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An Introduction on Architectural Greatness of Thiagarajar College of engineering: Madurai

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Abstract
Thiagarajar College of Engineering is one of the best and oldest colleges in Tamilnadu. It is situated on the slope of Thiruparankundram hill in Madurai. The hilly region itself granted the unique ambience with its natural elements thus the college functioning through woods, rocks etc. Any building if stone built; impacts highly and portraying historical and traditional values. Therefore, the hill and woody ambience and the buildings like historical monuments with a perfect ground plan, imposed out on the sloping ground, resembles the atmosphere of Ajanta and Ellora caves. Kind of this perfect composition rendered within nature that sustains the quality ever that was what the founder expected.

Keywords: Kalaithanthai, Thiagarajar, Banyan tree, Stone buildings, Round pillars, Balustrades

1. Introduction
In Tamilnadu we have numerous colleges and most of them are new ones. Also, some of them being age wise old however, a college specifically not only by age but being with historical values in all aspects, which is obviously the Thiagarajar College of Engineering of Madurai. It was established in 1957. In those days it was the earliest one in Tamilnadu even former than Anna University. The college as said above has historical greatness; it produced great personalities like the ISRO scientist Sivathanu pillai, Meerah Rajavel -Senior Director, IT Solution Delivery & Cloud Services and Srinivasan Thiagarajan - Assistant Vice President at Cognizant Technology Solutions and with some others as alumni.

2. The Founder and successors
Thiagarajar college of Engineering was found by Karumuttu Thiagarajar Chettiar (16 - 06 - 1893 – 29 - 07 - 1974), who was a great man of activity, a well-known educationist and Philanthropist. Beyond this, he was an ardent lover of music, literature, art and architecture. The epithet name was awarded to him as 'Kalaithanthai' means the 'Father of art' is materially evidenced as his living sources are; houses, mills, education institutions etc. Those all were obviously influenced strongly with art. The perspective of Karumuttu Thiagarajar on education had been highly to serve the weaker sections of society. He was minded on the tie up between Institutions and Industries to have practical ground in the subject to the students to get employments. This is still continued by his successors' as of the employability along with academic excellence is the focal point of the institution.[1] The Institution after Chettiar was succeeded by his dedicated wife Thirumathi Radha Thiagarajan. Radha madam did not differ from her mentor-husband, continued the footsteps of the latter. She was much fond of Tamil, learned perfectly under tutelage, and has done a research on Thiruvacagam a saivite anthology. The research is in Tamil, and was inspired from Evelyn Underhill's Mysticism; in that book the author classified the transitional experience of the saints in five steps. These five steps stood as hypothesis to her PhD thesis and applied them on the hymns of Manickavacagar that known as 'Tiruvacagam'. [2] The thesis in fact realizes her lonely being after Chettiar; fully devoted her life to children, duty and god. These schedules probably lead herself towards Thiruvacagam. Exactly at the ninth year after Chettiar, she was awarded with PhD in 1983. [3] She spoke very perfectly on mysticism that she pronounced in Tamil as '*Aruliyal*' (அருளியல்), the illuminative way which she experienced that found through her words. [4] She was much impressed with Underhill's analysis and took it as a tool to realize the illuminative experience of Manickavacagar. The nature of us; who stand around the conductor as a member of a choir. But we do mistakes due to the looks on external thing, since, the tune could be missed. Again, we have to put us to the choir to the oneness [5] which the same that found in Thiruvacagam.
Thiru. Karumuttu Kannan the great successor and a great son of the great parent he who took the charge to govern the industrial and institution responsibilities. Under his captainship much enormous steps have been taken to improvise the quality of education. Also he is an able person and great man of knowledge as Rajendra Chola I to Rajaraja I. The budding Young leader Mr. Hari Thiagarajan who is the son of Karumuttu Kannan and Mrs. Uma Kannan and a grandson of Kalaithanthai Thiagarajar Chettiar and Mrs. Radha Thiagarajan also a charming person known more and learning tirelessly on unknowns, such a seeking discipline pre casting about his future exploration.

3. The Rare Location of the College
As mentioned above the buildings reflect the art and rhythmic nature of the neighbourly hills of Thiruparankundram. In fact the campus was set at the versant part of the hillock, since naturally induced to design the place accordingly. Such a typical planning structurally rendered between the wood and rocks creates certain visual harmony. The ground of the campus seems with up and down, not flatten out purposively to avoid the loss of its natural beauty. This is a perfect decision taken even that much of year before, because, not any architectural academic courses then based to think so, avail as of now is amazing obviously.

3.1 Ground levels

We can classify the campus's ground levels that spread with 143 acres in three kinds. The first one is: it is a level exactly a continuous versant part of the hill further goes to disperse at ground. Thereof, this part is natured with scattered rocks those stood vertically and embedded with free lying stones. This is the topmost area to the entire campus having considerable altitude. The second is: the plateau portion where here the main structures being composed. It is a continuing part of the slope as being however partially slope and flat. The partially slope portion and its ground-nature echo in the structures especially in the main library building. Its Western end is being short while the East looks raised. This is easily sensible one, as an example; that how the natural ground level has been used as it was. The third one is: The lower area continues from the mid portion of tableland disperse gradually with usual land. Here we can see some buildings especially of computer science block and canteen section. Mention is must on the playground situated at lower area in two levels opposite of main library is chancing to sense the level variation. Due to this lower situation its banks are being used as stadium's audience open pavilion.

3.2 The Floras

The other distinctive feature is by the floras which naturally are being part as default but disciplined in certain manner. However, the artificially set landscapes rendered here and there but naturally grown trees and plants stood and determine the aesthetics of the whole ambience. The important among are the Banyan trees that even some of them senior than the main building, elevates the atmosphere as the domain of bodhi. Ariel roots (விழுதுகள்) of them found here and there gently touch our heads, while we walk in to, or suppose, if they hang little above, we chanced to touch them with gentle jump even we in our middle age, at least couple of times. The domination of the King of the trees that is the banyan, by their physical dense, however, the other rare species also found in our campus, those provided with name labels.

3.3 The Faunas

The hilly region grants the faunas as with simple animals and birds such as monkeys, peacocks and sometimes with rare birds. The frequent peacock-cries and their casual visits even in interior areas additions the scenario colour fully and makes them seem as, mobile colour libraries.

4. Architectural features

We can understand the architectural features in three phases of works.

- **Phase I (1957):** All the stone buildings: Admin Block (Main Block), Civil, EEE, Mechanical and Boys hostel (ABCD) Blocks.
- **Phase II (1984–95):** B Block, CSE Block, KM Auditorium; Centenary Library, Guest House,
- **Phase III (2000-2011):** B Arch block, IT Block and Science Block.

The main building belongs to early phase that reflects the continuity of its own region and to the continuation of the post crownism. Yes, it has been a new version in its origin days. Indeed, it is a college situated especially in Pandiyan Capital. Madurai itself has unique historical, cultural, and literary values. Therefore, the care on the region minded finely thus the design of the campus composed with almost traditional style with the fusion of modern styles. The material uses show the continuity of the golden tradition because; the walls of the main building were dealt in granite stone blocks. The same aged other buildings echoing the same pattern, those all situated behind the main building. Therefore, the building built in stone with the modern bonding materials as cement. The concrete medium composed with gravel, sand, cement and water stood secondly to shape the building entirely. The main building and the continuing KM auditorium immediately behind to it in perpendicular; further the building of civil department and EEE department buildings all are almost in flat or plateau land. Here a mention need that on the KM Auditorium was not built up to 1984, however the corridors been served as path to the back stood buildings.

4.1 The building in slope

The Mechanical Department's main building mentioned early is a continued one to EEE building but situated back in slope area. Since, its western part's ground floor is treated as base that having just 3'6.5" height while its eastern end is 12'1" high which has the ground floor with two labs (See figure). The rest of the diminishing wall is segmented with big and small false windows. The first floor of it is with perfect measures used fully for administration, labs etc. This is interesting one as the same we have another building that mentioned prior is the main library building.

4.2 The parts of the main building

As of the South Indian tradition especially of Tamilnadu the vimana of the temple defined commonly with six parts which is called as '*ஆறவைய விமானம்*' in Tamil and '*shadanga vimana'* in Sanskrit. Thus: 1. *Adiyam / adhishthana, 2. Suvar / pithi, 3. Kapotam / kapota, 4. Kazuththu / Grivam, 5. Thalai / sikaram 6. kalasam / Stubi* are those elements. These are known in English as: base, wall, entablature, dome's neck, dome and finial respectively. In fact, the same traditional structural disciplines here too followed to keep the disciplinal structure. The ceiling is here taller than usual buildings to let the high volume of light and air.

4.3 The anatomy of the main building

The main building is a long rectangular one with considerable width. It is a four storey building. However, the top floor is a small one functioning centrally at the top, which upon the dome has been erected. The building has punctured at its centre for main entrance which leads to an atrium, where the goddess Saraswathi's bronze sculpture situated on the stone pedestal. This atrium has a flight of steps to the top floors in its eastern side. The first set of steps neutrally having a flat space over on the founder's black and white full size portrait being displayed. From there the steps bifurcated up and down respectively.

The main building is facing north. Its central entrance, having flanking portions spreads accordingly. The whole building except the ceilings has been built in stone blocks giving durability. The round pillars are probably primary pillars to the structures and casted sort keeps the uniformity. They were set in specific places. Since, we have another pillar in rectangular type. Its beauty is indeed its proportion, is finely treated in thin and thick manner in low ratio. Their base and capitals have been perfectly designed as with *vriḍha*

kumudham (ring like pedestal) and *eṇpaṭṭai pātham* (octagonal pedestal). The top capital is gently designed with square *palakai* to hold the *prastharam*, the entablature. The *kapotam* (eaves) is a special one that absolutely replicates the traditional architecture's *kapotam* and particularly without any fusion of motifs. The plain look enhances its longish being and having high protruding *kapotam* accordingly.

4.4 Measurements of the Main Building [6]

Table 1

Length	Width	Height - Base to Stubi	Pillars Height	Floors	Corridor width	Ceiling height	Window size	Door size	Class room size Vary in sizes
432'7''	54'0.75"	97'	11'7.3"	G + 3	10'5"	14'1"	7'8.5" x 5'1"	10'5" x 5'1"	9.4m x 5.9m 9.50m x 9.0m*

* There are few kind of sizes followed to class rooms accordingly.

Besides, the civil department block a continuation to the main block by KM auditorium is in 320'4" x 53'9.25" size and the department of EEE is with 233'9"x 51'9" size. However, the EEE building is not a continuation to the Civil block being set little forward, therefore, one of the accesses to it falls at western corridor of the KM auditorium. The Mechanical department is situated in west ward thus being in slope area. It is the exact building that shows its belonging to hilly region and sized with 210'3" x 53'10". The embedded rocks rose in considerable height in this area for example; one among in front of Mechanical and Mechatronics building being used as a natural bench to the students, really unparallel one. Also, the other stone buildings belongs to the same age are the labs, workshops etc.

4.5 Pillars

The Pillars on each side have set with 18 numbers between the regular gaps of 8'7.5". They are slenderish and nearly 12 feet high creates a vertical harmony to the much longer horizontal massive structure. In all three floors the round pillars rhythmically echoes. These round pillars were treated as primary pillars, since, found in frontal area; while the building also if provided with corridors in back sides; where the secondary pillars that is the square like stone pillars have been used.

4.6 Precise – Parapets

The one more distinctive identity is the parapets that create the universality to the whole campus, even found in the modern buildings. The one and only of starry radius design is the highlight and one more brand-mark to TCE. The parapets are handled in different sizes according to the size of the places. They seem mostly with horizontal-rectangular. Verticals also took place. Some tiny balustrades to fill the short areas have also been used. The slanted parapets with same design are finely set in staircases. Besides, couple of parapets very brilliantly treated in curvy style at their one ends; in a welcoming manner, found in main library building's staircase. Moreover, the slanted parapets found at the staircases are interesting ones. The parapets set in main building particularly in top floors are with the size of 7'1.4" x 3'. Its design is minded on both design itself and function of it. The rhythmic patterns echo everywhere of the campus strikes the high values indeed. The parapets are the jewels to the buildings wore as embroidery like ornamentation with precision.

4.7 The Kiosk

The kiosk that is the one man security booth, in front of the main building is a fine example to the whole uniformity, designed with octagonal ground plane. The west facing facet is treated as open for entry, while the rest of the seven vertical faceted walls are treated with the brand of TCE balustrades. This is very skillfully handled for transparency to guarding sharply. The feature further to it is its dome which is raised pyramid like and ended with kalasam.

4.8 Colour scheme of the main building

The main buildings keep the original textures of the stone blocks since they have natured the grayish-yellow ochre tone majorly. However, the central portion of the facade also in stone, but, evenly made without texture and being painted with pale pink colour. The parapets especially found at this portion painted with terracotta colour. Further, the seven stepped staircase is dealt with black granite is based on something logically according to me. Perhaps, the seven stood for his birth date that commence on June 16; since the total is 7. Not only that his full date of birth is: 16. 6. 1893. Since the total of this is also 7. Besides, couple of black pillars flanking the entrance stood front and back wise, also, they are in granite, which has to be mentioned. However, in first floor they are set in single on each side. Moreover, the vertically treated ventilatory patches that elevate the facade's beauty; gives note on the horizontal vs. Vertical composition of the building.

TCE is the third oldest among the Engineering colleges of Tamilnadu. PSG (1951) of Coimbatore and Alagappa Chettiar Engineering College (1952) of Karaikkudi were the just formers. However, TCE is natured with traditional belong by its location and architecture wise. PSG's main building shows the influence of mogul architecture especially with couple of minarets; while the Karaikudi Alagappa Engineering College shows the museum like facade. The TCE is with unique style reflects the style of regional art and architecture. The care on the verticals that keenly followed, even rendering of the trees in front of the main building with ashoka (saraca asoca) trees, really dictates the artistic knowledge of the founder.

Phase I: As mentioned previously we have the other buildings built in contemporary materials as with usual bricks and cements that are the science and computer science blocks. These buildings too reflect the main building's architectural scheme as with round pillars and the ornamental parapets.

Phase II: Also as mentioned previously the third phase of buildings too reflects the main scheme's features though they

have been built in modern materials. For example, the building of Architecture department also reflects the pillar and parapets similarity.

5. Vasthu compatibility

The architectural science of vasthu has also played a major role that is evidently traceable here. For example, the all main buildings' are facing north is based on vasthu sastras orientation principle. As the same, the main building's North-east and South-east corners have been provided with staircases. Also, the North-east corner has been provided with drinking water facility. These show the vasthu sastra's principles here worked out to a certain degree. The oral tradition of the campus says about the *Easana moolai* (ஈசான மூலை) of the Mechanical building that of the North east corner which is fully closed but kept with god idols or related to something holly elements. There is lot of things are lying to study that how the vasthu principles have been followed in these academic structures. Mention must on a book which was written by the Chairman Thiru. Karumuttu Kannan that explains the orientation disciplines of buildings.

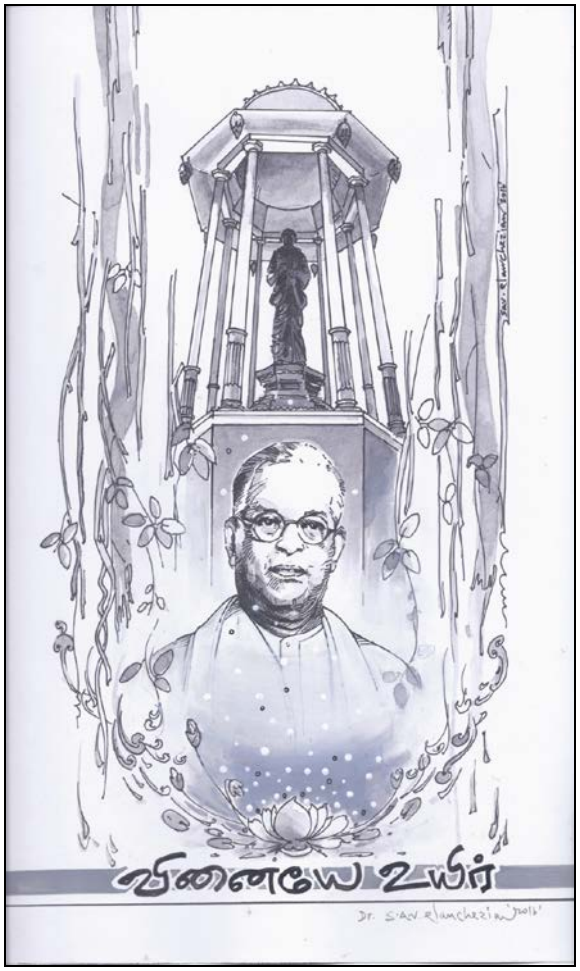

Fig 1: Kalaithanthai Karumuttu Thiagarajar Chettiar (Art work is done by author himself)

Fig 2: Main Building of Thiagarajar College of Engineering – Madurai

Fig 3: Perspective View of Main building

Fig 4: The Parapet or Balustrade

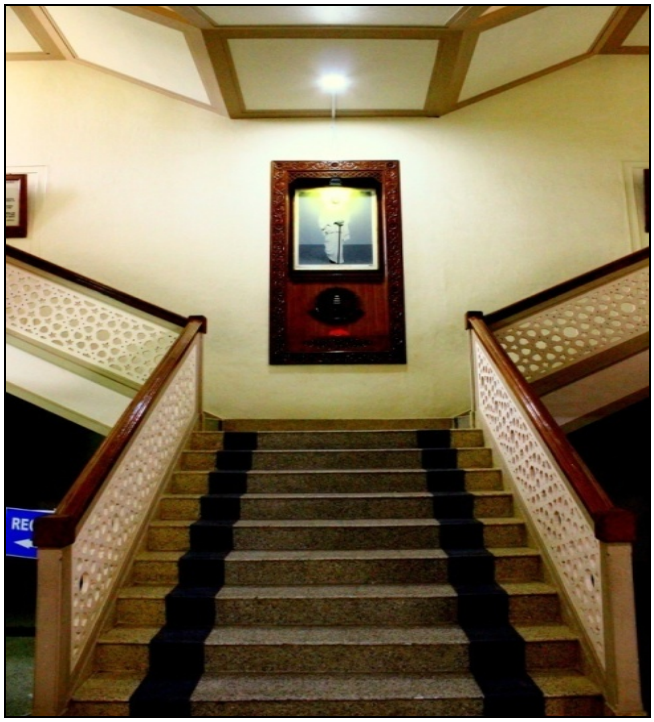

Fig 5: The Slanting Parapets

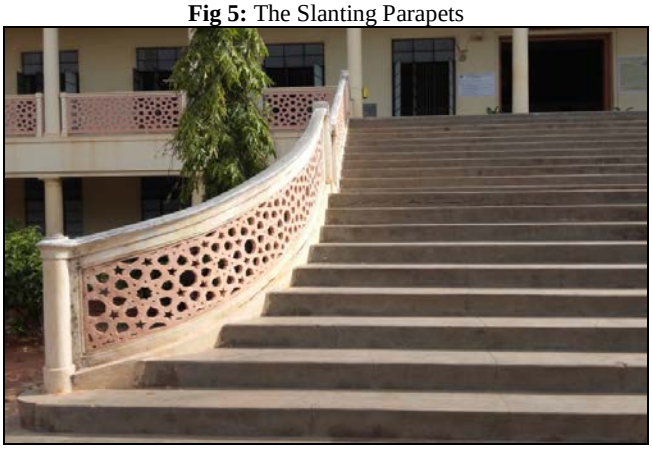

Fig 6: Curvy Parapets

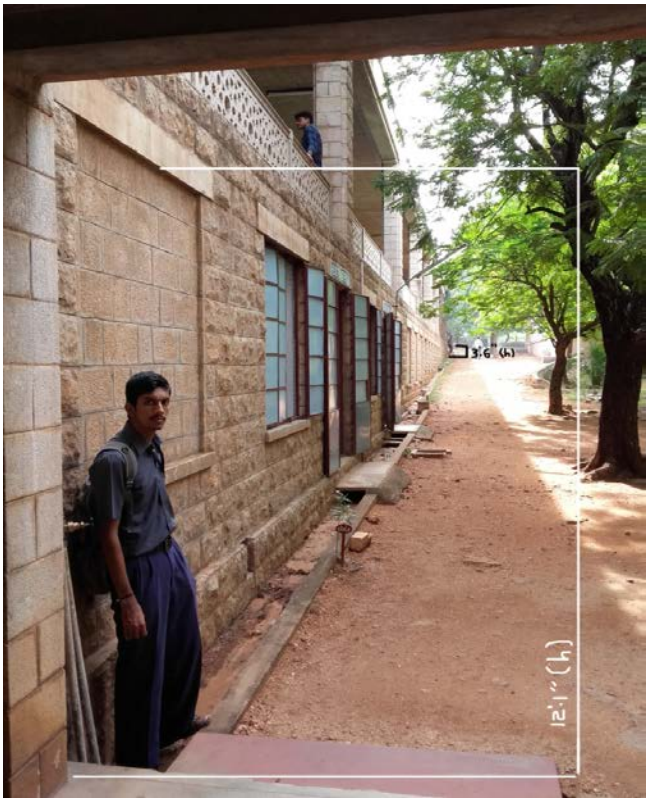

Fig 7: The Mechanical Depatment shows the block's slope-nature (If you zoom this picture the other end again palced with a boy to show how that end is very shorter).

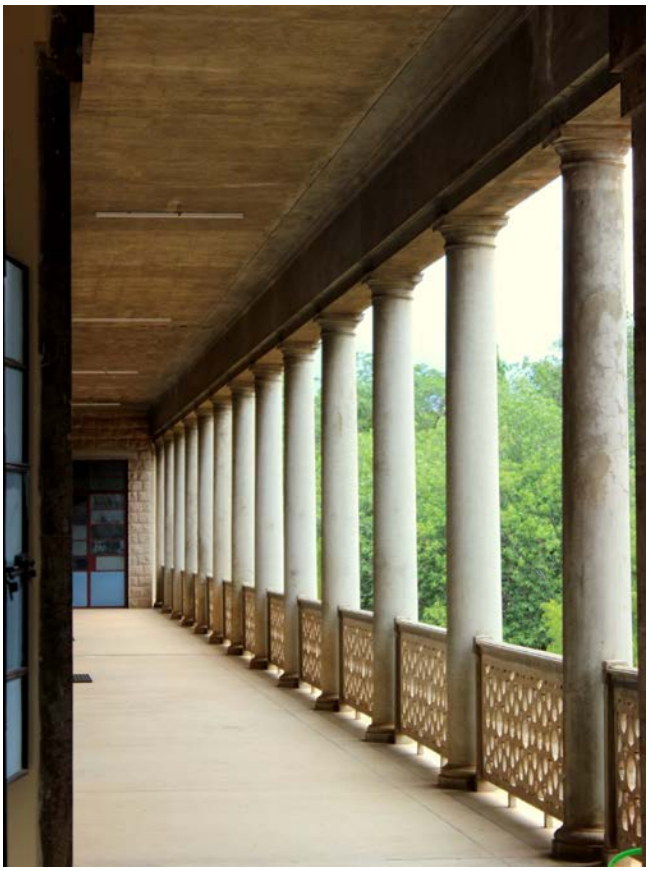

Fig 8: The harmony of Pillar and the Paraptes – Main Building (The photos used are snaped by the author in situ)

6. Conclusion

As said previously, the Thiagarajar college of Engineering initially started with all its stone buildings but those were independent ones. However, the connection between Main block to the back stood Civil block by a raised walking platform with pillars was provided in origin. Later this path was partitioned with KM auditorium thus the path fell and flanked to the new auditorium. The connecting paths made to interconnect the stone buildings, since; every building came to a disciplinal network. Whatever later works added to the traditional stone buildings, the uniformity of design and material were followed carefully. The second and third phases of buildings came out in need of, the modern materials used to construct, however, the uniformity followed to sustain the specific aesthetics with their pillars and balustrades along them. The pillars show the vertical similarity of the aerial prop roots of the Banyan trees while the structure shows the Banyan tree itself. The starry design found in the balustrade shows the replication of the glimpsing spaces between the branches and the leaves of the dense trees.

What we now are surprising about the situation and architectural worth of Thiagarajar College of Engineering, but initially in fact, the site was rejected by the civil engineers due to the slope-nature. Never get tired due to the negative answers, in spite of that, the Chettiar strongly minded on the same site and given shape as what he viewed as premonition. [7] Therefore, the art of nature and the art of manmade are amalgamated harmoniously thus the ambience of the Thiagarajar college is blissful institution indeed.

7. References

1. Uma Kannan, Radha Thiagarajan - Remembered, Thiagarajar College Publication Division, Madurai, 2014, p 64.
2. டாக்டர். திருமதி ராதா தியாகராஜன், "திருவாசகத்தில் அருளியல்", வானதி பதிப்பகம், சென்னை, 1983. ப iii, iv.
3 Radha Thiagarajan Remembered p 40.
4 திருவாசகத்தில் அருளியல், p 150 -194.
5 Evelyn Underhill, Mysticism, A Study in Nature and Development of Spiritual Consciousness, Grand Rapids, Christian Classics Eternal Library, 1911, p 216.
6. The whole measurements are accuracy ones have taken by the author freshly.
7. Dr. (Mrs) Radha Thiagarajan, Karumuttu Thiagaraja Chettiar, The Textile King, Vanathi Pathippakam, Chennai, 2004, p 63.