

Archiving Mathematics as Work

**Possibilities and Challenges in
making an archive for practices**

Senthil Babu
+ everyone in the collective

Collaborative work involves lot of compassionate travel and learning trajectories that proved to be not only mutually beneficial but, created a pathway for critical thinking and collective practice . . .



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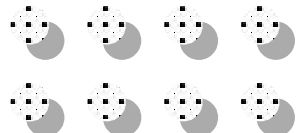
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Guideline

1. **Written** History and Archives
 1. Hegemonic histories
 2. Why the **Program** ?
2. Archives and **Practice**
3. **Doing Public History**
4. Archives as **Vehicles**
5. Archives and modes of **Abstraction**
 1. Text and Abstraction
 2. Orders of Practice and Abstraction
5. Archives as site of **Practice** and **Knowledge**
6. Challenges, Limits, Possibilities



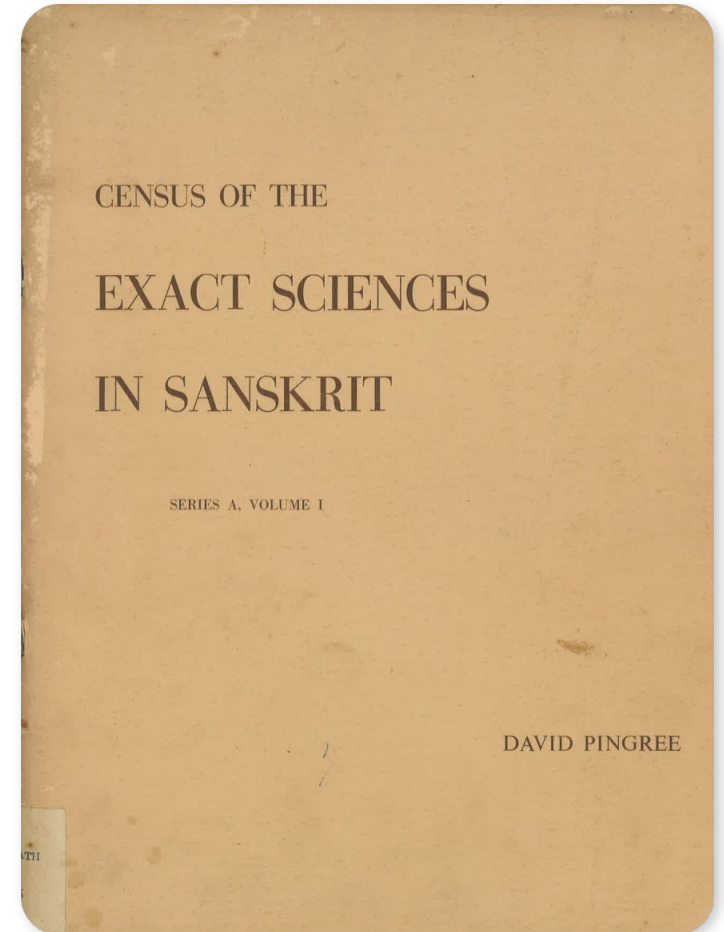
Written history and Archives

Hegemonic History of Math in India based on

- Certain written texts (Sanskrit)
 - Computational Astronomy

David Pingree's census of exact sciences –

catalogue or archive ?



Written history and Archives

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CENSUS OF THE EXACT SCIENCES IN SANSKRIT

Dāmodara Paṇḍita of the Kṛṣṇātrigotra and the Uddeyamalakajñāti.

The last verse is:

āstī pārthapure vasan dvijavaraḥ śṛigopīrājābhīdhab
siddhāntābhīnavodyamaikakuśalo daivajñācūḍāma-
nibh //
tājābh śṛīpatir āgrāṇībh kṛtānidhau siddhāntapāram
gatas
tatsūnur madhusūdanākhyaṅgaṅgākāḥ paitāmāhīm
nirmame //

MADHUSŪDANA

Author of a *Vaiśākhmahātmya* in Oriya. Manuscript:

Bhubaneswar 2.Or.P/1310.

MADHUSŪDANA KĀPILA

Author of a *Vivāhasandehadoṣaśaḍha*. Manuscript:

RORI (Alwar) 2954. 9ff. Incomplete.

*MADHUSŪDANA (fl. ca. 1450-1475)

Additional manuscript of his *Jyotiḥpradīpikūra* (see CESS A 4, 355a-355b):

AS Bengal I.A.56.

MADHUSŪDANA (fl. 1655)

One of the seven sons of Viṭṭhaleśa, the son of Vallabhadrikṣita, Madhusūdana, the pupil of Ātreya Bālakṛṣṇa Bhaṭṭa, the son of Mādhava Bhaṭṭa of the Pañcanada anvaya, and a resident of Gokula on the bank of the Sūryajā, wrote a *Īkā, Bhāvabodhinī*, on the *Sūryasūta* of Mayūra; he completed this on Thursday 13 śuklapakṣa of Māgha in Sam. 1711 = 8 February 1655. Manuscripts:

BORI 23 of 1872/73 = BORI (Kāvya) 478. 55ff. Copied on Friday 9 kṛṣṇapakṣa of Māgha in Sam. 1929, Śaka 1795 = 21 February 1873, from a manuscript copied by Gopāla on Friday 6 śuklapakṣa of Kārttika in <Śaka> 1600 = 11 Octo-

ber 1678.
BORI 24 of 1872/73 = BORI (Kāvya) 479. 33ff. (ff. 1-5 missing). Incomplete.
PL. Buhler II D. 146. 77ff. Property of Caturbhūja Bhaṭṭa of Navānagara.

Verses 4-5 and 7 at the end are:

śṛīmadvallabhadrikṣitāṅgatanuṣaḥ śṛīviṭṭha-
leśaprabhoḥ
saptānāṃ tanujanmanāṃ suktināṃ putrāś ca pautrā
api //
tatputrāś ca tadanājāś ca satatam śṛīkṛṣṇasevārātā
śrautasāmrātyavidhīsthitāḥ kṛtādhiyo rājanti yatanen-
dravat //

śṛīsūryajātaḥbhūvi prathitam prthivyaṃ
tad gokuḷam nagaram asti bṛhadvanāntaḥ //
tadvāsinī vīracitā madhusūdanena
Īkā mayūrasātakasya raviprasādat //5//
gaurīśābhūmidharaśīṭakair mitābde
śṛīvikramārkasamayād iha vartamāne //
māghe sitamaratithau vibudhejyavare
granthaḥ samāptim agamad budhayaṅgya eṣaḥ //7//

The colophon begins: iti śṛīmatpañcanadānvayabhū-
ṣaṇamādhavabhaṭṭatanujanmana ātreyaḥbālakṛṣṇa-
bhaṭṭāpriyaśiṣyasya madhusūdanasya kṛtīr iyam.

MADHUSŪDANA ŚĀSTRIN (fl. 1980)

The former Dean of the Faculty of Oriental Learning at Kāśī Hīndū Vidyavidyālaya in Vārāṇasī. Madhusūdana wrote a Hindi *Īkā, Bālakṛīda*, on the *Vaṅgopāṇḍī* of Rāma Lāla Śāstrin, published as *Kṛṣṇadāsa* SS 5, Vārāṇasī 1980.

*MANASĀRĀMA

Additional information concerning the manuscript of his *Parvasūtra* (see CESS A 4, 356b):

*RORI (Udaipur) 1482. 7ff. Copied by Nandarāma Gūjaragaṇḍa. Incomplete.

*MANASĀRĀMA (fl. 1762/1771)

This author (see CESS A 4, 356b) also wrote a *Prāśārnava* in Śaka 1684 = A.D. 1762. Manuscript:

Mysore ORI C.2687. Fl. 1-7.

CENSUS OF THE EXACT SCIENCES IN SANSKRIT

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The last verse is:

śṛīmadgaṇḍakulodbhavo dvijavaraḥ śṛīrāmākṛṣṇo
'sti tat
putro labdhamatir manopapadakaḥ sārāma ity
āhvayaḥ //
tenāśau racitaḥ padārthaganaḥ prāśārnavaḥ
sūktibhiḥ
padyair bhūpamitair yugāśāntarṇake śāke 'stu
tātīrtaye //

The colophon begins: iti śṛīmadgaṇḍajñātīyārāma-
kṛṣṇātmajapratyaṅgirāprasādalabdhābodbodhamanaśā-
rāmaviracitam.

*MANU

Additional manuscripts of the *Mānavasamhitā* (see CESS A 4, 357a):

Mysore ORI P.734/11. Ff. 24-25. Nandināgarī. (pañ-
camāriṣṭaśānti); P.734/12. F. 25. (viṣa-
nādījananaśānti); and P.734/24. Ff. 45-46. (śāni-
śānti).

Mysore ORI P.1723/10. 6ff. Nandināgarī. (citrā-
nakṣatrajānanāśānti); P.1723/12. Ff. 37-44. (mūlā-
nakṣatrajānanāśānti); and P.1723/13. Ff. 44-46. (śi-
leśānakṣatrajānanāśānti).

Mysore ORI P.3128/21. F. 103. Nandināgarī. (gaṇ-
ḍadoṣajānanāśānti); and P.3128/24. Ff. 107-108. (vāyasapraveśānti).

Mysore ORI P.3804/56. Ff. 98-99. Nandināgarī. (pañcamāriṣṭaśānti).

Mysore ORI P.4180/65. Ff. 119-121. Nandināgarī. (vāyasapraveśānti).

Mysore ORI P.4992/2. Ff. 4-5. Nandināgarī. (citrā-
nakṣatrajānanāśānti); and P.4992/4. Ff. 8-12. (mūlānakṣatrajānanāśānti).

Mysore ORI P.5313/26. Ff. 46-48. Nandināgarī. (vāyasapraveśānti).

Mysore ORI P.5587/21. Ff. 68-69. Nandināgarī. (pañcamāriṣṭaśānti).

Mysore ORI P.5635/6. Ff. 6-7. Grantha. (madhu-
śānti); P.5635/50. F. 43. (viṣanādījananaśānti);
P.5635/74. Ff. 62-63. (citrānakṣatrajānanāśānti);
and P.5635/100. Ff. 108-111. (mūlānakṣatrajāna-
nāśānti).

Mysore ORI 5930/60. Ff. 77-78. Nandināgarī. (navagrahahapṛtidānavidhi); and P.5930/130. Ff. 1-6. (mūlānakṣatrajānanāśānti).

Mysore ORI P.6297/1. Ff. 1-2. Grantha. (śāniśānti).

Mysore ORI P.6820/3. Ff. 5-6. Nandināgarī. (citrā-
nakṣatrajānanāśānti); and P.6820/5. Ff. 9-14.

(mūlānakṣatrajānanāśānti).

Mysore ORI P.7970/123. Ff. 127-128. Nandināgarī. (ugrarathaśānti); P.7970/186. F. 231. (grahapṛtidānavidhi); and P.7970/187. Ff. 231-232. (vardhāpanavidhi).

Mysore ORI P.9167/23. Ff. 27-28. Grantha. (śiṣeśā-
nakṣatrajānanāśānti).

Mysore ORI P.9254/65. F. 52. Nandināgarī. (navagrahahapṛtidānavidhi); and P.9254/131. Ff. 111-112. (vāyasapraveśānti).

Mysore ORI P.9428/140. 1f. Telugu. (ugrarathaśānti; incomplete).

Mysore ORI P.9951/24. F. 21. Nandināgarī. (vardhāpanavidhi).

Mysore ORI P.9965/93. Ff. 107-108. Nandināgarī. (kākamaitunadarāśānti); and P.9965/113. Ff. 128-129. (madhucchatrapiṭikāśānti).

Mysore ORI P.10070/41. F. 42. Nandināgarī. (navagrahahapṛtidānavidhi); and P.10070/71. A. Ff. 87-88. (vāyasapraveśānti).

Mysore ORI P.10265/3. 1f. Nandināgarī. (ugrarathaśānti).

*MANU

See Mānava for the author of the *Mānavasulbaśūtra* (see CESS A 4, 357a).

MANOHARA DAIVAJĀNA

Author of a *Grahavartigrantha*. Manuscript:

RORI (Udaipur) 3463. 46ff. With a sarasāśāraṇyantra.

*MANTREŚVARA

Additional manuscripts of his *Phaladīpikā* (see CESS A 4, 357b-358b):

Mysore ORI *P.3181/1. Ff. 1-35. Grantha. Incomplete (adhyāyas 13-26).

Mysore ORI *P.3503. Ff. 1-32. Grantha. Incomplete (adhyāyas 17-27).

Mysore ORI P.6136/2. Ff. 1-19. Nandināgarī. Incomplete.

Mysore ORI P.9284/2. Ff. 34-37. Nandināgarī. Incomplete.

PrSB 3615 (Berlin or. 6310). 27ff. Grantha. Incomplete (adhyāyas 1-16).

Written history and Archives



Hegemonic histories render privilege to activities of the mind

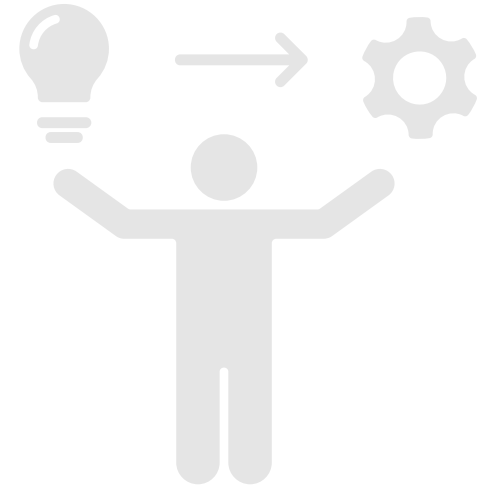
Serve a political function in a society where occupation is caste based

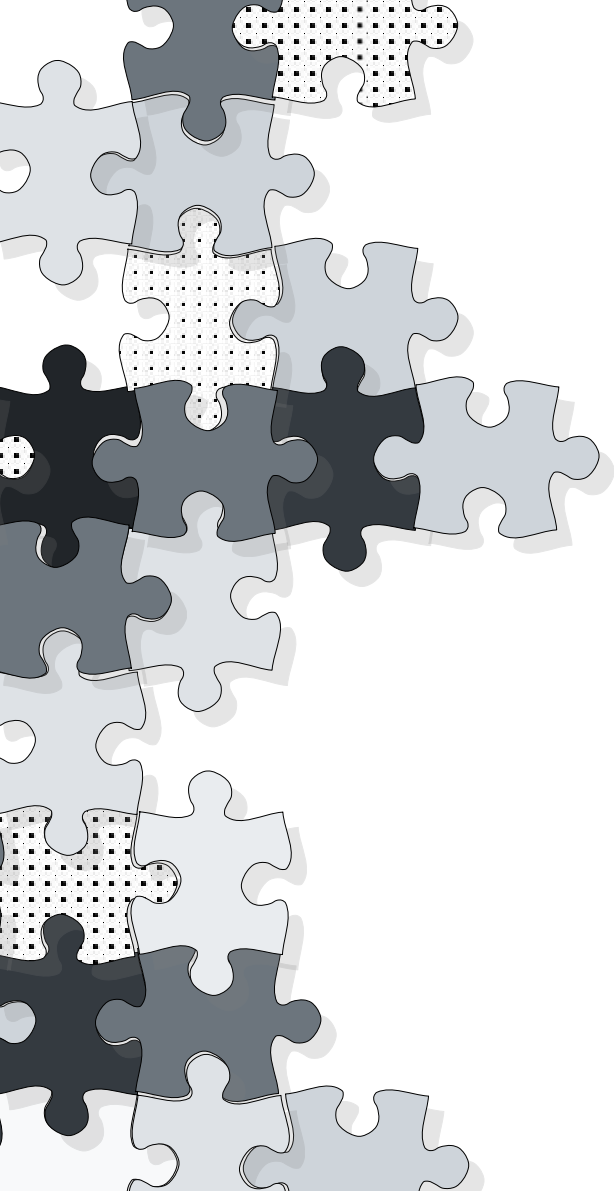
Different modes of abstraction in and across occupations

Orders of abstraction in practices there were computational/mathematical

Our programme is to bring hand and mind together to reconstruct a different history of mathematics

- **Not** any one particular language (all Indian languages)
- **Not** any one practice (agrarian, mercantile, bureaucratic, ...)
- **Practitioners in time and place**
- **Texts as records of practice**

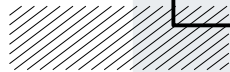




“

Archives and Practice

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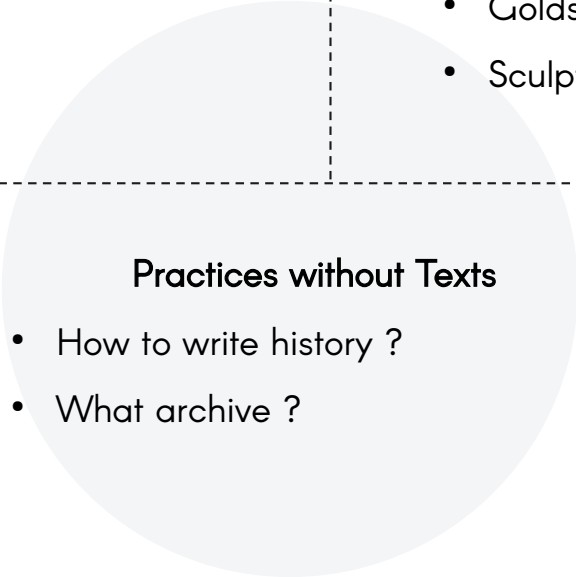
What is an archive of practice ?

Text as records of practice

- codification as processes of a few
- manuals at work
- pedagogic devices
- world of computation
- professional virtuosity

Practitioners

- Architect
- Carpenter
- Blacksmith
- Goldsmith
- Sculptor
- Boat maker
- Weaver
- Leather worker
- Accountant
- School teacher



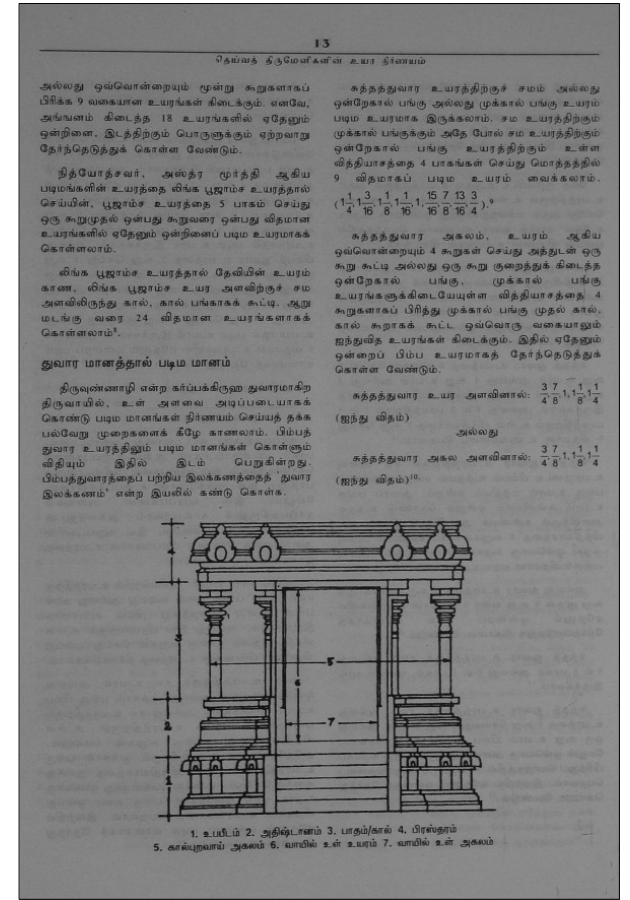
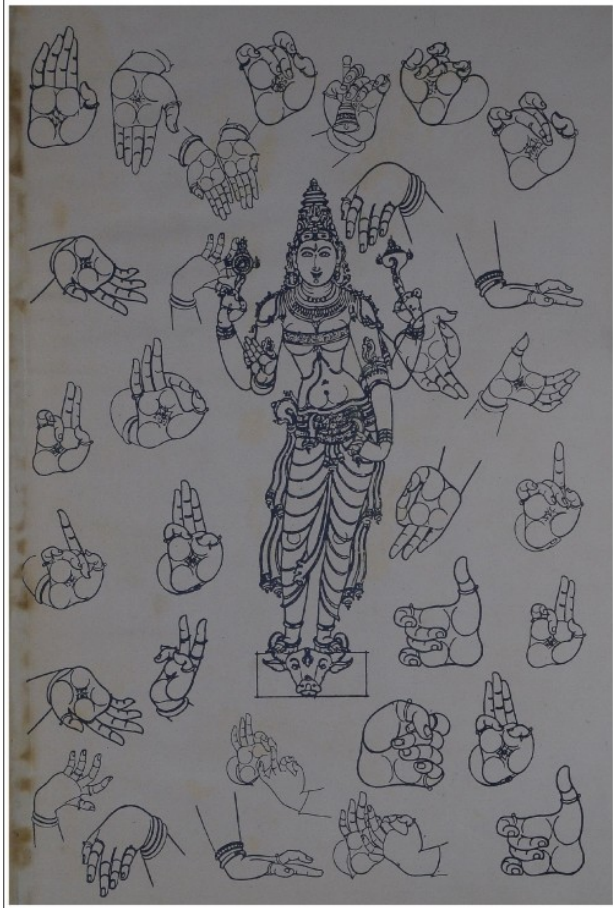
Practices without Texts

- How to write history ?
- What archive ?

Sculpting

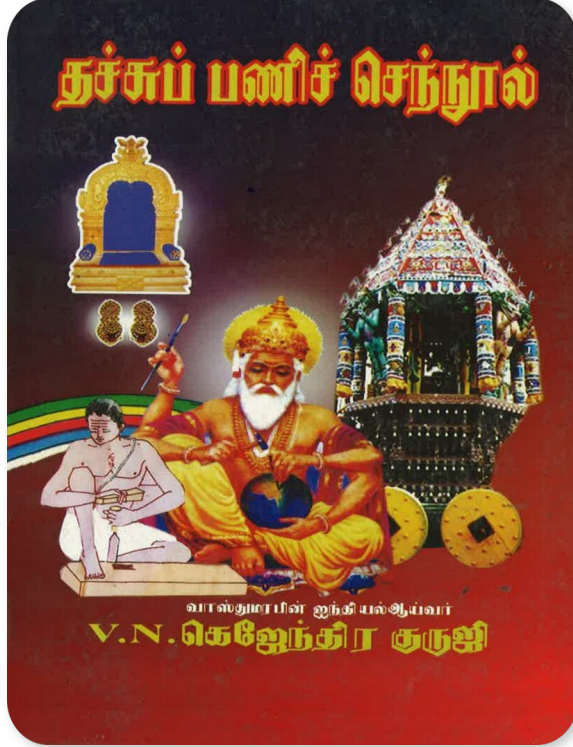


Sculpting





Carpentry



தலைப்பு :	நூல் விவரம்
ஆசிரியர் :	தச்சுப் பணிச் செந்நூல்
உரிமை :	© V.N. கெஜேந்திர குருஜி
இரண்டாம் பதிப்பு :	ஆசிரியருக்கே
வெளியீடு எண் :	ஜனவரி 2014
அளவு :	7
எழுத்தளவு :	22 x 14 செ.மீ.
பக்கங்கள் :	12 புள்ளிகள்
பிரதிகள் :	142
விலை :	1000
வெளியீட்டோர் :	ரூ. 80.00
	ஸ்ரீ பரப்பிரம்மம் ஐந்தியல் ஆய்வு மையம்
	34/38, ஆலத்தூர் சுப்பிரமணி ஆச்சாரி தெரு,
	குளா, சென்னை-600 112.
	போன்: 044-26690923
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அச்சிட்டோர் :	சுண்டரபுரபாணி பிரசுரம்,
	சிவகாசி.
	செல்: 9843426648

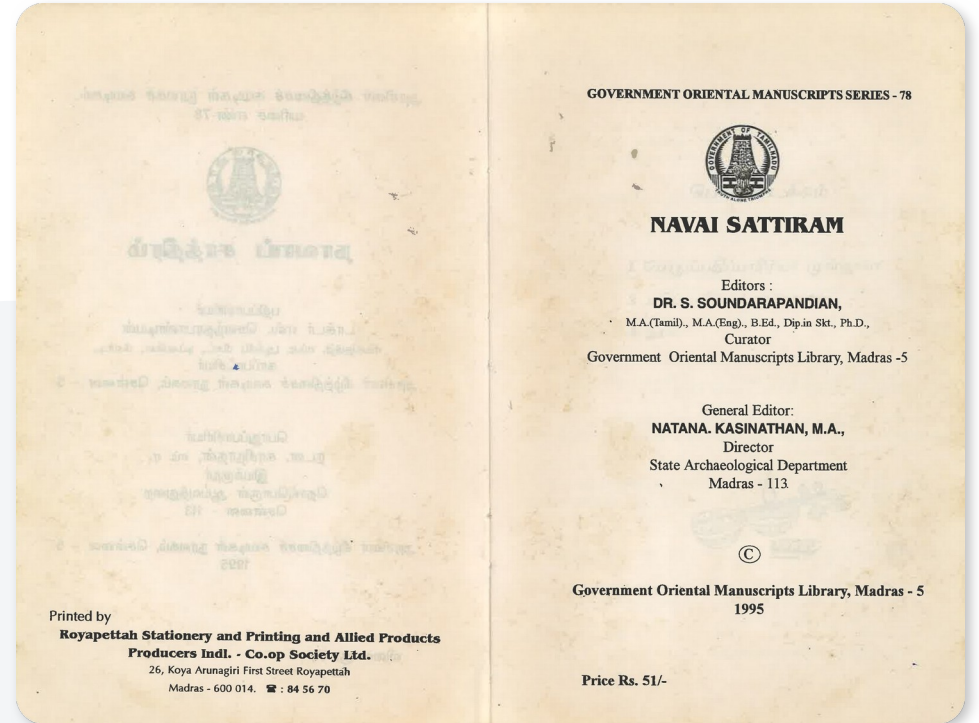
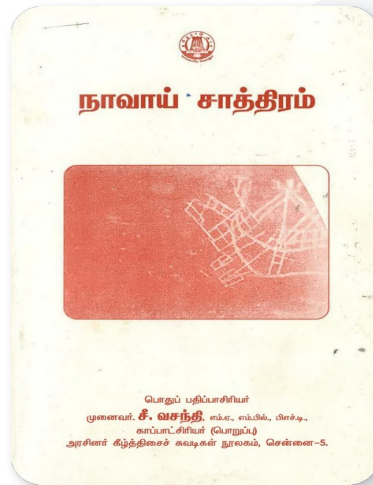
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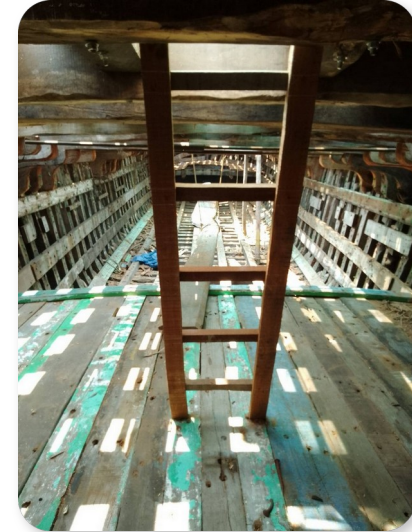
பொருளடக்கம்

தச்சுப்பணித் திருவிளக்கு
மீதின வகைகள்
மரம் வெட்டி அனுமதி
மரத்தை அளக்கும் அளவு முறைகள்
வான் பட்டறை அமைக்கும் முறை
மரம் இறைக்கும் கை பட்டறை
ஒவியம் வரையும் முறை
கொடிச் சக்கை அறுக்கும் முறை
மரக் கடைசல் மீதின அமைக்கும் முறை
மரக் கடைசல் செய்யும் முறை
மரப் பேட்டன் செய்யும் முறை
சிமென்ட் ஜாலி மரப் பேட்டன்
கடுசர்க்கரை மரச்சிற்பம்
சென்ட்ரிங் அடிக்கும் முறை
மர (பிளாக்) அச்சு செய்யும் முறை
ஆணி வகைகள்
மரப் பொருள்கள்
மரங்களுக்கு உயிர் உண்டு
மரங்கள் வற்பாடு
மரங்களை வெட்டி பரிசாரம்
ஆண், பெண், அலி மரம்
மரங்களின் வயது
அதிக வயது கொண்ட மரம்
கப்பல் கட்டும் மரங்கள்
தேர் செய்யும் மரம்
ஸ்வத விருட்சம் எனச் சில மரங்கள்
மரம் பெயரில் சில ஊர்கள்
மரங்களின் பெயர்களில் சில

27 நட்சத்திரங்களின் மரங்கள்
மரங்களின் சில பழமொழிகள்
மரம் பல மொழிகளில்
அரிய மரங்கள்
மரப் பட்டையில் வண்ணம்
தச்சுப் பணியாளருக்கு நீள வஸ்திரம்
தச்சுத் தொழிலாளர் தினம்
பழங்காலத்துத் தச்சுப் பணிக்கூடம்
மீன் கட்டணச் சலுகை
தச்சுப் பணியும் மாற்றத் துறையும்
தச்சர் செய்யும் பணிகள்
தச்சுப் பணி பஞ்ச ஆயுதம்
தச்சுப் பணி பயிற்சி மையம்
தச்சர் பெயரில் விருது
கல்வெட்டில் தச்சுப் பணியாளர்
அகராதியில் மரங்களின் பெயர்கள்
மனையடி சாஸ்திர அளவுகள்
வாஸ்து டூஜை செய்யும் காலம்
மர வேலைகளுக்குச் சில கட்டணம்
தச்சுப் பணியாளரின் பாதிப்புகள்
தச்சுப் பணியாளரின் குறைகள்
தச்சுப் பணியாளரின் கோரிக்கைகள்
சாதனையாளர்கள்
மரத்தின் விலை அன்றும்- இன்றும்
64 கலைகள்
தச்சுப் பணியாளர் பெயரில்
சில இடங்கள்
தச்சுப்பணியாளர்களின் பத்திரிகைகள்

Boat Building





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6. சோம்பு	5 1/4	6. சோம்பு	5 1/4
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12. சோம்பு	5 1/4	12. சோம்பு	5 1/4



Gold Smithery



ஆசிரியரின் குறிப்பு

ஆசிரியர் V.N. கஜேந்திரன் அவர்கள். இவர் மேற்படிப்பு இல்லாமலேயே ஆய்வு மேதையாகத் திகழ்ந்து ஐந்தொழிலையும் கற்று பொற்பணிபை முழுமையாகச் செய்தும் 1976-ஆம் ஆண்டு இரமணி அம்மாள் என்பவரை மணம் புரிந்தார்.

இறை பணியில் ஈடுபட்டும், ஸ்ரீ வில்வபரப் பிரம்மத்திற்கும், ஸ்ரீ காயத்ரி தேவிக்கும் ஆலயம் அமைத்தும், வில்வபிரம்ம தோத்திரம், ஸ்ரீ அங்காள பரமேஸ்வரி திருத்தல வரலாறு, ஸ்ரீ 'காயத்ரி மகிமை, ஸ்ரீ மகாமேரு மகிமை, இவ்வை ஆன்மீக விளக்கம் ஆகிய நூல்களை வெளியிட்டும், அகிம்சை மற்றும் உலக சமயங்களைப் பற்றி தேர்வெழுதி மதுரை அமைதி விஞ்ஞான கழகத்தினால் நற்சான்றிதழ் பெற்றும், சென்னை ஸ்ரீ காளிகாம்பாள் ஆலய அறங்காவலராகவும் பணிபுர்தியுள்ளார்.

வேத புராண இதிகாசங்களில் இடம்பெற்ற பாரம்பர்யம் மிக்க இச்சமுதாயம் பற்பல காலங்களில் பல்வேறு குலசிரோன்மணிகளை தளக்காக ஆட்டிகொண்டு சமுதாய பெருமைகளை வெளிஉலகிற்கு வெளிச்சம் போட்டு காட்டுவதோடு மட்டுமல்லாமல் குல ஆசார சீலராக உருவாக்கவும் செய்து கொண்டுள்ளது. அவ்வகையில் "ஐந்தியல் ஆய்வர்", "விசுவகுல சிரோன்மணி", "ஆய்வுரைத் திலகம்" அன்பிற்கினிய செல்வன் பிரம்மஸ்ரீ வி.என். கஜேந்திர ஆச்சாரி அவர்களின் சமுதாய பணி சிறப்பானது. உயரியது. அவ்வண்ணமே சமுதாய பணி செய்பவர்கட்கே சோதனை. அப்படி வரும் சோதனைகளை வென்று நிற்பவர்களே சாதனையாளர்கள். அந்த வகையில் உலக முதற்கடவுள் ஸ்ரீ பரப்பிரம்மத்திற்கு தனி ஆலயம் அமைத்து வியத்தகு சாதனை செய்ய கெஜேந்திரன் ஆச்சாரி அவர்கட்கு பரிபூரண நல்லாசிகள், வாழ்க பல்லாண்டு வளர்க அவர்தம் தொண்டு!

மகாவித்வான் பண்டித V. நடேசனார், B.A., J.P.,

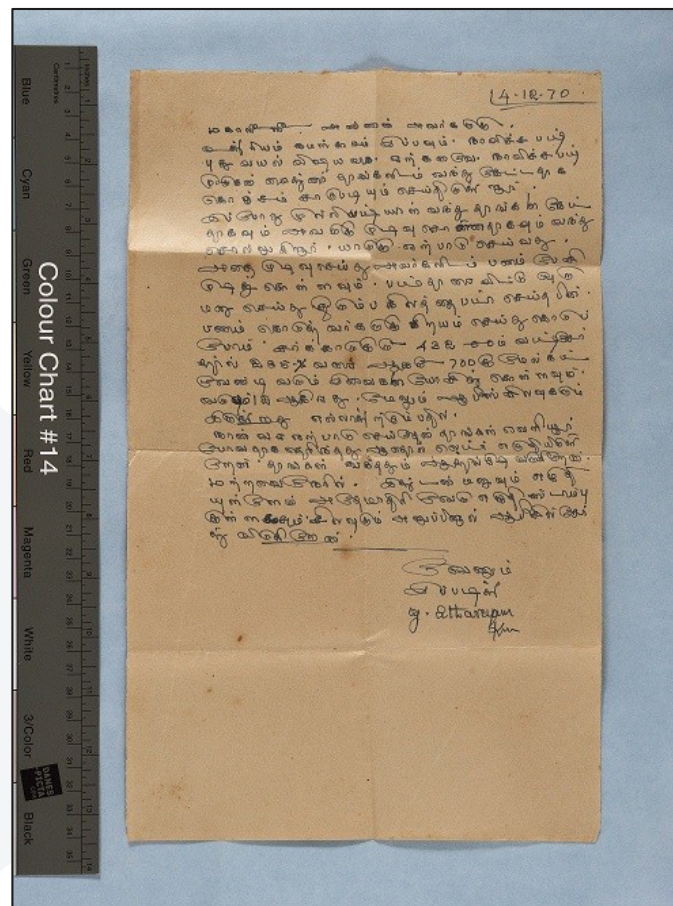
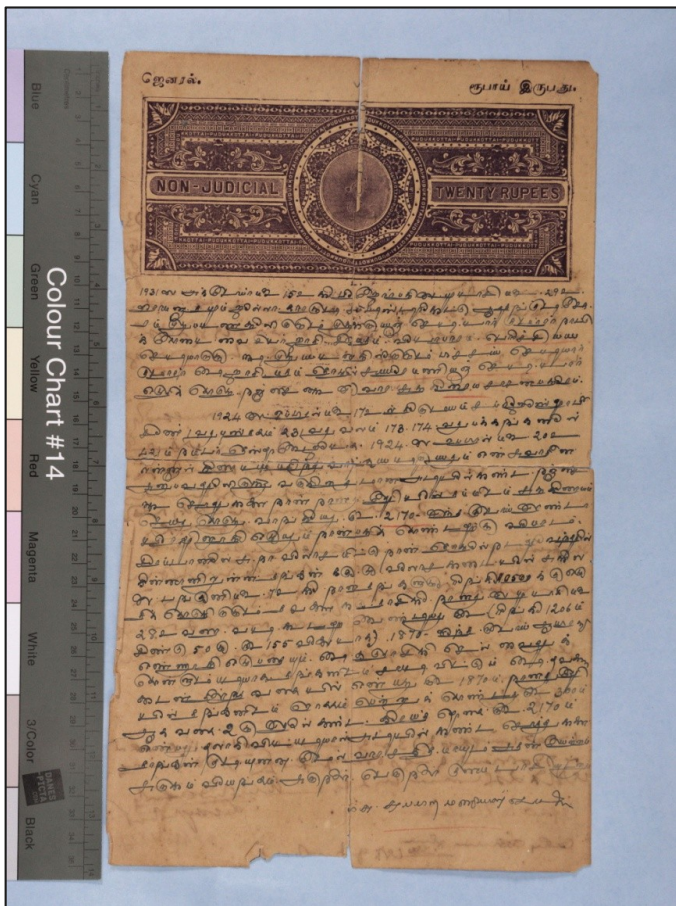


Mercantile Accounting

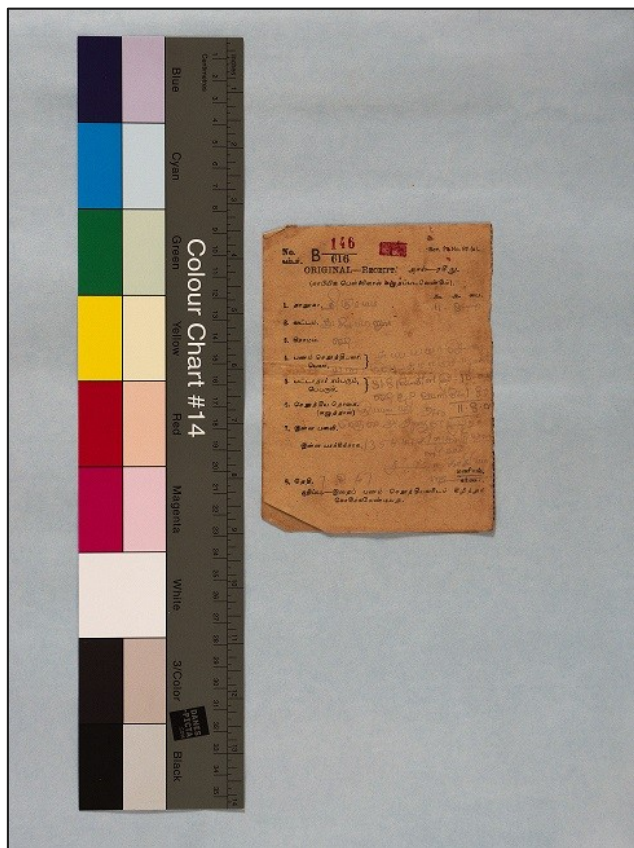


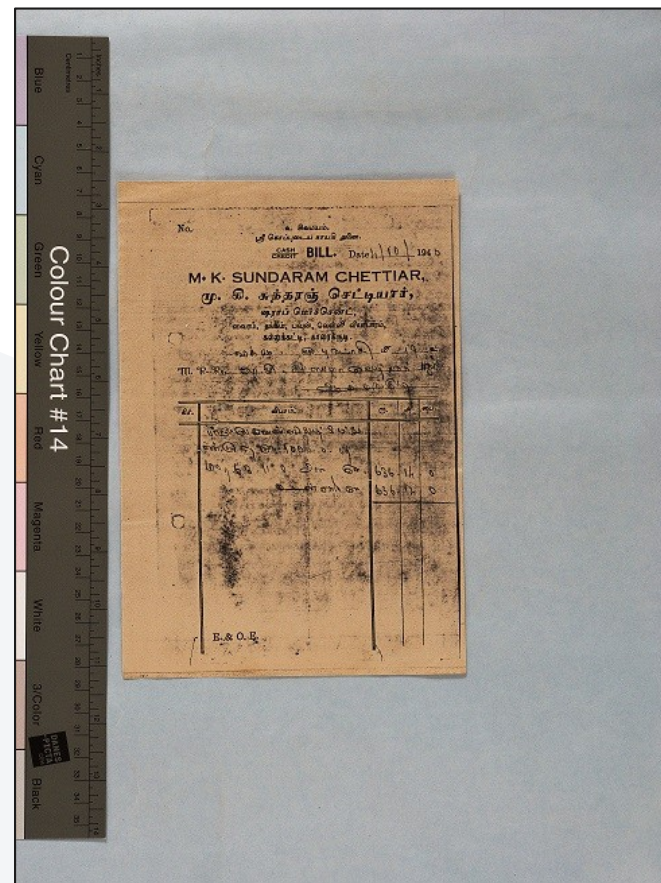
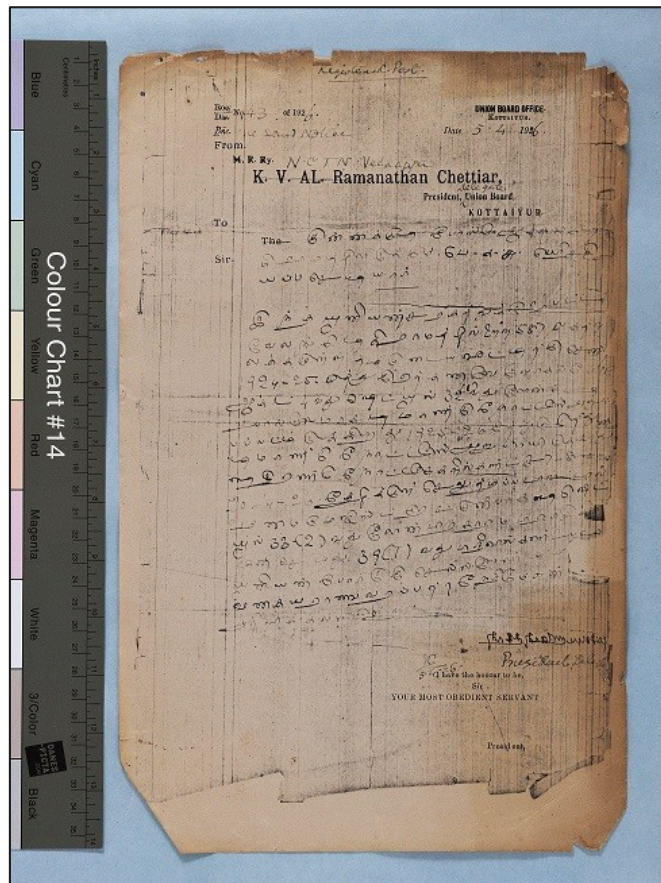
Karaikkudi Chettiyar's (Nagarathar), a mercantile community in South India, known for rigorous book keeping, banking & trading practices with uniquely developed pedagogic systems to train personnel along the lines of kinship.

Records of Mutual Agreement, 20th CE

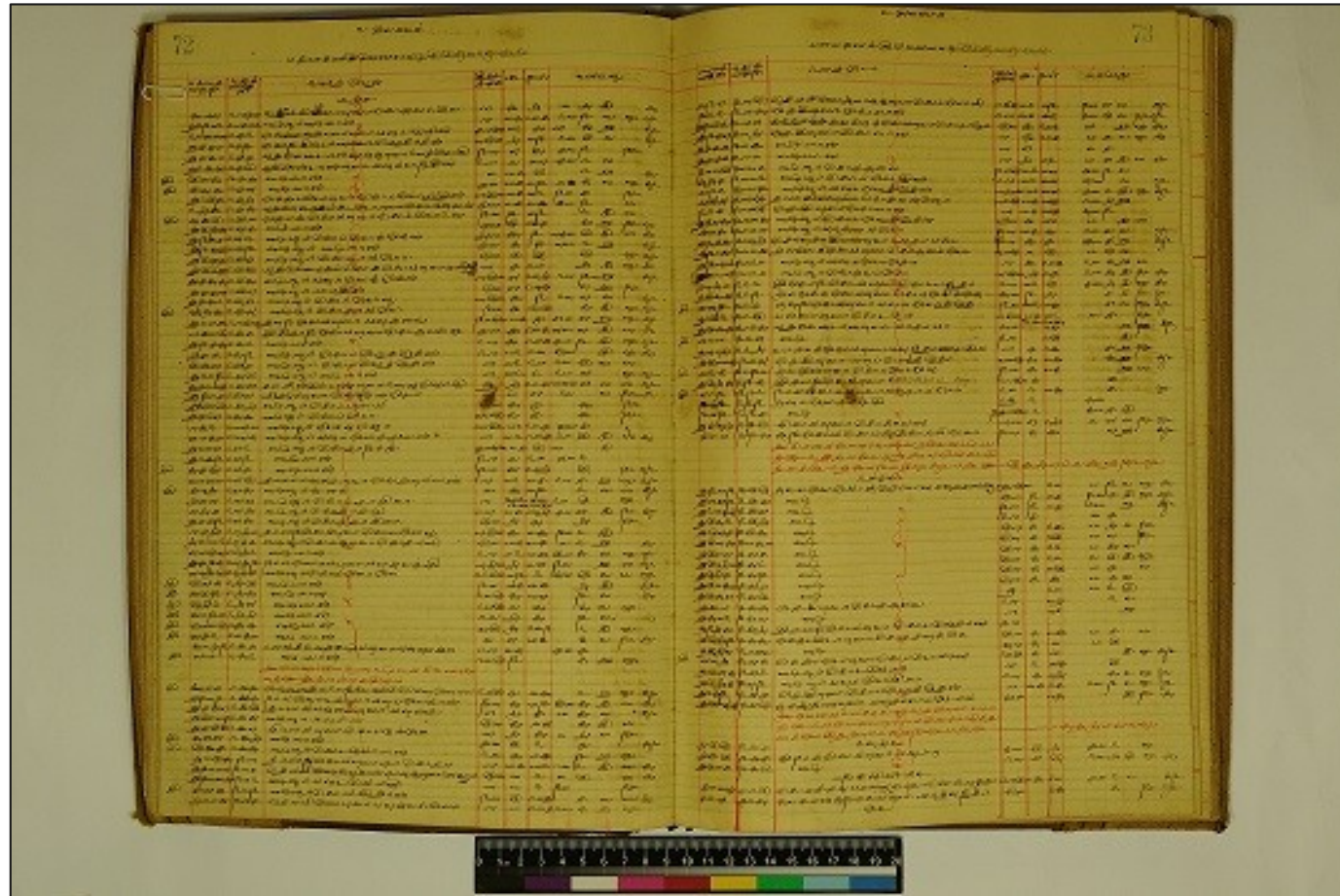


Receipts





Mercantile account keeping



Mercantile account keeping

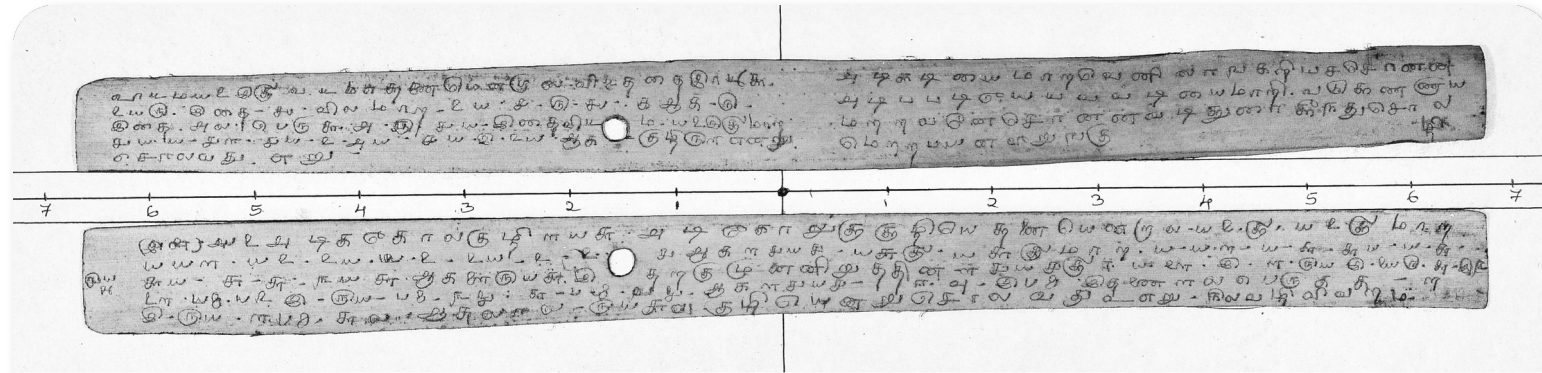


Postal Letters

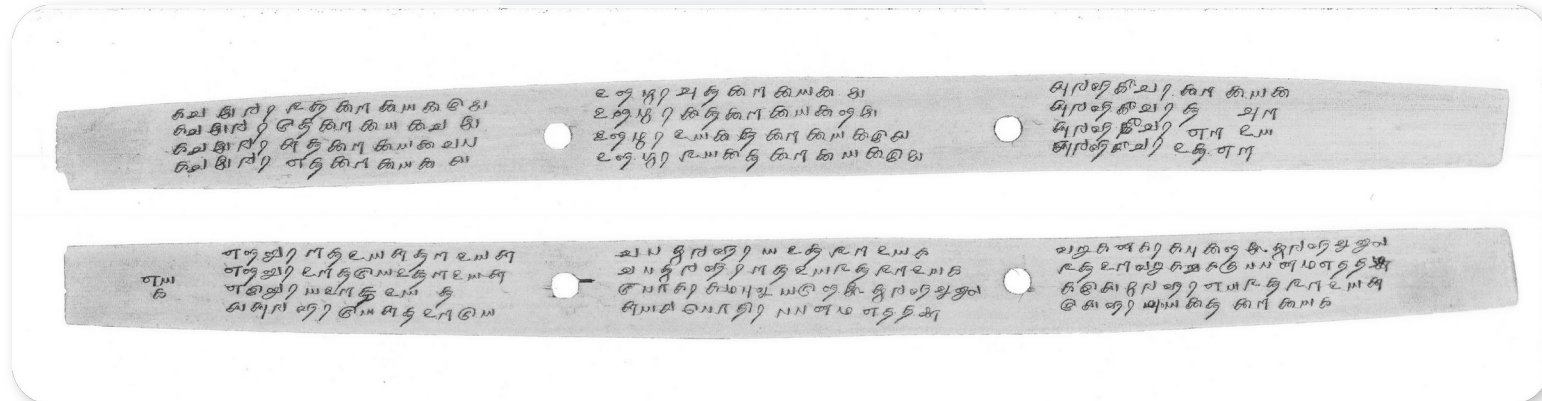


Check Book

Revenue Accounting



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Village Revenue Records

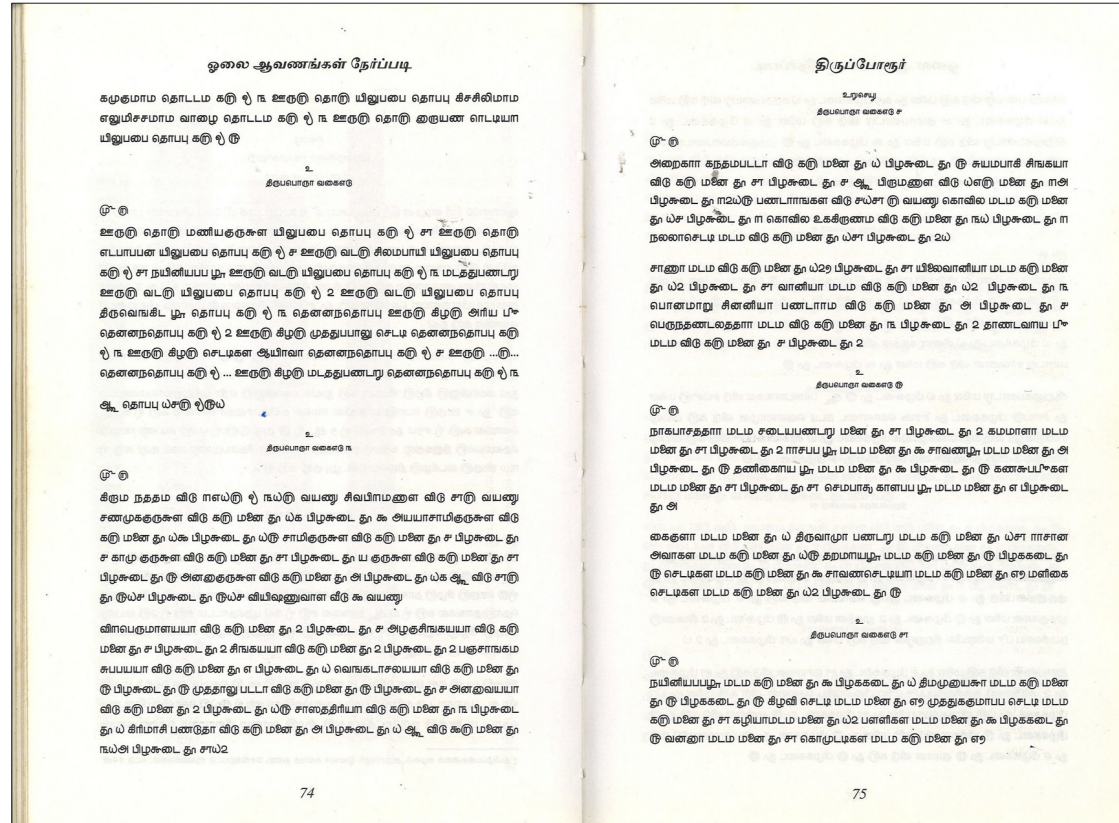


18th Century Revenue Account
Manuscript Bundles

Thiruporur and Vadakkupattu, 18th Century Village Revenue Records, Dr. T. Pushkala



Village Revenue Records

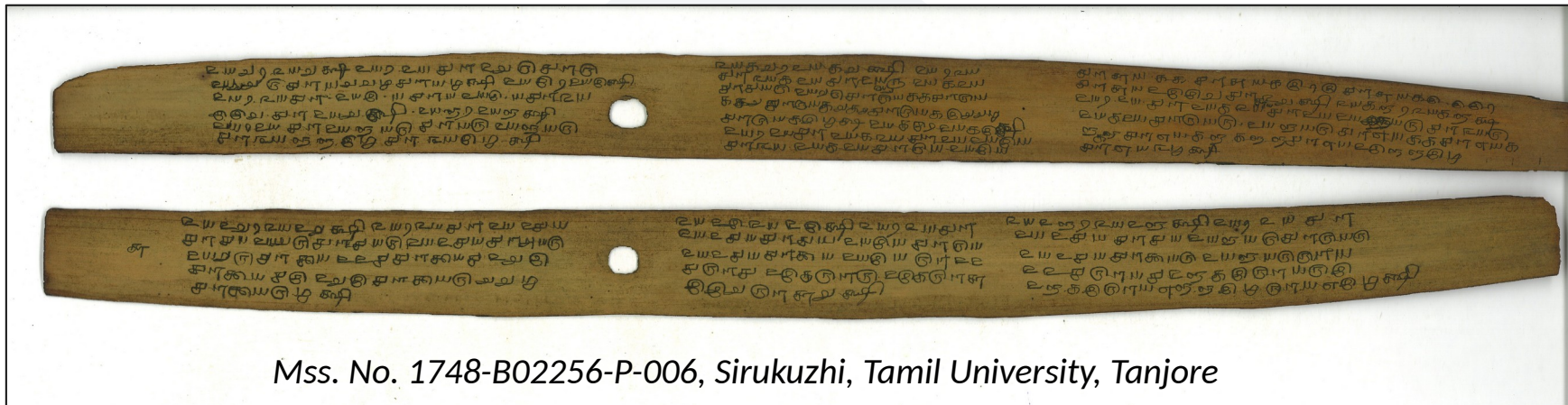


Thiruporur and Vadakkupattu, 18th Century Village Revenue Records, Dr. T. Pushkala

School Teaching



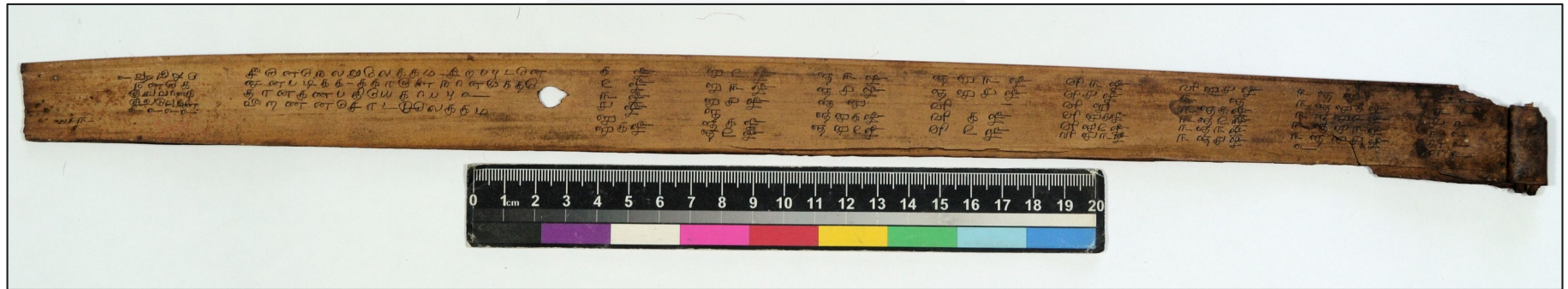
En cuvati



Eṇ cuvaṭi



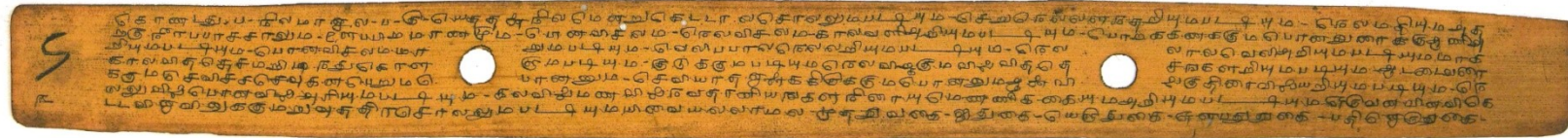
En cuvati



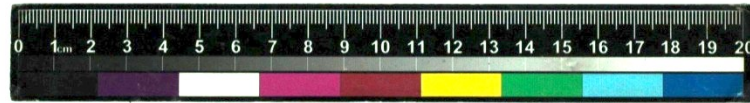
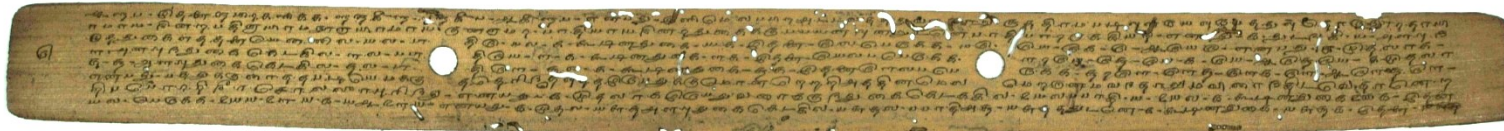
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Kaṇakkatikāram

A Tamil mathematical text from 14th-15th century. Found in different locations across the Tamil speaking region. This text contains 60 sutras of computational procedures dealing with land, grain, wages, taxation, irrigation and a huge collection of mathematical problems.



UVS Library, Tiruvanmiyur, Chennai



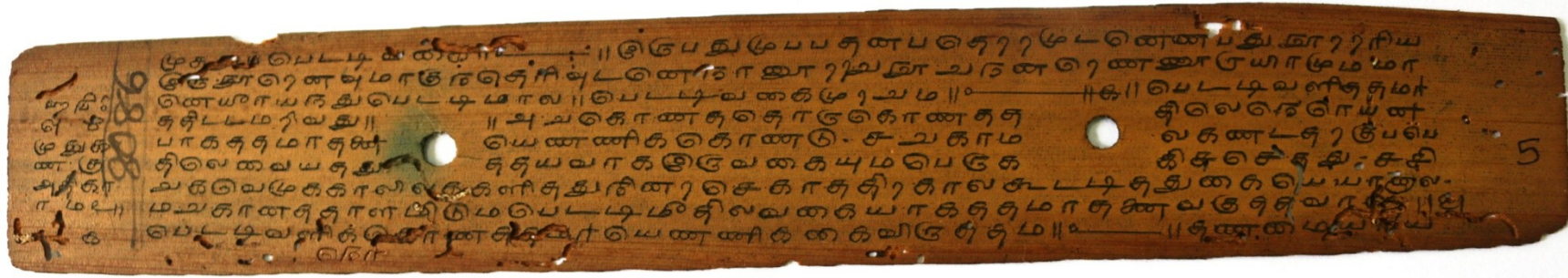
Santhalinga Adigalar Tamil college library, Perur, Coimbatore

Kaṇakkatikāra rettiṇa curukkam



Mss no. 8086, ORI, Thiruvananthapuram, Kerala

Muttu Kanakku

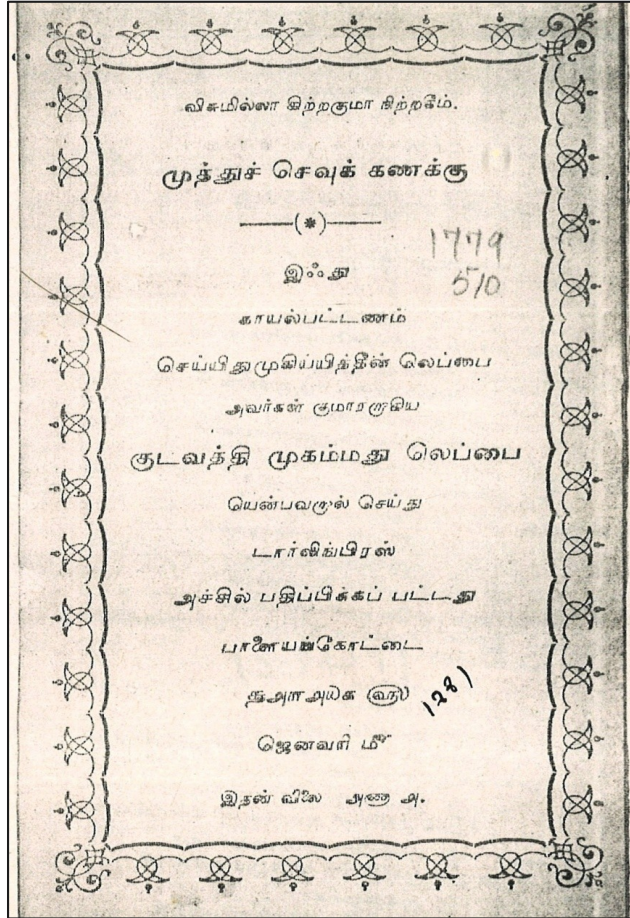


Mss.No. 8086, ORI, Tiruvananthapuram, Kerala



Mss.No. RE 33705, French Institute of Pondicherry, Pondicherry

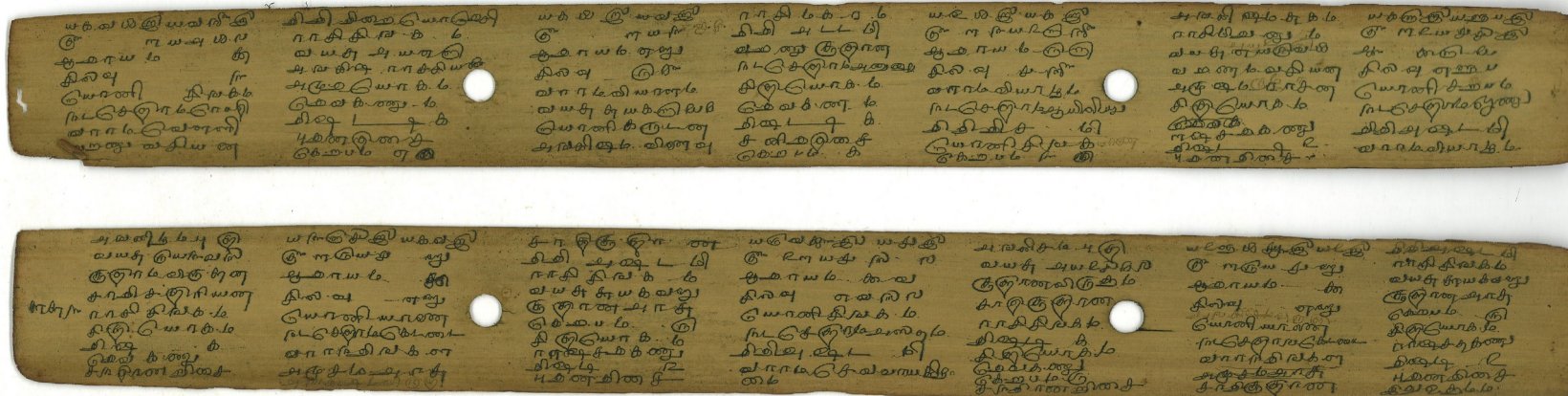
Muttu Kaṇakku



*Muttu cevruk kaṇakku, Kudavatti Muhammad Lebbai,
Darling press, Palaiyamkottai, 1881, january.*

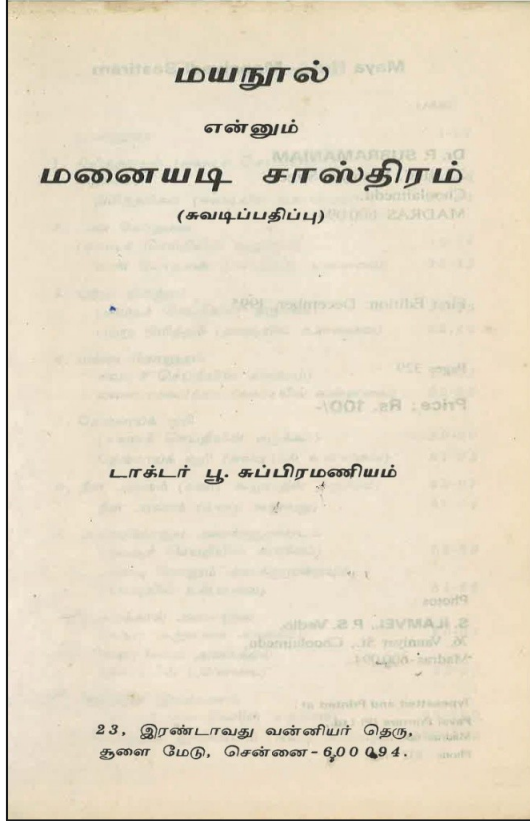
*A text on weighing and valuing pearls by Muhammad
Lebbai from Kayalpattanam, a renowned port town.*

Vāstu Maṇaiyaṭi sāstiram



Mss. No.1525-B01901-P-014, Tamil University, Tanjore, Maṇaiyaṭi sāstiram

Vāstu Maṇaiyaṭi sāstiram

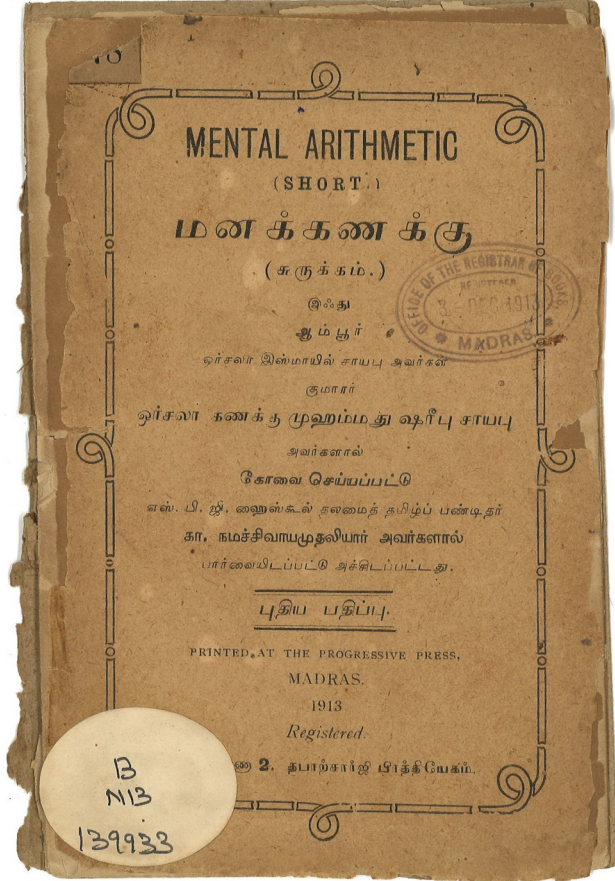


*Maya Nul – Manaiyadi Sastiram, P. Subramaniam,
Pavai printers, Madras. 1995.*

Deals with mathematics of building construction

Manakanakku

*Manakanakku (short), Orsala Mohammed
sherif Sahib*



Pedagogic records of Tamil Madrasas



Mahalra Arabic College, Kayalpattinam

Pedagogic records of Tamil Madrasas

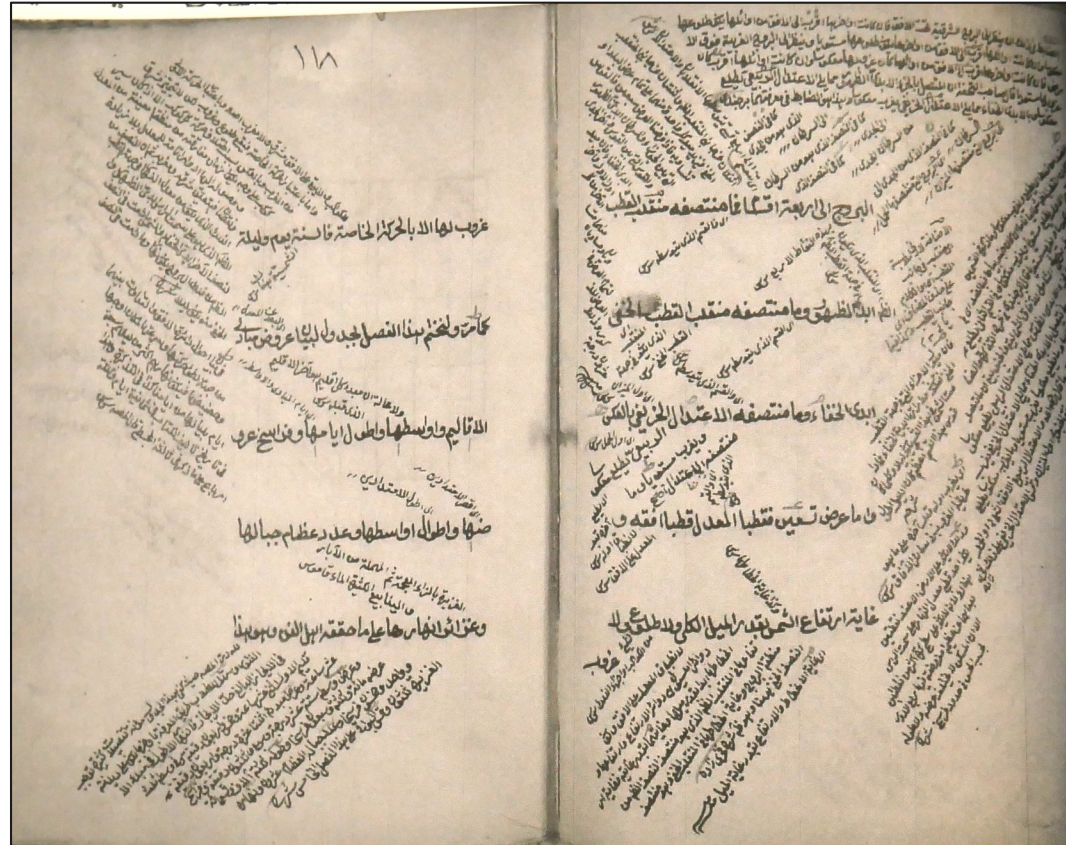


*Vellore, Madrasa Al-Baqiyat-us-Salihat,
Mother Madrasa of TamilNadu*



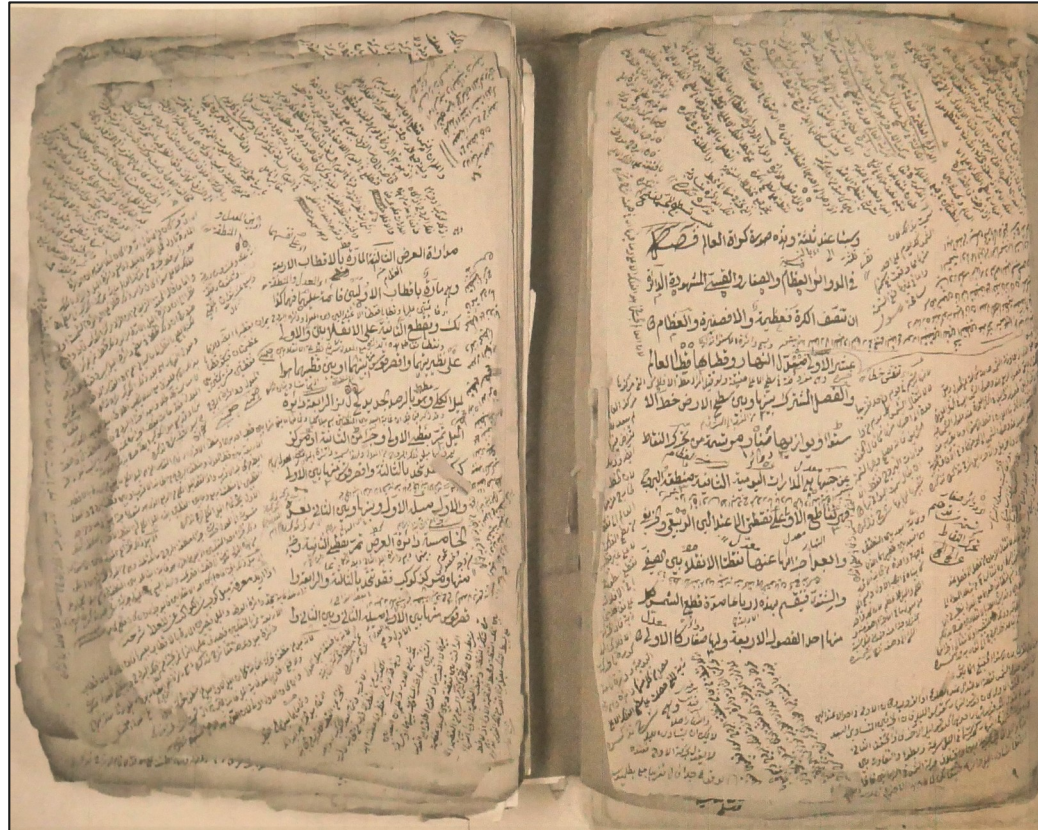
*Lalpettai, Al-Unwar, famous for
scholar Ammani Hazrath*

Mathematics Primer



Khulasat-Al-Hisab, with Teacher and Student notes

Mathematics Primer

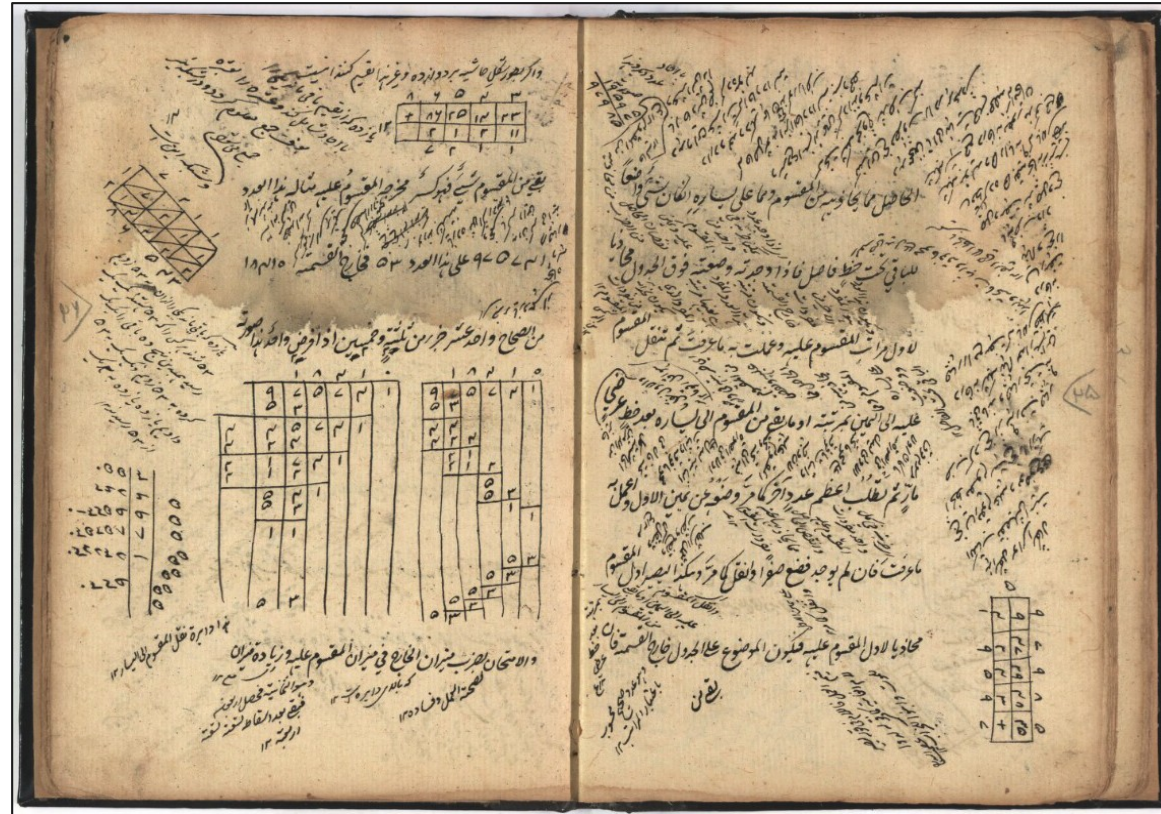


*Khulasat-Al-Hisab, with Teacher and
Student notes*

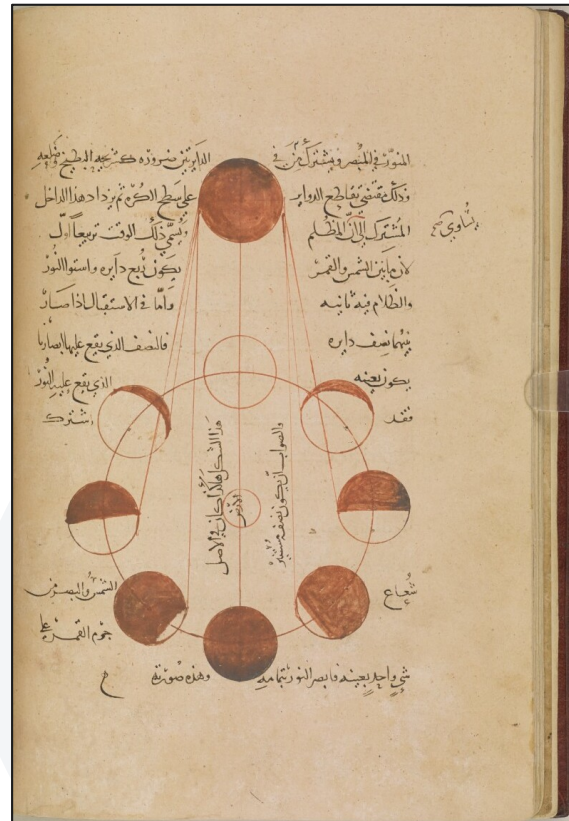
Mathematics Primer



Mathematics Primer



Book of Stars



Al-Biruni, *Kitab Al-Tafhim li-awail sina'at al-tanjim*

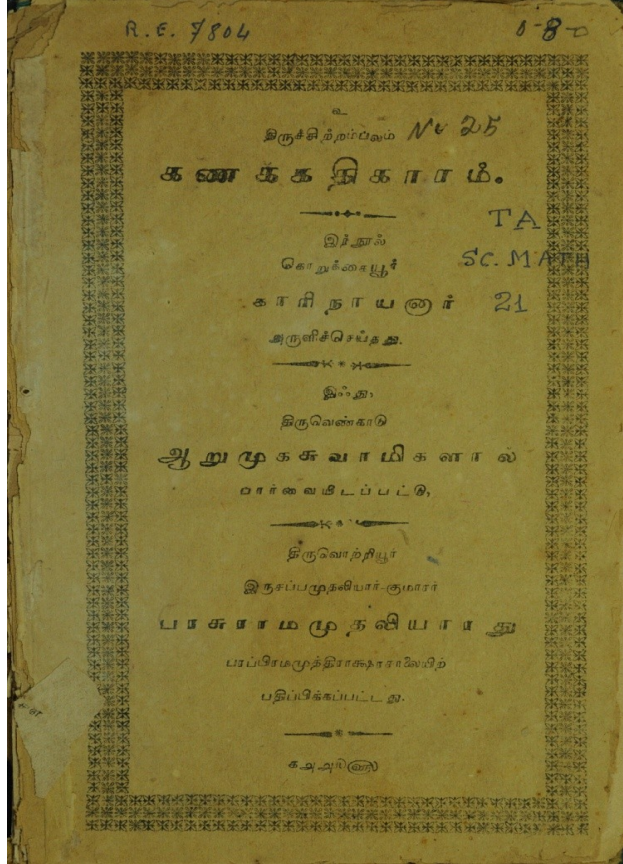
Kaṇakkatikāram



Mss from ORI, Thiruvananthapuram, Kerala

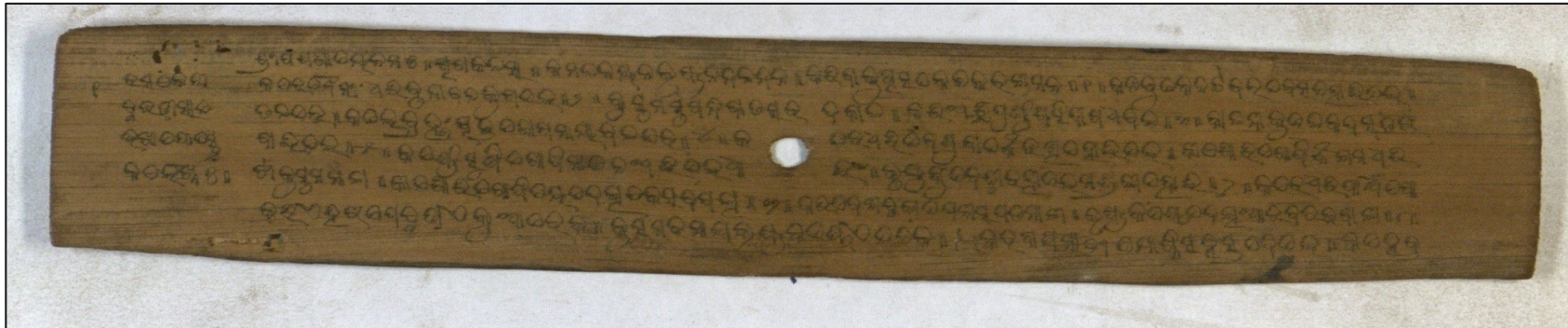
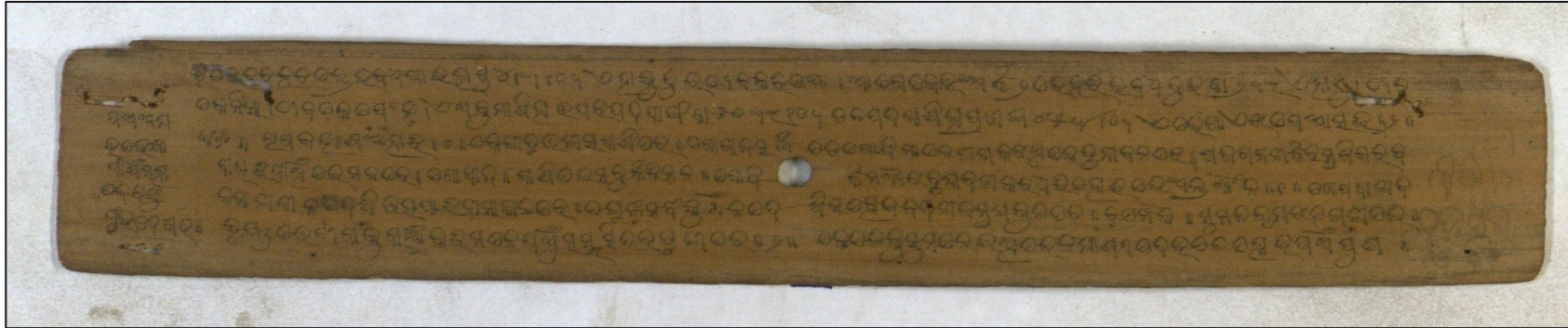
Kaṇakkatikāram

*Kaṇakkatikāram, kārī nāyaṇār, parappirama
mutrakshara salai press, Tiruvorriyur, 1880*



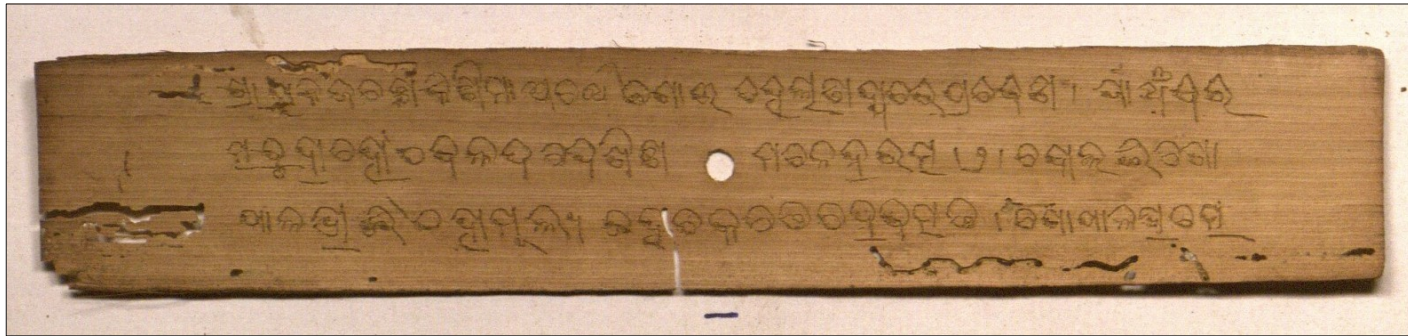
Ganita

The manuscript is in Chautisa form. Four authors have written the script in four parts. The writing style is in poetic form. Each poem is composed in certain ragas like, *Kalasa*, *Kalahansakedara*, *Chakrakeli*, *Kamodi*, *Dakhinakamodi*, *Sindhuda*, *Bhainabi*, *Ananda bhairabi*, *Kannada*, *Kausik*, *Kafi*, *Kali*, *Kedar*, *Todi*, *Gundicha Basanati*, *Panchanna baradi* etc.

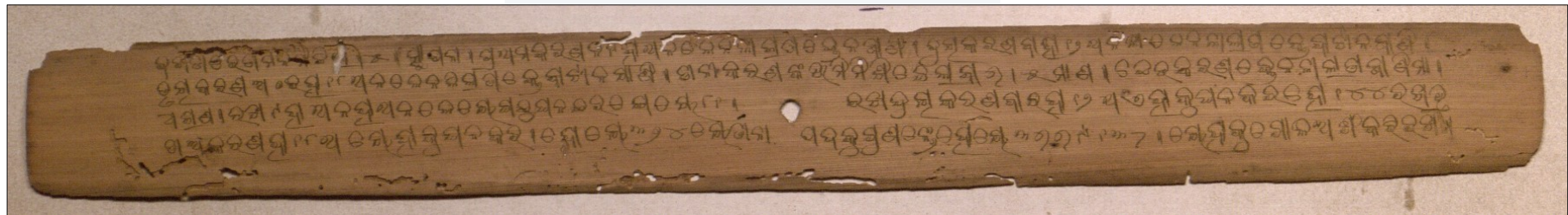


Lilavati Sutra

The most widely found Odiya mathematical text, akin to Tamil *Kaṇakkatikāram* in its content and orientation. Professor Gauranga Dash, is completing a edition and translation of this Text.

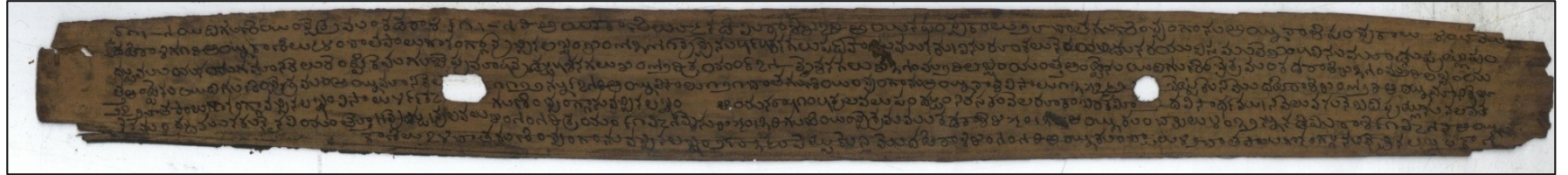
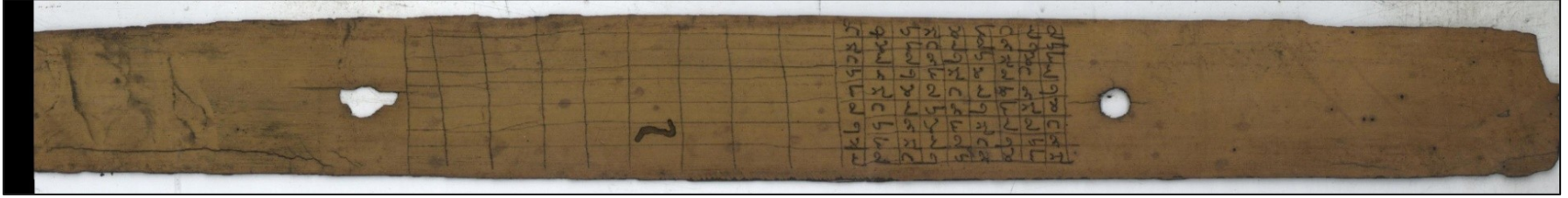


G-131, Chitta Bodha Chautisa



G-171, Khadi Ratna Chautisa

Ganithamu



TEL B 0132 D 2277, GOML, Chennai

Caya Ganithamu



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Lilavati Ganitamu

Rashtriya Sanskrit Vidyapeetha Publication Series- 308

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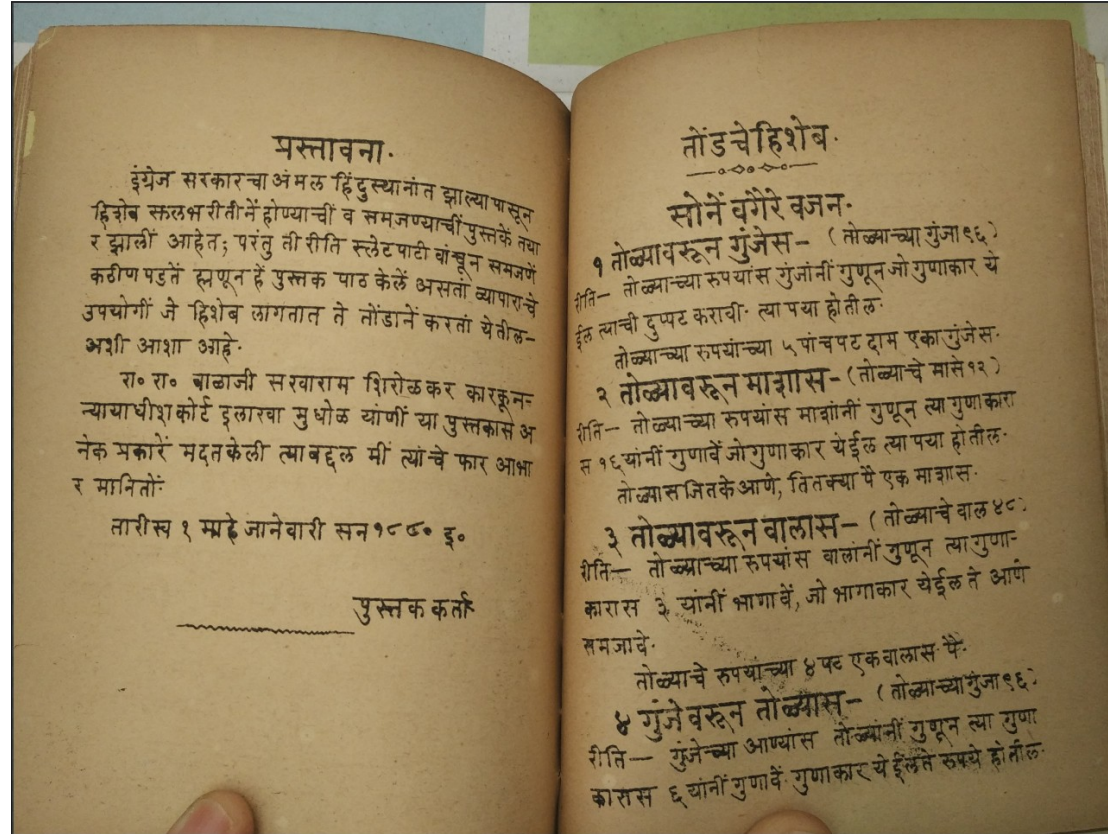
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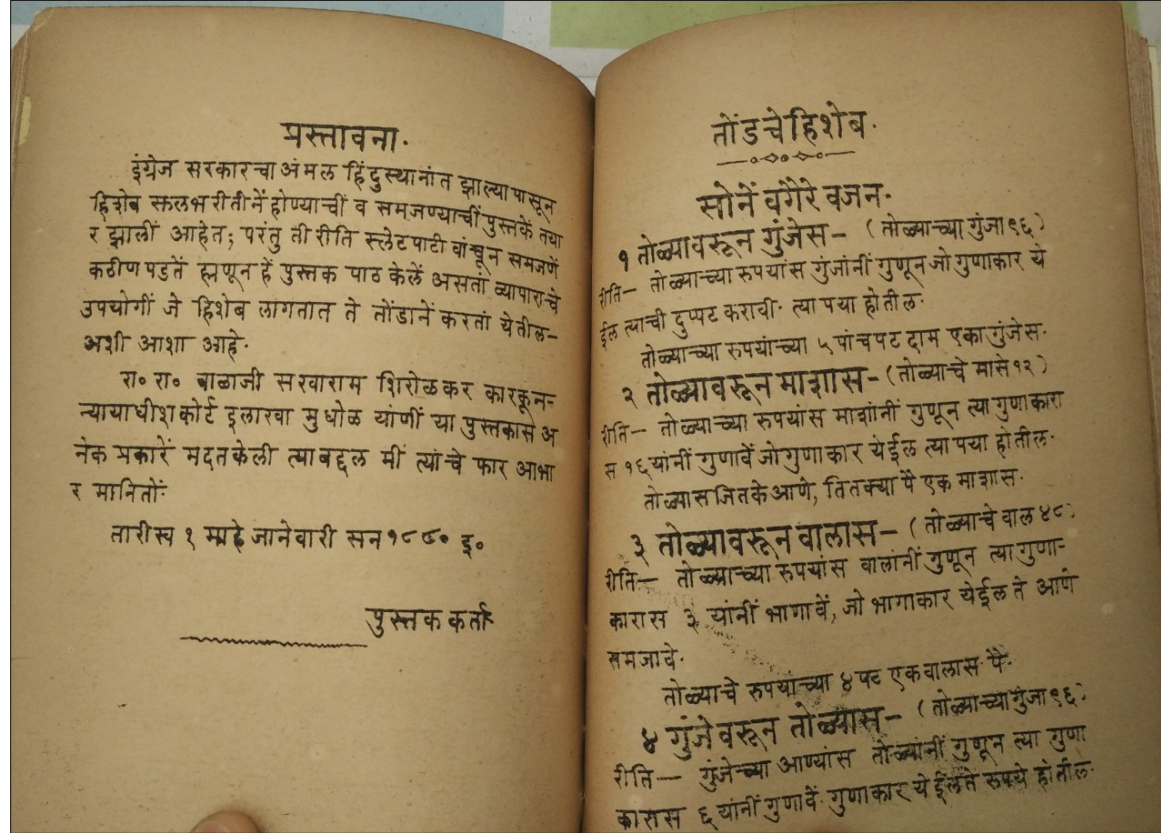
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TIRUPATI – 517507 (A.P)
2016

Mathematical manuals, primers of early 19th century



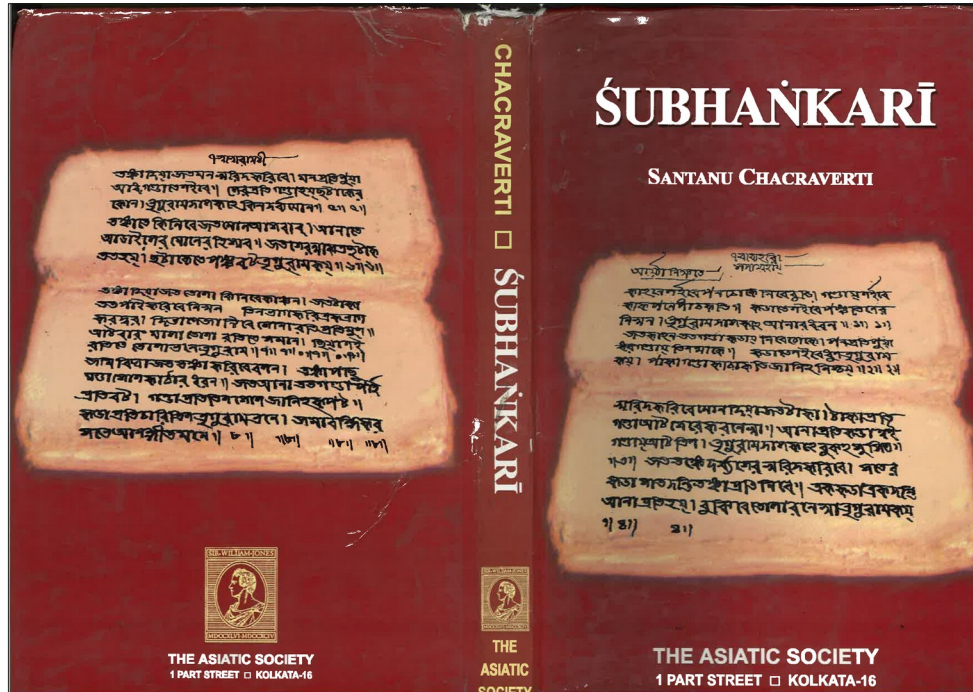
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Shubankari



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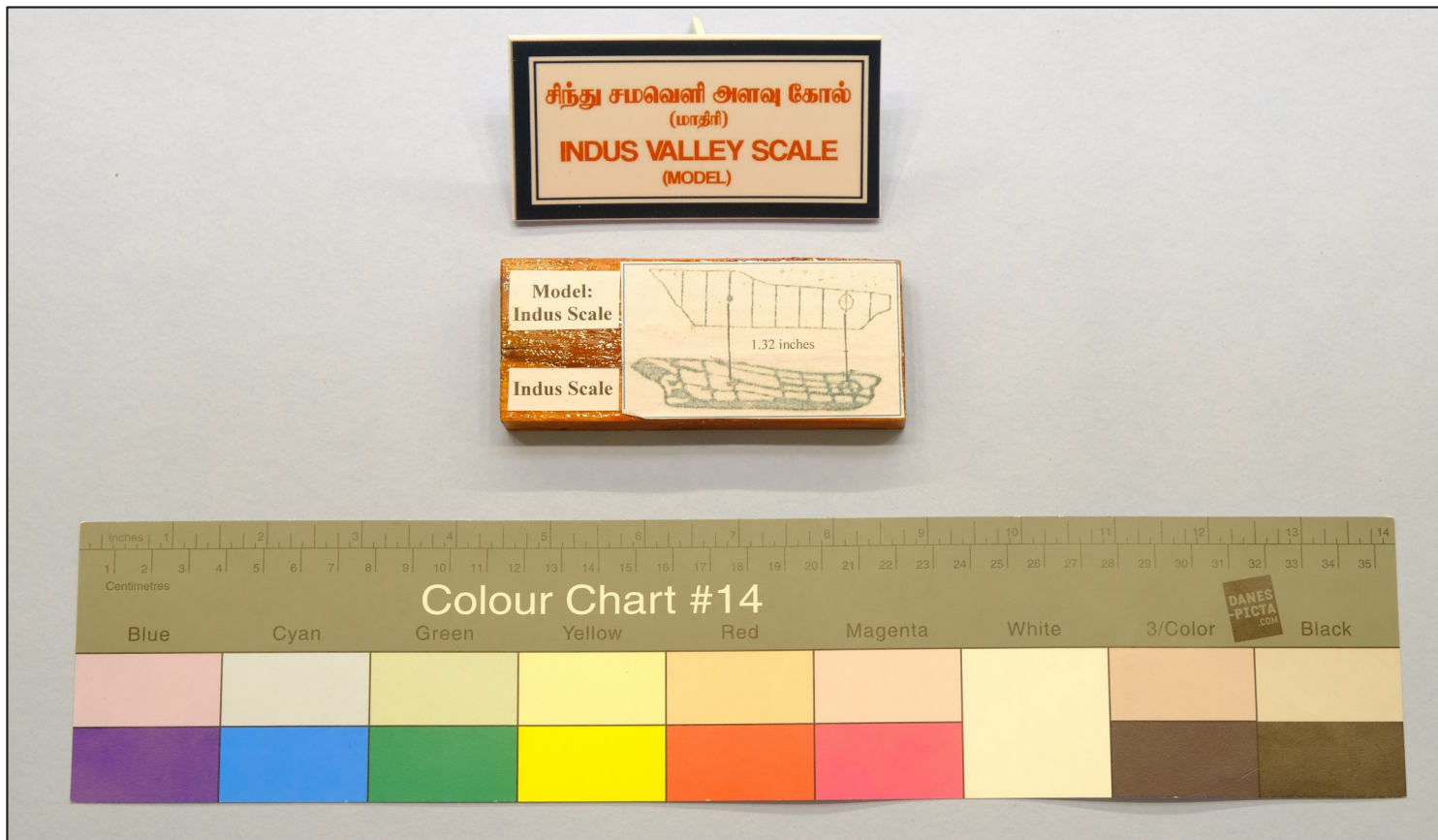
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Volumetric Measures



Linear Measures



Linear Measures



Compass



Weigh Measures

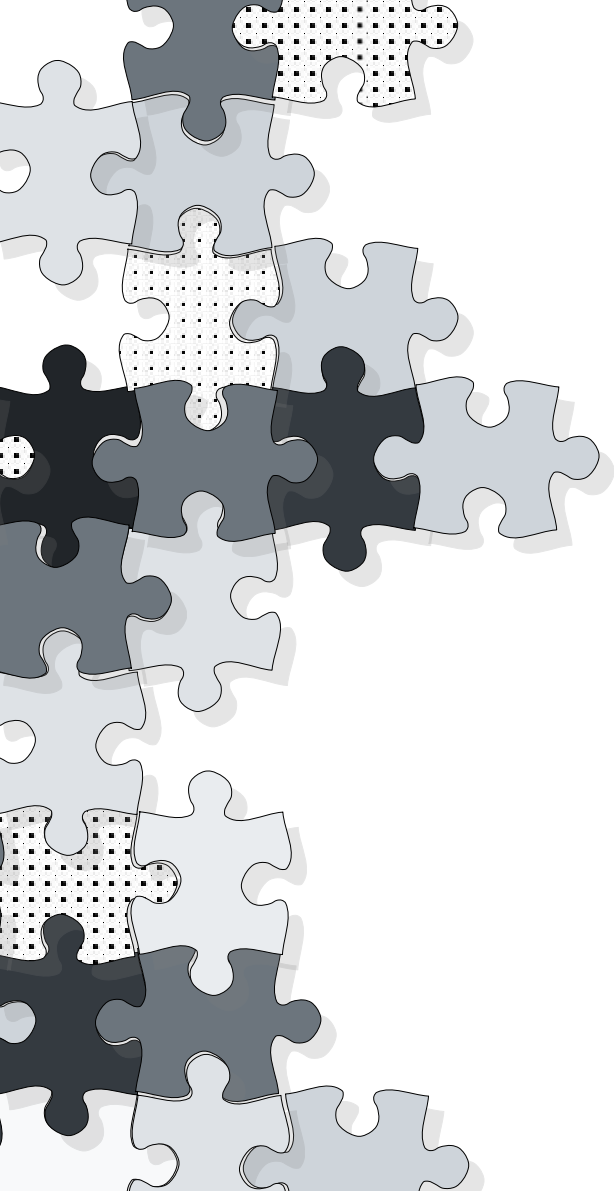


Weigh Measures



Weigh Measures

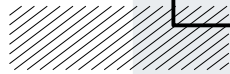


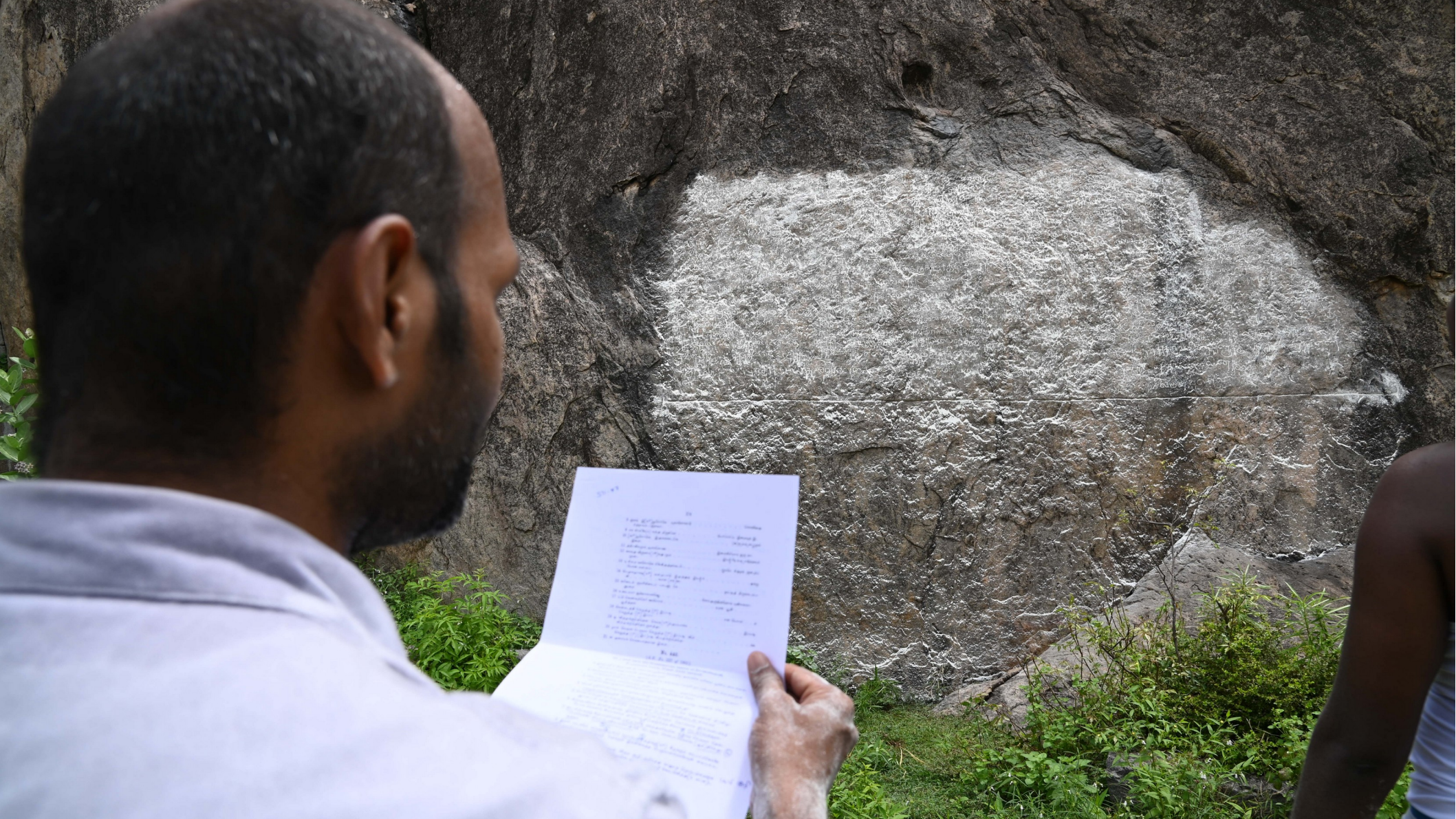


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Doing Public History

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37-41

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Dr. ...



18 feet kōl inscription, @ seeyamangalam

The public display of standard (the measuring rod in the temple)

Measure in field @ Seeyamangalam





Thiruvonnainallur measuring rods

@ Devarayanpettai



Measuring in field @ Devarayanpettai



@ Devarayanpettai

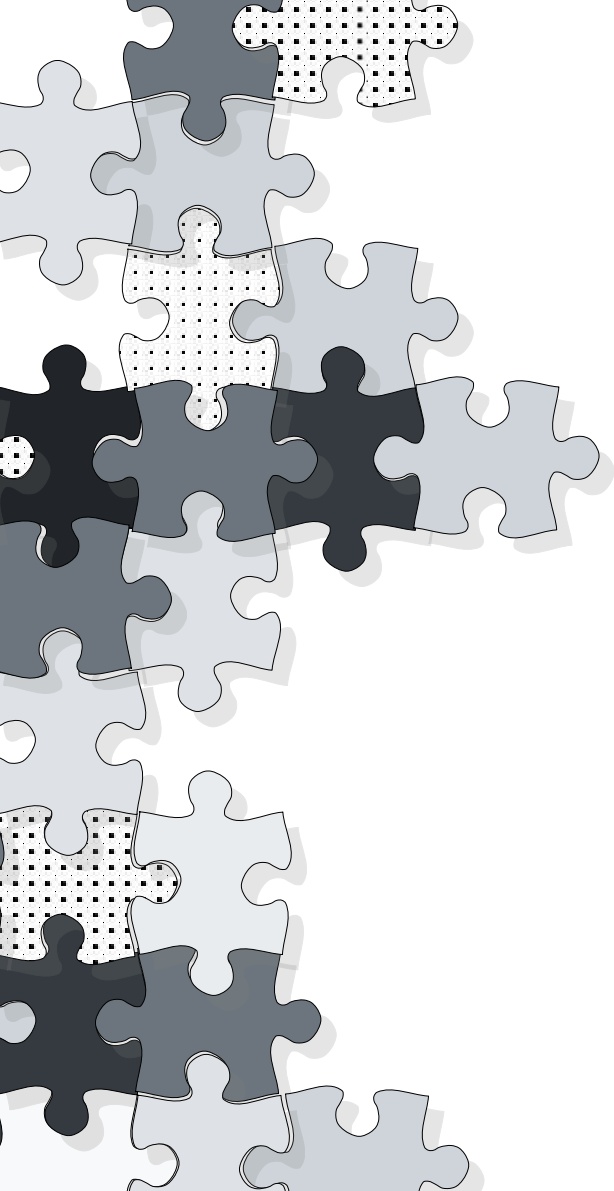


@ Vadakkupattu



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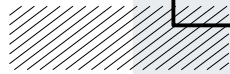
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Archives as Vehicle

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archives and the context

Practice



Practitioner

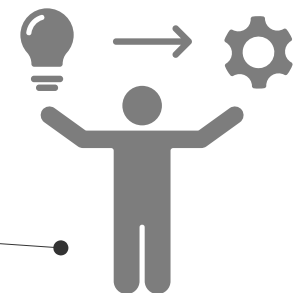
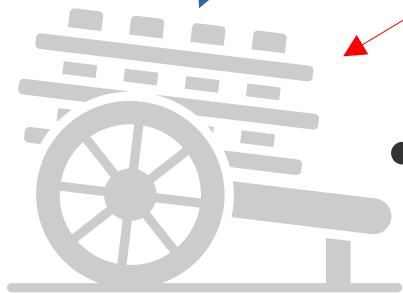


dignity, tools, craft, dexterity,
coordination, repetition, experience,
livelihood . . .

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product and heritage



product

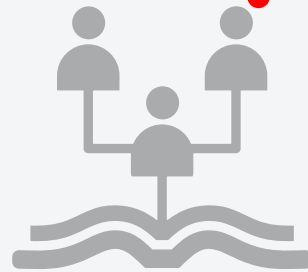


market

who does the heritage informs to, and
what does it inform ?

what context does it sets around the
practice ?

does it helps in continuing the practice
really ?



heritage

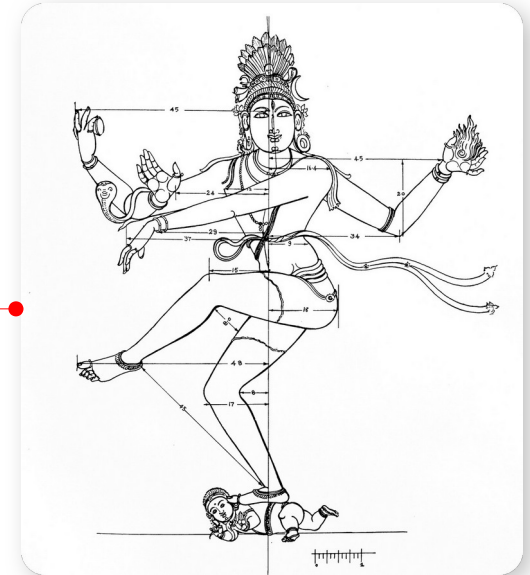
change at workplace



change at workplace



change at workplace vs unchanging text



product in market

heritage speaks to market

bring them together

...
recite ?

...
dissonance,
resonance



codified text in archive



fragment of an archive



Text – Practice – Practitioner

In search of Resonance or Dissonance ?

Text vs Workshop



How to bring together



Read aloud the text (recite)



Does it resonate ?



Measure
resonates
But not
language



Language
resonates
But not
measure



Virtues resonate

Where is text ? Where is practice ?

Why text at all ?

Occupation without texts ?

Why text now ?



Text – Practice – Practitioner

Curious case of the Merchant Accountant

- Account books available
- Codes available
- Economic history available

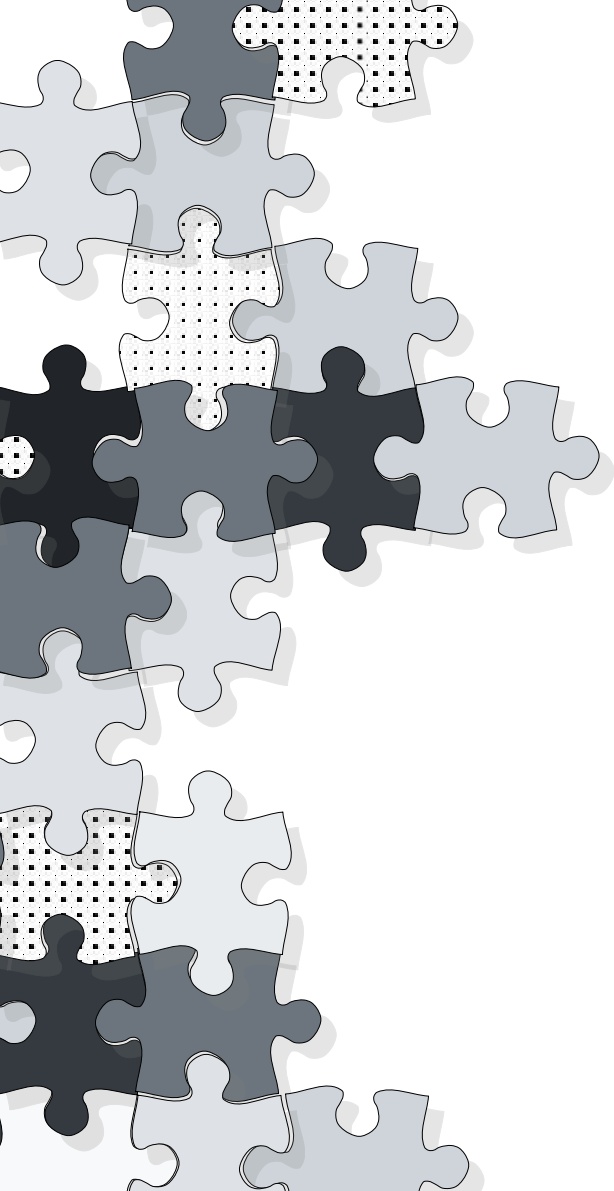
But the practice of cunning ?

The practice of manipulation ?

Perceptions available but are they retrievable ?

How to make the archive speak for the practitioner ?

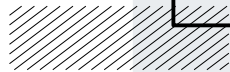
- Historian is just a fragment of the public
- Which archive ?



“

Archives and Modes of Abstraction

”





Text and Abstraction



Procedural



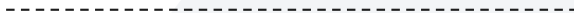
Algorithmic



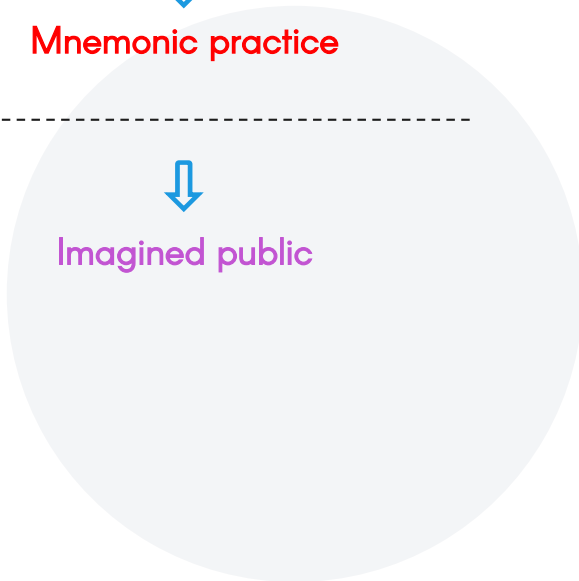
Virtuosity



Mnemonic practice



Imagined public





Orders of Practice and Abstraction

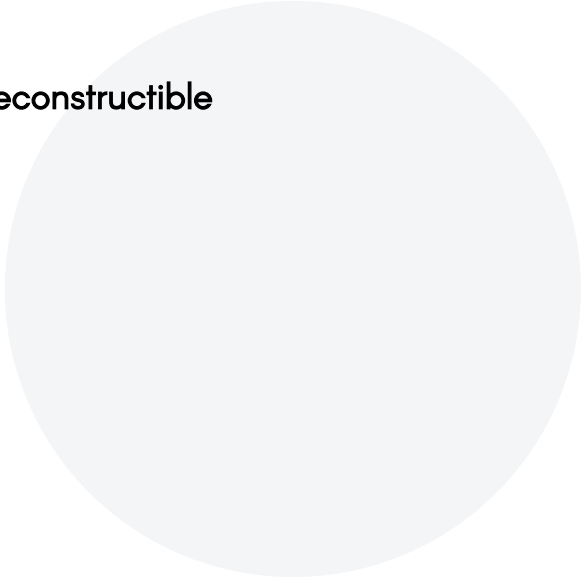
At the workshop

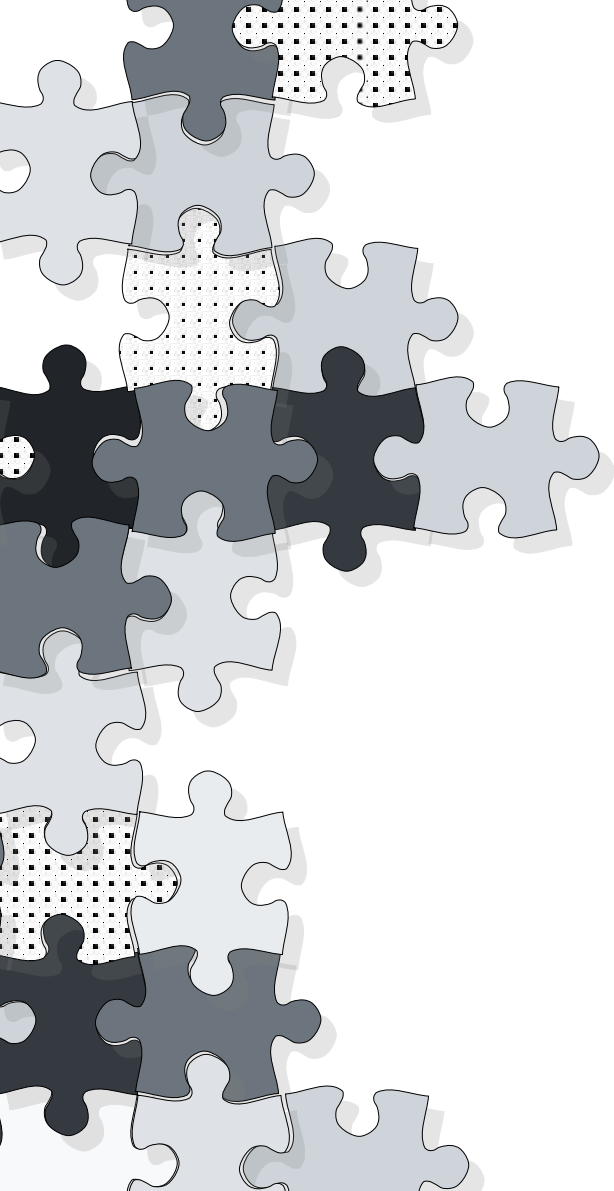
- Through the axis of measure – as reconstructible practice

School

- Mnemonic practices – reconstructible

Accounting

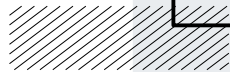
- Codes reconstructible
- 



“

**Archives as sites of
practice and knowledge**

”





Possibilities and Constraints of Digital Platforms

How archives cognitively shapes the image of an activity of the practitioner ?

- From Fixed/Static to dialogic
- Towards reconstruction
- To measure again ?
- To recite again?

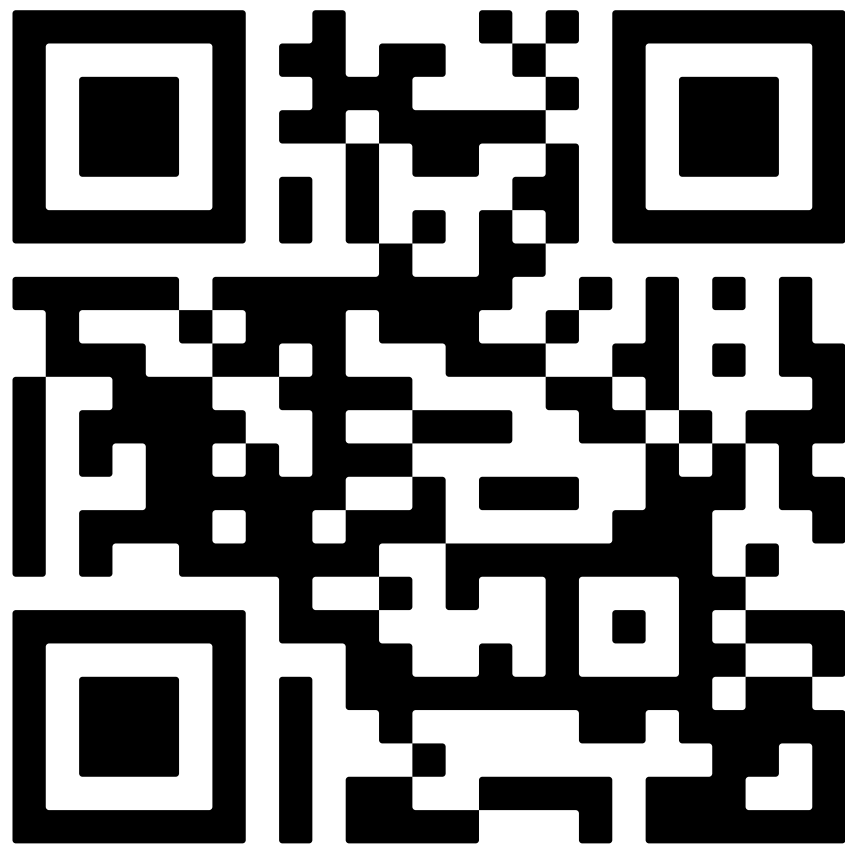
Digital archive/atlas (a work in progress) – as a **Thematic-Spatio-Temporal framework**, providing a means to explore the sources and diverse records. Design is exercised based on **long term collaborative participation** and distributive approach.

Archive of Practices



<https://exhibits.cooponscitech.in>

Historical Atlas of Metrology



<https://echoes.ifpindia.org>



Possibilities and Constraints of Digital Platforms

Digital Constraints

What the code allows ?

Dimensionality: 2D, 3D

Interaction that facilitates exploration

Visualizing a different archive

Different stories need different archive

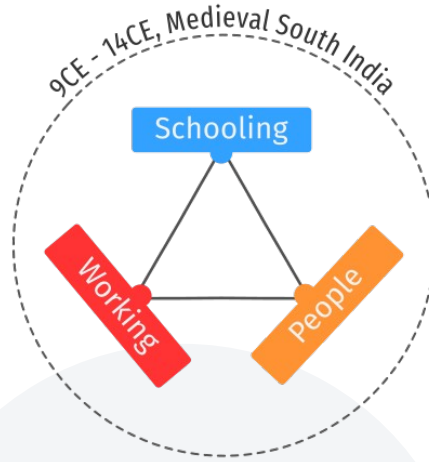
How do we reinvent a relationship between history and archive of practices

Different values and possibility of justice

How can we imagine archive for the practitioners ?

Conception based on grounded learning experience

Method of doing history with people by grounded investigation of primary sources and their memories, changes the way information is curated and its diversity into the archive. Thus making archive as a repository of not only of the past records but also the space for current practices.

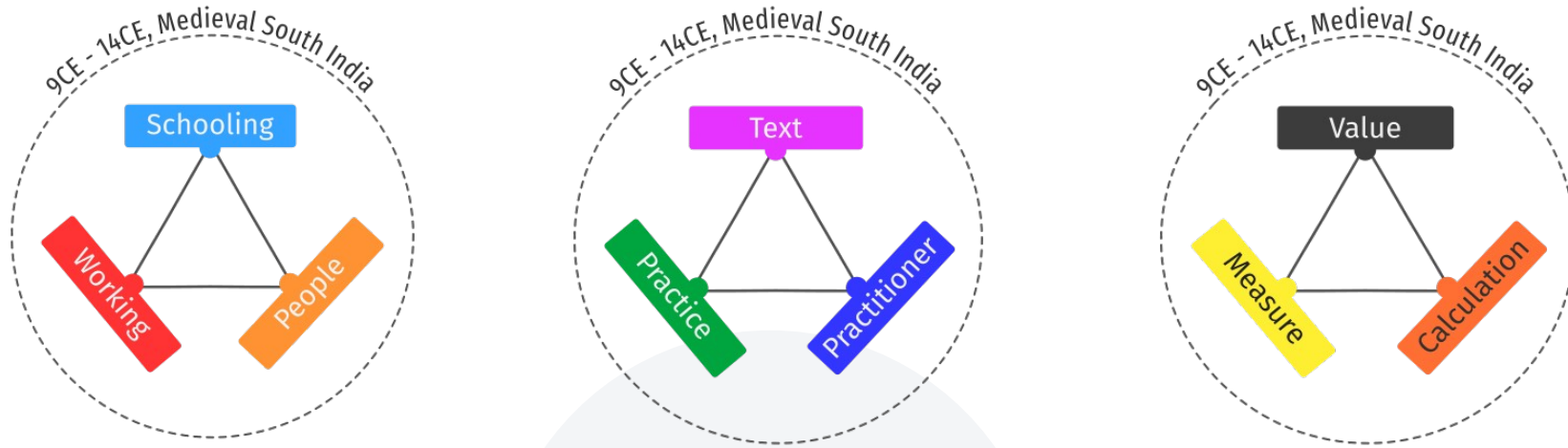


We organized the collections to let the visitor navigate through the perspectives of site of learning, working and what general mathematical practices people have known and practicing.

This throws light on interaction between all three facets, that lets the nature of knowledge creation, transformation over time and place.

With this perspective, underlying information connects information contextually that brings together the textual records, tools of practice, and **evidences from the workshop of practitioners**, collected through ethnographic work. Thus relationship between text, practice, practitioner can be explored to engage in discussion about the nature of measure, calculation and value assignment.

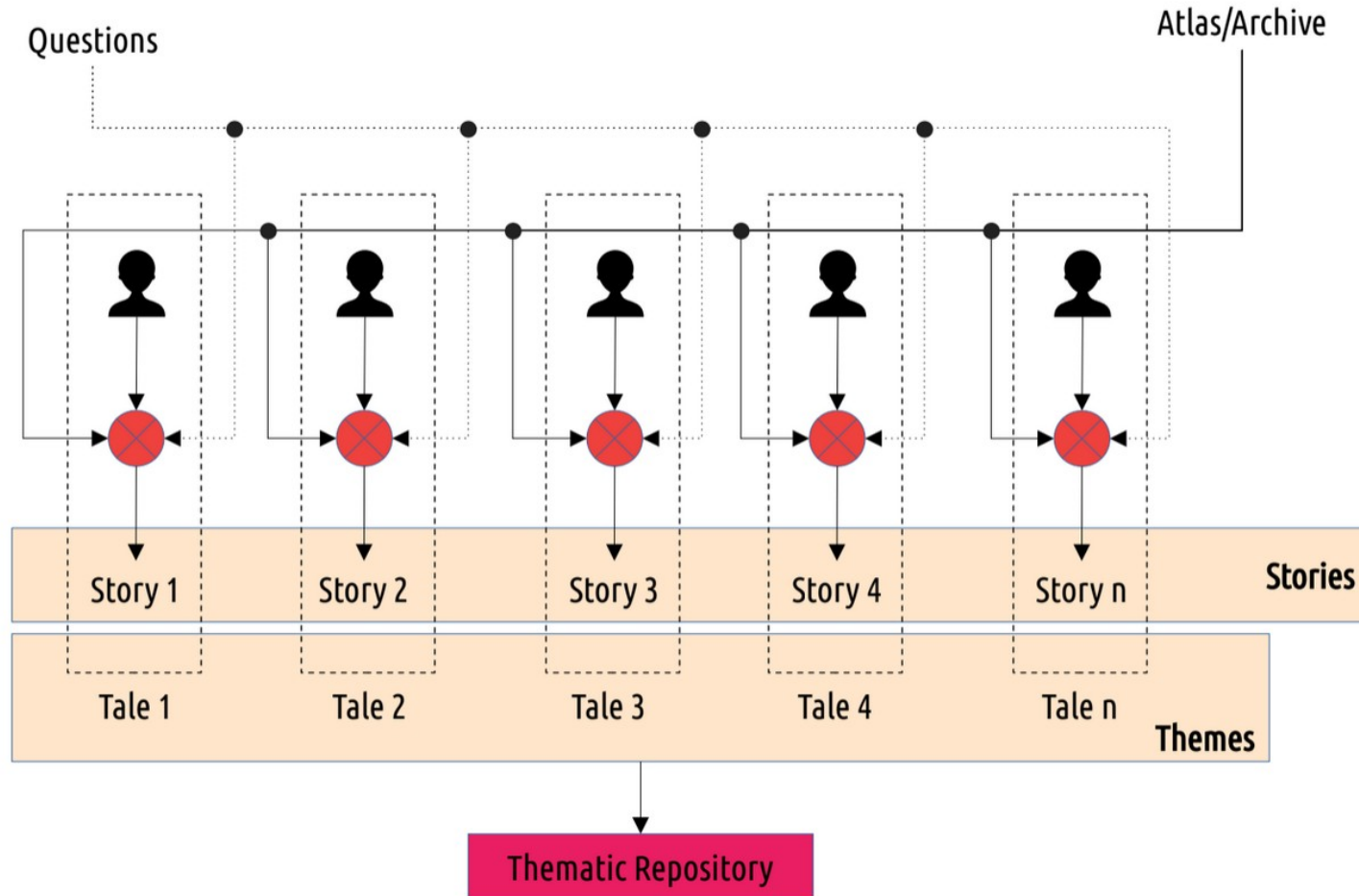
Conception based on grounded learning experience



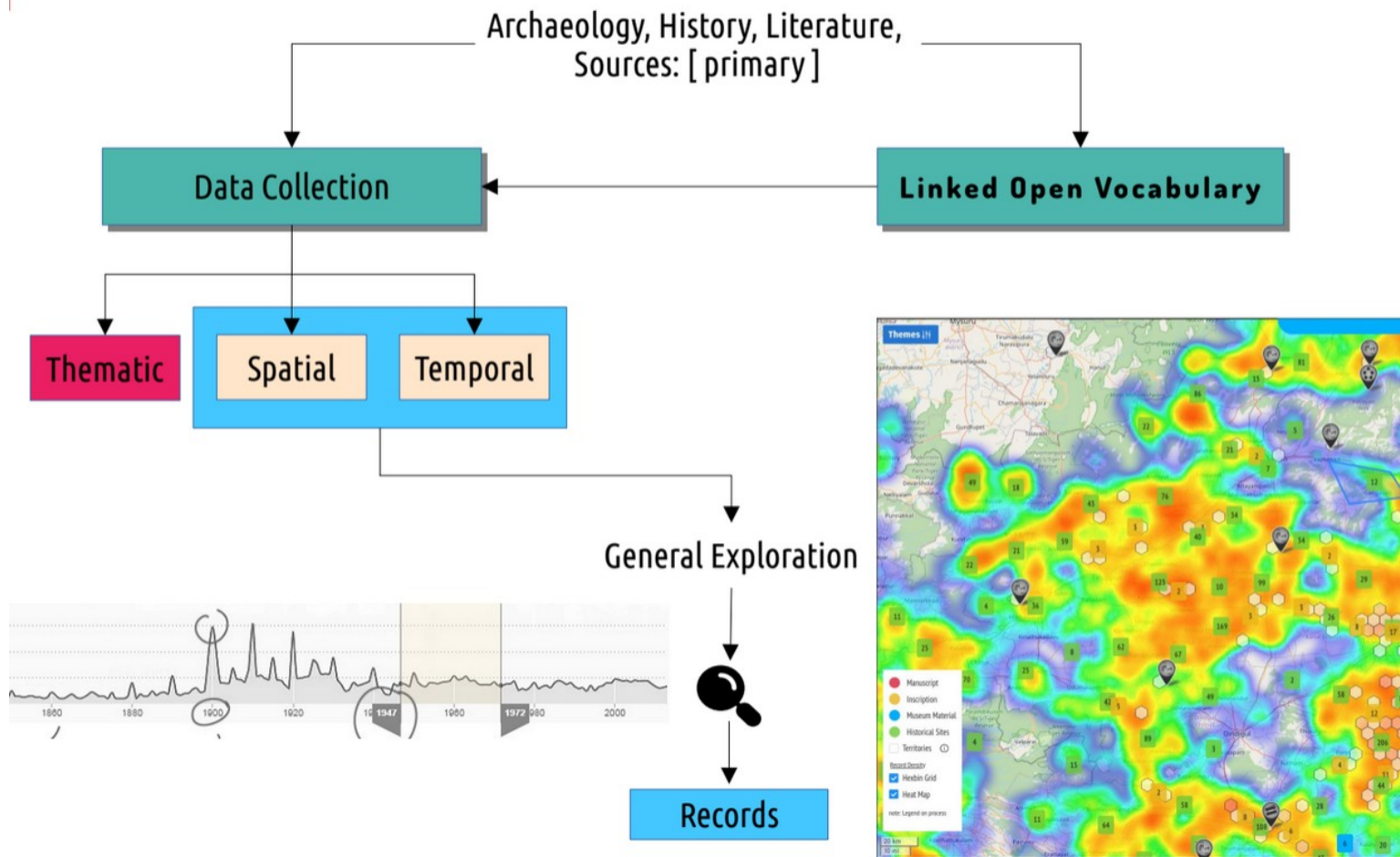
Perspectives to approach archiving resources changes when

- absence, silence, gaps, erasures are given importance
- practitioners, and readers of archive to connect, engage collaboratively
- generalizing based sparse records is avoided – thus healthier skepticism
- cataloging, categorizing is not made with protocols for information organization alone

Technological facilitation for collaboration



Technological facilitation for collaboration





QUESTIONS/DISCUSSION

