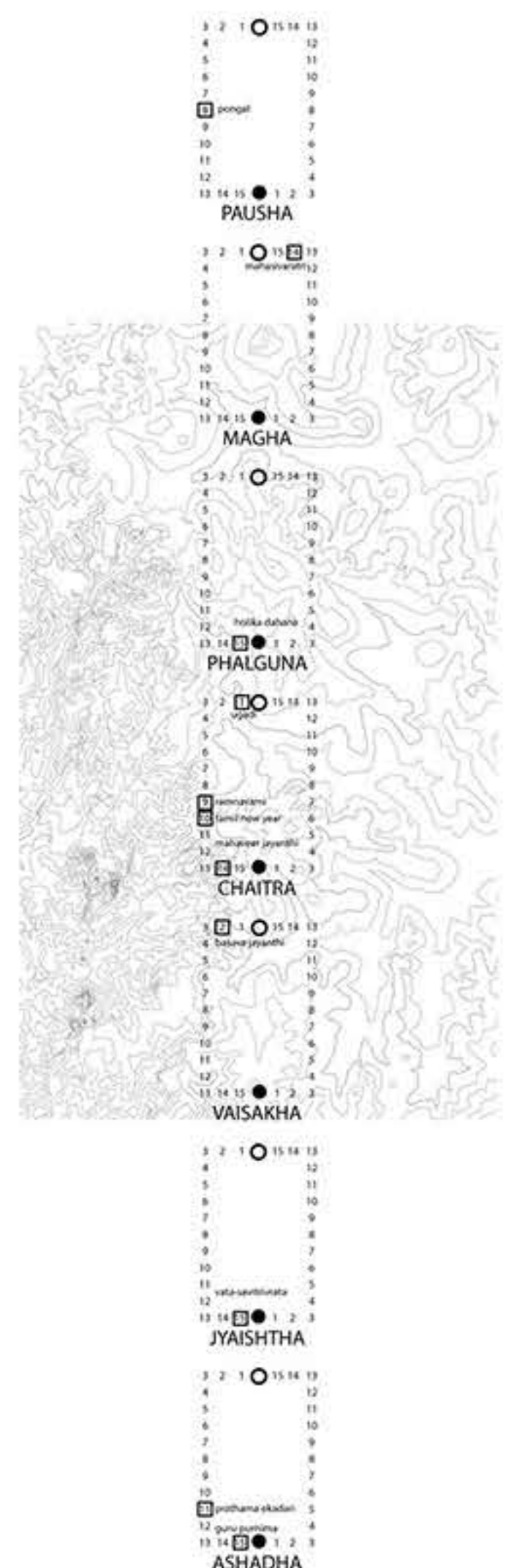
The Danielli's sketch of Cornwallis's army near Bangalore in 1792. It comprised 40,000 men and was four miles long. A camp of 10,000 fighting men, Blakiston observes, had a two mile front and half mile depth. Most of this "parallelogram" was not taken up by the "regular tents of the army" but by "the booths of the bazaar and small tents of the camp followers. Imagine that over this space are scattered bigpeds of all shades... intermingled with quadrupeds of all sizes, from the elephant down to the dog, and you will have a tolerable idea of an Anglo-Indian camp."



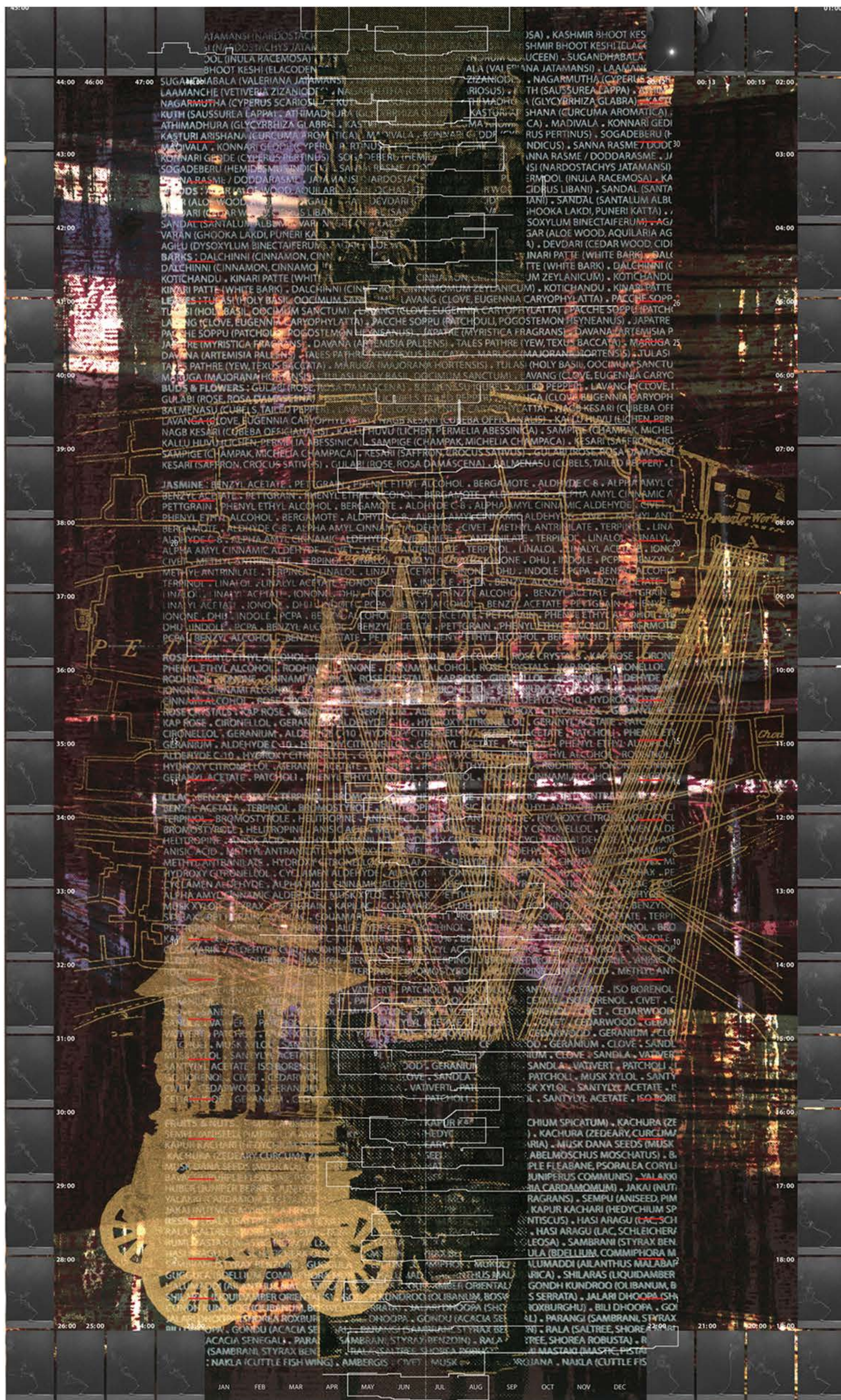
Major Dirom shows the order of battle but also a camp as the army often camped in the form that they fought.



Detail of an 1832 map showing the cantonment initiated by John Blakiston in 1807.



Blakiston's esplanade, the center of the Cantonment, was also the camp's exemplar temporal ground, modulated by events, seasons and rhythms - marches, exercises, bazaars, games, and "public amusements" such as the spearing of tigers. Today with the fencing off of the esplanade into a parade ground, a stadium, a park, a club, etc., the exemplar has shifted to the street. Here traffic weaves through celebrations, entertainment, marches, drying agarbathis, vendors, bazaars.

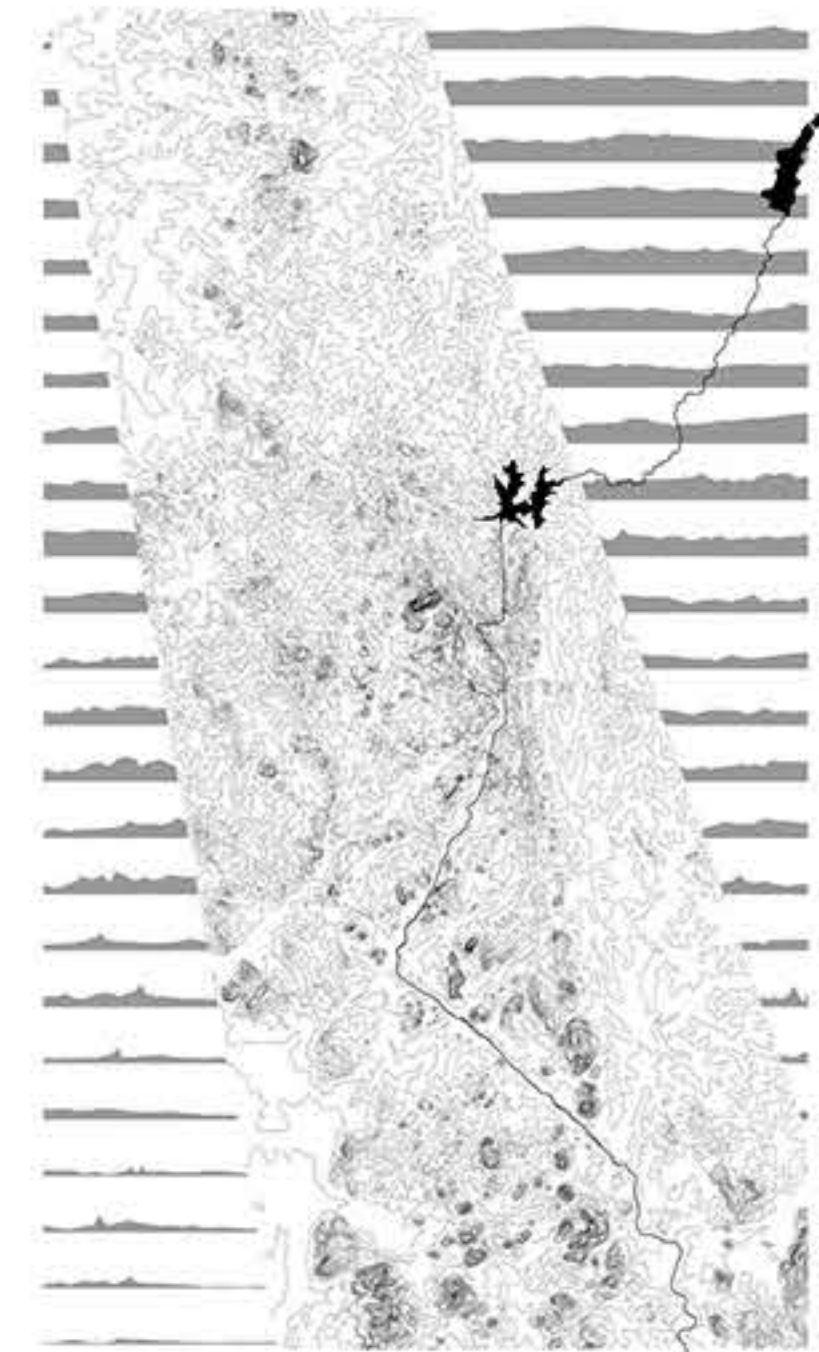






# LAST FRONTIER

From the Eastern Ghats to Bangalore Cornwallis' army marched across a terrain where "valleys are generally broad and open, the gradients of the rivers low, and the whole surface of the country presents the gently undulating aspect characteristic of an ancient land surface." To the west of Bangalore, this surface grows younger. It becomes what Major Dirom in 1791 called a "difficult country, ... full of hills, and very woody." It was "every where broken by deep ravines into rugged precipices." It formed "a strong barrier between Bangalore and Seringapatam," forcing Cornwallis to pause in his advance on Tipu Sultan's capital long enough to make Bangalore a home and for surveyors to map these "wilds."



On the surface, the belt separating Bangalore from Seringapatam is a distinct horizon of hills. The transition beneath is less stark. The magma of this "wild country," geologists say, did not necessarily come from the earth's mantle to fill pockets and fissures later exposed by erosion. It came, they suggest, from the partial melting of rock as two continental plates of gneiss slipped against each other. The result is a transition from gneiss to granite. "All stages in [the] transformation of gneiss to granite can be observed in quarries which abound throughout the belt."

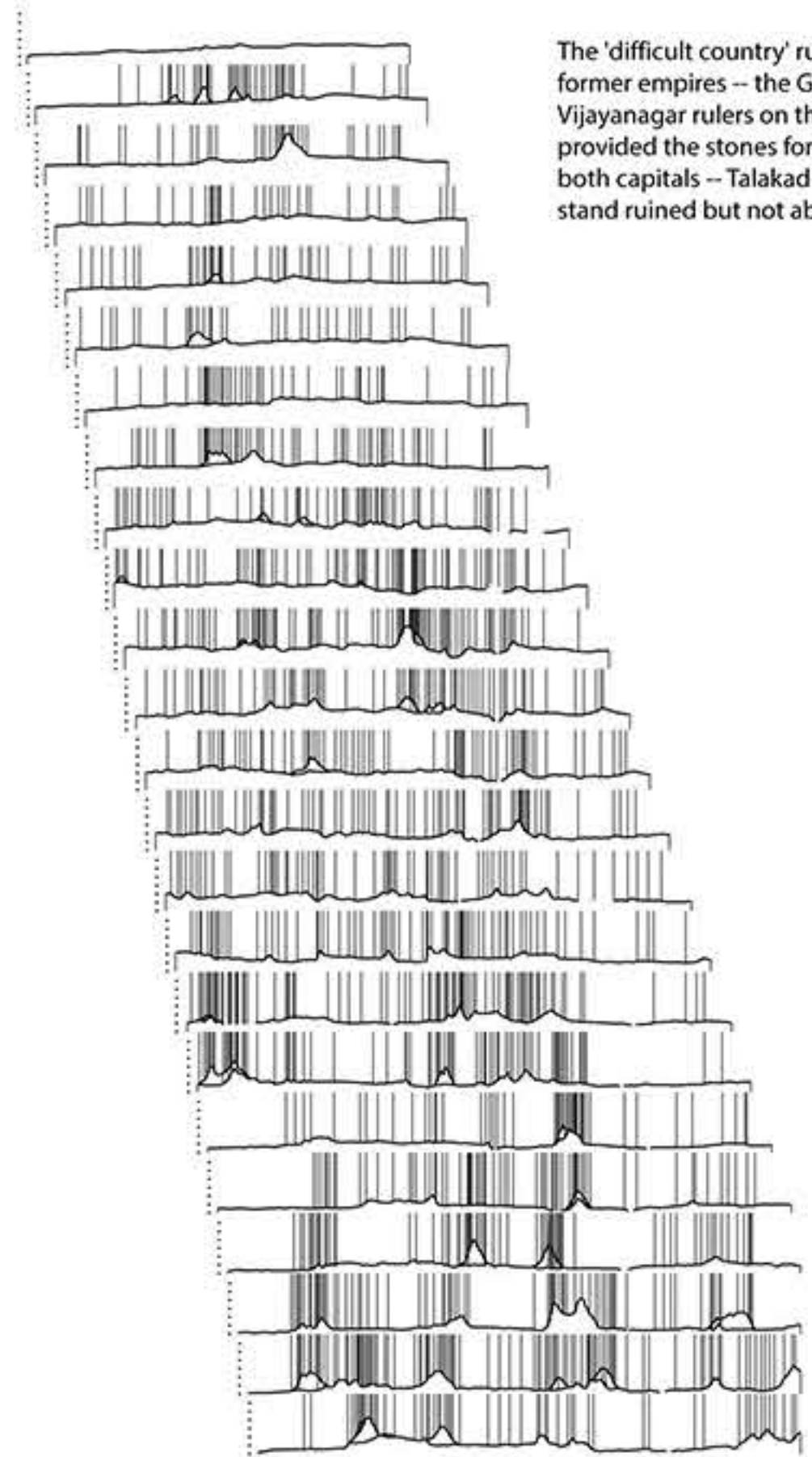
Bruce Foote, considered the father of South Indian geology, noted in the 1890s that the hills in this tract are arranged in a line and not a chain. "The expression line of hills," he explains "is used in preference to the term chain as there is little continuity of high ground, the hills being mostly quite detached and separated in some parts by considerable spaces." Detachment was a quality sought after in appropriating hills for droogs and this tract had a concentration of droogs led by Savandroog, a "fortified mountain" that was "no less famed for its noxious atmosphere, occasioned by the surrounding hills and woods, than for its wonderful size and strength."

By December 1791 this tract was subdued enough for the droogs to become surveyors' prospects and the forest a refuge. Here, on January 25th 1792 "the armies of Earl Cornwallis, Secunder Jaw, and Hury Punt formed one extensive encampment" before leaving for Seringapatam in three columns for the final assault on the island capital.

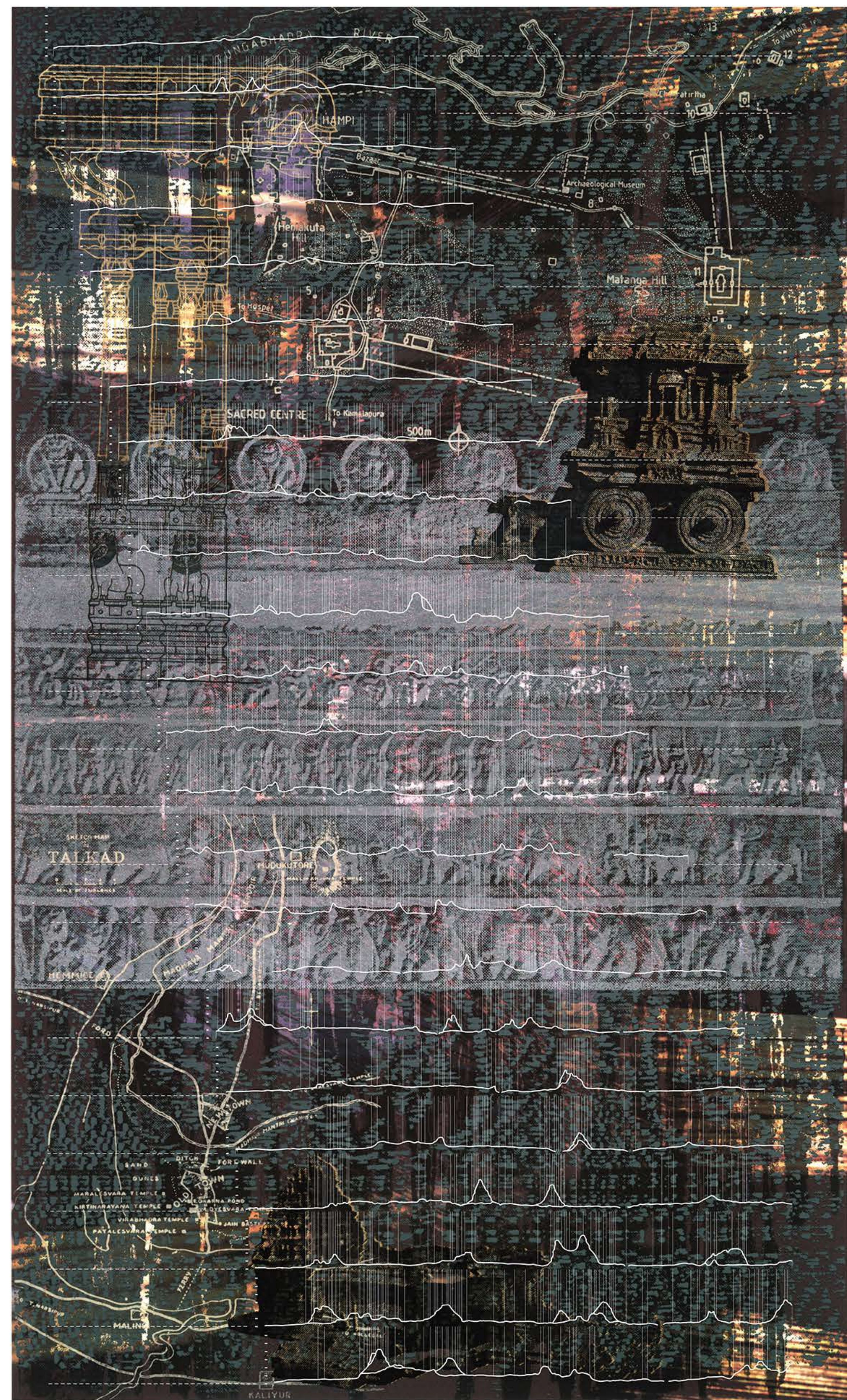
Surveyor Alexander Beaton's 1791 drawing of Savandroog. This "vast mountain of rock" writes Major Dirom, makes hills "low only from the proximity of the huge mass behind them" and "afforded such harbour to the enemy, that there was scarcely a possibility of a convoy passing it unmolested."



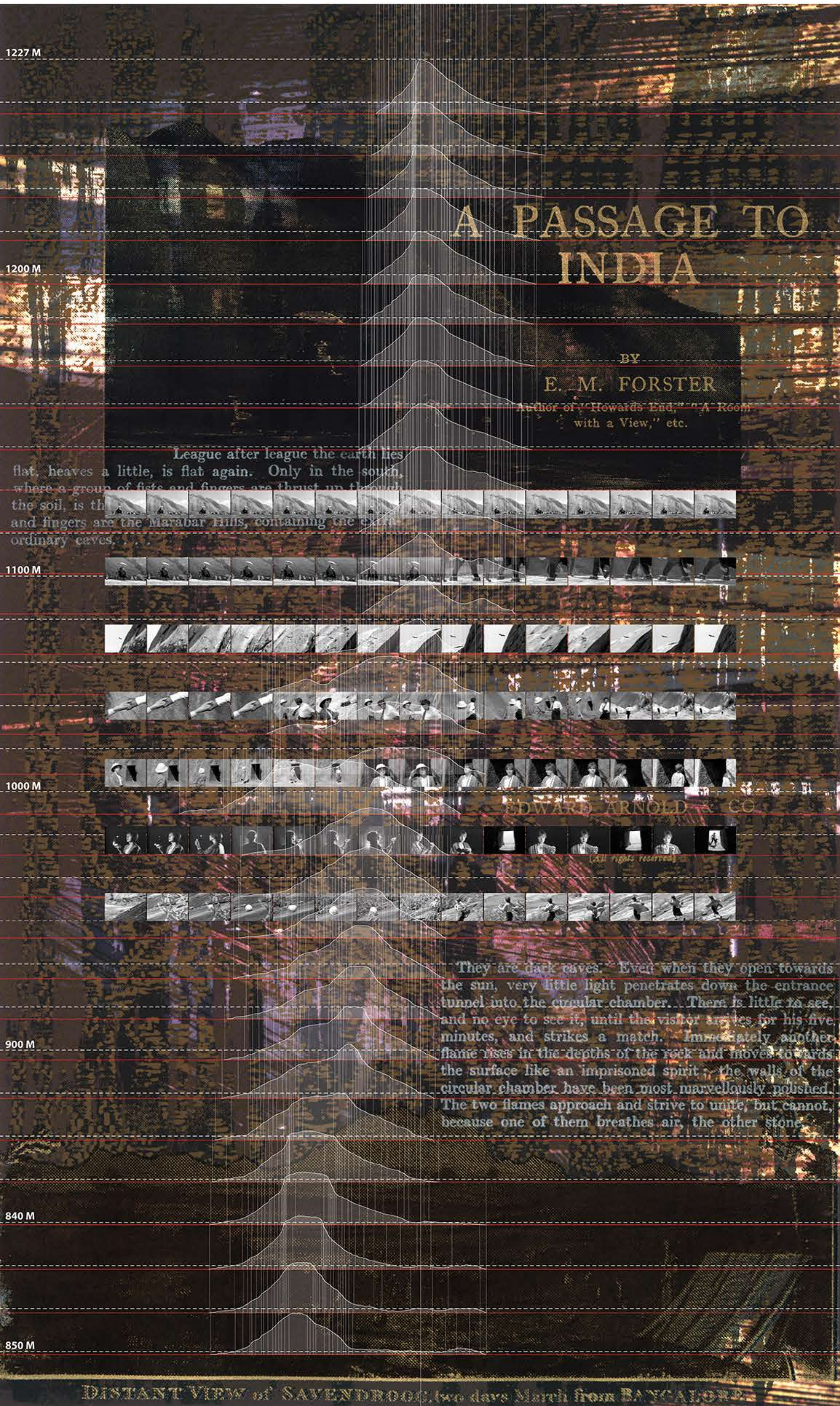
The 'difficult country' runs between the seats of two former empires – the Gangas on the Kaveri and the Vijayanagar rulers on the Tungabhadra. The belt provided the stones for the many monuments of both capitals – Talakad and Hampi – that today stand ruined but not abandoned.



Detail of Major Dirom's 1792 "Map of the Seat of War during the last Campaign in India" indicating the 'wild country' between Bangalore and Seringapatam.





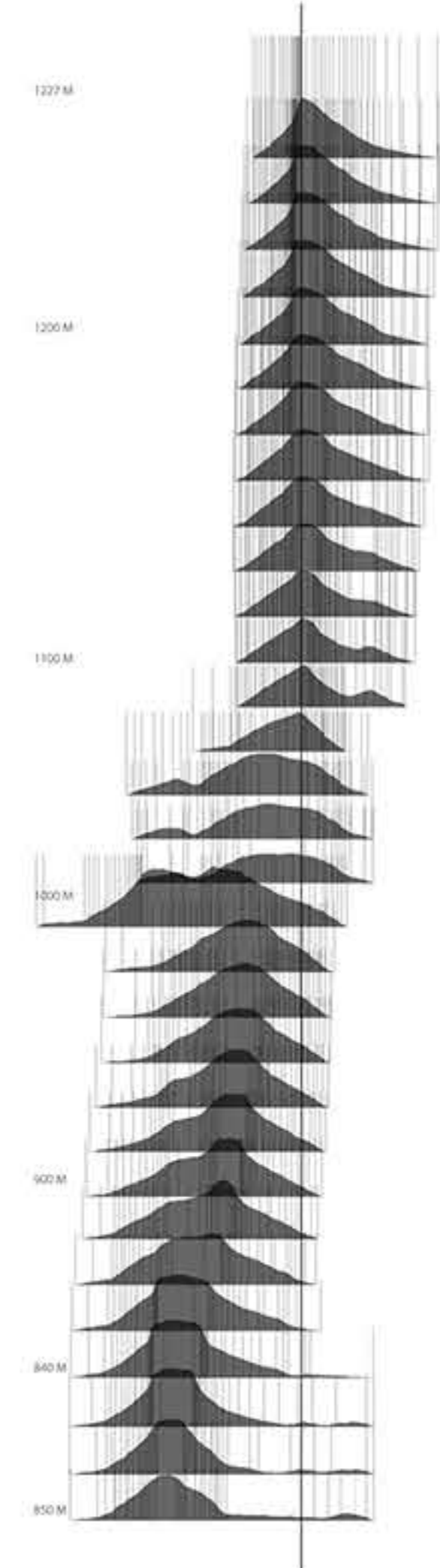


# FIRE

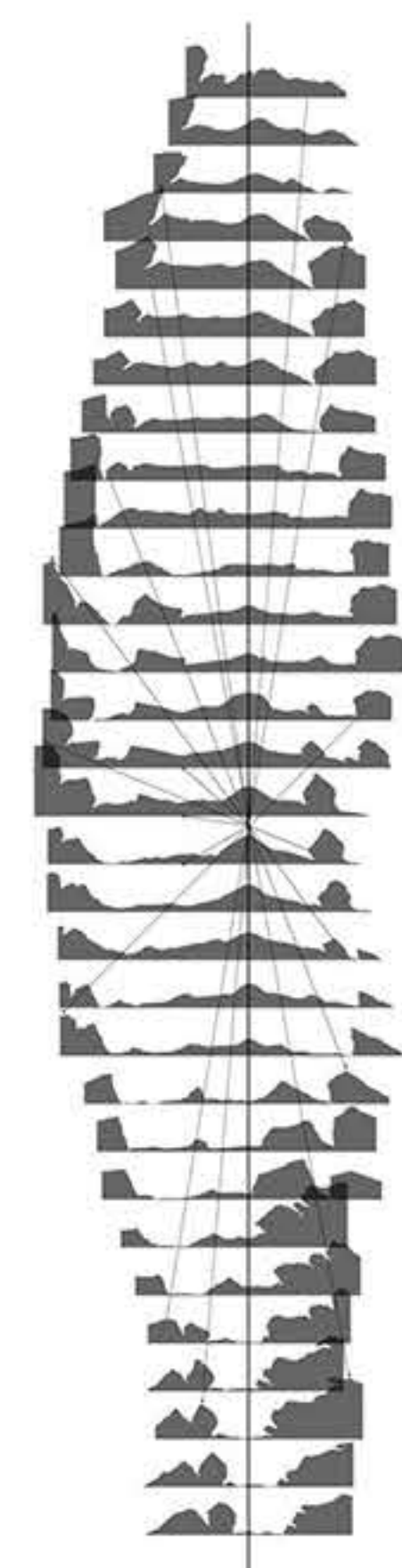
To the west of Bangalore the tableland grows younger in its depth. The 3 billion year old grey-white Peninsula Gneiss that underlies much of the tableland transitions to a 2.5 billion year old pink-porphyrific granite. This younger granite, known as Closepet Granite, is held within a belt that is coterminous with the 'wilds' that came between the English and the Mysoreans in 1791. The many droogs here are "prodigious outbursts" of this rock that geologists say was once a fiery line of magma that cooled slowly enough for its minerals to form crystals visible to the naked eye (hence the name igneous).

The metamorphic rock or gneiss that extends on either side of this igneous belt is amongst the oldest rocks on earth and for that reason declared a national monument by the Geological Survey of India in 1975. But it is the granite of the Closepet belt that is more coveted for stone. "At a small temple," writes Francis Buchanan in 1800, "I observed, for the first time, the rock of red granite. It is a handsome variety, consisting of bright red feldspar, a small quantity of glassy quartz, and a very minute proportion of black mica. I had before seen many detached masses of it in buildings; so that it is probably common in the country. It is a most elegant stone."

Today, the Closepet belt is a source of 'ornamental stone' in contrast to the 'ordinary stone' quarried from the monumental gneiss terranes on either side. The latter is used for compound walls, sidewalks, drains, foundations, roofs, etc. The former is exclusive; used in fine buildings, sculptures and 'polished' surfaces.



"Lord Cornwallis thinks himself fortunate, almost beyond example," wrote a soldier in December of 1791, "in having acquired, by assault, a fortress of so much strength and reputation ... as Savendroog, without having to regret the loss of a single soldier on the occasion. He can only attribute the pusillanimity of the enemy, yesterday, to their astonishment, at seeing the good order, and determined countenance, with which the troops who were employed in the assault entered the breach, and ascended precipices that have hitherto been considered in this country as inaccessible." Two centuries later this droog would provide film director David Lean with the material grandness and firmness that would magnify the darkness and uncertainty of the Marabar Caves in his rendition of E.M. Forster's A Passage to India.



In 1977 the igneous belt to the west of Bangalore would become familiar to millions as the domain of the dacoit, Gabbar Singh, in the blockbuster Sholay. Gabbar's den within the plutons of granite circled by lookouts on rocks brings out the two sides of the igneous belt encountered by route surveyors in 1791 - refuge and prospect; the low rock at the center on which Gabbar Singh is in command and the high rocks on the periphery from which his men maintained lookouts.



Robert Home's "North View of Ramgarie," the droog that gives its name to the town of Ramnagar and the village of Ramgarh in Sholay.



Home's "Distant View of Savendroog from the North."



Home's "Distant View of Savendroog from the North."

