



ANNAMALAI UNIVERSITY

Department of Geology.

Particulars called for by the University Grants Commission in their letter No. F.13-13/55 (S&T) dated 2-7-1955 in connection with the development plans submitted by the University under the Second Five Year Plan, for the development of higher Scientific education and Research.

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1. Name of teachers and their special lines of work.

PROFESSOR.

Name: T.<sup>N</sup>. Muthuswami, M.A., F.A.Sc.,

Academic Qualifications: B.A.(Hons.) Geology - I rank in the Presidency - 1921.

M.A. Degree in 1922 - L.T. 1925.

Teaching experience: 32 years guided M.Sc. research for 11 years as Professor of Geology, Presidency College, Madras - 1941-1953.

Research Experience: Petrological research - Published the papers mentioned under Item (3)

LECTURER.

Name: N. Rajagopalan, M.Sc.,

Academic qualifications: M.Sc. II class - 1947 - Banaras Hindu University.

Teaching experience: 8 years to degree students in Engineering and 2 years to B.Sc. Geology students.

Research experience: Done Palaeontological research as M.Sg. student; the results of those investigations were submitted in the form of a thesis in part fulfilment of the M.Sc. degree examination.

2. Number of students.

III B.Sc.

IV B.Sc.

Number of students at present on the rolls.

6

6

3. Research work and papers published:

Being a new department started in the year 1953. so far no research work has been undertaken due to lack of accommodation, the equipment for Petrological research has been obtained recently.



4. Details of schemes for which grant is asked for.

The following scheme is proposed to develop the Department:-

1. The present staff is to be strengthened by the addition of two staff members - One Additional Professor and one Additional Reader. This would give relief to the staff members at present overworked (7 staff members at present have to do 110 hours of work per week besides several special classes to cover the portions satisfactorily) and given them leisure to do advanced study and research in addition to routine teaching. Financial implication Rs. 15,000 per annum.

2. Two senior scholarships of the value of Rs. 200/- per mensem in addition to the present two Junior scholarships to enable research scholars who show promise to continue their work and take their doctorate degree. Financial implications Rs. 4,800/-.

3. To improve the Library, a non-recurring grant of Rs. 10,000/- may be provided for the purchase of back volume of journals and advanced books. Also a recurring grant of Rs. 1,000/- to subscribe for new Journals in addition to the fifty old journals at present subscribed for from the regular University allotment every year (assuming that this latter amount would always be available).

All the proposals are new.

Financial implications (for 3) Rs. 1,000/- (R.)

5. Annual Budget of the Department.

	<u>Central Govt.</u>	<u>State Govt.</u>	<u>University.</u>
		No special grant from the State Govt. except the annual Statutory grant paid as a whole for the University.	
1951--52			40,604
1952--53	* 5,000		32,820
1953--54	* 5,000		27,300
1954--55	-		33,610
1955--56			31,400

\* Grants utilised for the purchase of Books and Back volumes of journals.

Abstract of financial implications of the proposals.

	<u>Non-Recurring.</u>		<u>Facilities already available.</u>
	<u>For Teaching</u>	<u>For Research</u>	
a) Buildings & services including Electricity	Nil	Nil	The Mathematics Library is fairly well equipped for higher study and research in all branches (Pure, applied & Mathematical Statistics)
b) Equipment & apparatus	-	-	
c) Library Books.	-	10,000	
Total		10,000	



2. Number of students.

1. Ph.D - Two staff members (see information given in column 1.)
2. M.Sc. - Two candidates at present (two others, Govt. of India Junior Research scholars have already taken their M.Sc. Degree by Research since 1950)
  - i. Sri S. Swetaranyam - Govt. of India Junior Research Scholar since Nov. 1954.
  - ii. Sri K.R. Nagarajan - working on his own account for the M.Sc. Degree by Research.
3. B.Sc. Hons - 12 students in the final year, 7 students in the IV year Honours and 10 in the III year Honours.
4. B.Sc. Pass - 13 students in the final B.Sc.(1955-56)
5. Research Scholars and Fellows - No research scholars at present other than (i) and (ii) and 2 above.

3. Research work and Papers published.

Since 1950, the Professor and the first batch of two Government of India Junior Research scholars under his guidance have been interested in the application of modern methods of Functional Analysis (Topology, Function Spaces Modern Algebra) etc. to classical problems like summation of divergent series, the space of Integral Functions etc. and some measure of success has been achieved as may be seen from the title of the papers published detailed below. The two research scholars mentioned above (Sri M.R. Parameswaran and Sri M.S. Ramanujam) who have finished their term and continuing their work in the same field in the Ramanujam Institute at Madras. The professor continues to work on the same lines. Two research scholars mentioned in column 2 are working, one on Theory of numbers and the other on Modern Algebra.

Papers published since Jan. 1950.

1. On the Space of Integral Functions - II quarterly Journal of Math. (Oxford) (3) Vol. 1 (1950) pp.86-96 (V. Ganapathy Iyer)
2. On the space of Integral Functions - III - Proc. American Math. Soc. Vol.3 (1952) pp.874-883 (V. Ganapathy Iyer)
3. A Note on the Linear space Generated by a Sequence of Integral Functions. Jour. Indian. Math. Soc. Vol.17 (1953) pp.183-85 (V. Ganapathy Iyer)
4. Some Converse Theorems of Summability, Proc. Indi. Acad. Sci. Vol.36 (1952) pp.363-369 (M.R. Parameswaran)
5. Series to Series Quasi-House droff Transformations - Jour. Ind. Math. Vol. 17 (1953) pp.47-55 (M.S. Ramanujam)
6. On Summability methods of type M.Proc. Lond. Math. Soc. Vol.29 (1954) pp.184-89 (M.S. Ramanujam)



ANNAMALAI UNIVERSITY

Department of Mathematics

Particulars called for by the University Grants Commission in their letter No. F.13-13/55 (S&T) dated 2--7--1955 in connection with the development plans submitted by the University **under the Second Five Year Plan**, for the development of Higher **Scientific Education and Research**.

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1. Name of teachers and their special lines of work.

PROFESSOR:

Dr. V. Ganapathy Iyer, M.A., D.Sc.,  
20 years of teaching experience in all University classes.

Research: 23 years of research record; has published about 40 papers in Mathematical Journals of International Standing, Indian and foreign.

Special fields of work: Classical Analysis - Function Theory and Infinite Series, Point Set Topology and Functional Analysis. Besides, can give guidance in research in practically all branches of Mathematics, pure or applied.

READER: Vacant at present.

LECTURERS:

1. Sri G. Sankaranarayanan, M.Sc.  
10 years of teaching experience in all University classes.

Research: Specialising in Mathematical Statistics - has registered for the Ph.D. Degree of the University.

2. Sri N. Ganesan, M.A - Five years of teaching experience in all University classes.

Research: Has recently begun to specialise in Modern Algebra - will be registering for Ph.D. this Academic year.

3. Sri N. Gopalan, M.A - 5 years of teaching experience in all University classes.  
Has been specialising in Applied Mathematics.

4. Sri K.S. Padmanabhan - 3 years of teaching experience in all University classes.

Research: Has been specialising in Function Theory.

5. Dr. N. Padma, M.A., Ph.D. - 2 years of teaching experience.

Research: Has specialised in Tensor Calculus - has published about six papers.

4. Sri Pl. Kannappan - B.Sc.(Hons.) Has just joined the staff after taking his Honours degree examination in April 1955.

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இப்படி

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14. Krishnamurthi S. Raghavan N. 1953 Useful Trees for the Nilgiris, Horticultural and Economic Plants of the Nilgiris.
15. Krishnamurthi S. 1953 Miscellaneous Economic Plants in the Nilgiris, Horticultural and Economic Plants of the Nilgiris.
16. Krishnamurthi S. 1954 Mango-In other countries, The Mango, Department of Agriculture, Hyderabad.
17. Krishnamurthi S & Subramanian D. 1954 Comparative efficacy of 3 plant growth regulators when applied as water ~~sp~~ sprays to increase the fruit-set in brinjals, Proc. Ind. Sci. Con. Abst. 41: 252
18. Krishnamurthi S & Subramanian D. 1954 Some studies on the Effect of the 2,4- dichlorophenoxyacetic acid in Hastening the Maturity of Brinjals and Increasing Fruitset, S.Ind. Hort. 1: 125-128.
19. Krishnamurthi S & Subramanian D. 1954 Effect of 2,4-Dichlorophenoxyacetic acid on Solanummelongena, L.Corr. Sci. 23;125
20. Krishnamurthi S & Subramanian D. 1954 Some Investigations on the types of Flowers in Brinjal Solanun Melongena Based on Style Length, and their fruit-set under Natural conditions and in Response to 2,4-dichlorophenoxy acetic acid as a plant Growth Regulator. Ind. J.Hor.11;63-67-
21. Krishnamurthi S. & Subramnian D. 1954 Effect of 2,4-dichlorophenoxyacetic acid on 3rd to 5th culsters of tomato, Sci. & Cult. Vol. 20
22. Krishnamurthi S & Srinivasan K.M. 1954 Recent advances in Agriculture: Growth Regulators as Weed Killers. Madras Agri. Jour. Vol. XLI
23. Krishnamurthi S & Srinivasan K.M. 1954 Some Studies of 2,4-D toxicity in soils in Herbicidal concentrations. M.A.A. Vol. CLI p. 59-63.

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ANNEXURE I.

List of papers published.

1. Krishnamurthi S. 1950 Nutrition in Relation to Yield, Quality and Certain Diseases in Citrus, Planters' Chronicle
2. Krishnamurthi S. 1951 Correlation of rainfall with success in certain propagational operations in roses, Proceedings of the Scientific Workers' Conference held at Agricultural College and Research Institute, Coimbatore.
3. Krishnamurthi S & Muthukrishnan C.R. 1953 General Performance of Some Improved Strains of Paddy at the University Experimental Farm in 1952-53, Journal of Annamalai University Vol. XVIII.
4. Krishnamurthi S & Muthukrishnan C.R. 1953 Some Preliminary Observations on Zinc Phosphide for Rat Control in the Annamalai University Agricultural Extension Farm, Annamalai University Journal. Vol. XVIII.
5. Krishnamurthi S. & Sampath V. 1953 Eucalyptus on the Nilgiris (with notes on 34 species), Horticultural and Economic Plants of the Nilgiris.
6. Krishnamurthi S. 1953 Vegetables of the Nilgiris, Horticultural and Economic Plants of the Nilgiris.
7. Krishnamurthi S. 1953 Fruits of the Nilgiris Hills (Excluding Citrus), Horticultural and Economic Plants of the Nilgiris.
8. Krishnamurthi S. 1953 Citrus in Nilgiris - with Particular Reference to Kukal Oranges, Horticultural and Economic Plants of the Nilgiris.
9. Krishnamurthi S & Sampath V. 1953 Some Wild Fruits of the Nilgiris, Horticultural and Economic Plants of the Nilgiris.
10. Krishnamurthi S 1953 Medicinal Plants in the Nilgiris, Horticultural and Economic Plants of the Nilgiris.
11. Krishnamurthi S. 1953 Spices and Condiments in the Nilgiris, Horticultural and Economic Plants of the Nilgiris.
12. Krishnamurthi S. 1953 Essential Oil Plants in the Nilgiris, Horticultural and Economic Plants of the Nilgiris
13. Krishnamurthi S. 1953 Food Plants in the Nilgiris, Horticultural and Economic Plants of the Nilgiris.



B.F. 7,00,000

6. Library books (cost of only specialised books - General library contains other common agricultural books) ..	Rs.	20,000
7. Cattle ..		5,000
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Total value of facilities available	Rs.	7,25,000
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Abstract of financial commitments.Non-recurring.

	<u>For teaching</u>	<u>For research</u>
1. Buildings & furniture	7,90,700	60,000
2. Equipment	2,46,000	-
3. Books	1,00,000	-
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	11,36,700	+ 60,000 = 11,96,700
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Recurring - Per year

	<u>Teaching</u>	<u>Research</u>
For staff	1,14,600	5,600
Scholarships	9,600	-
Any other items ..	1,07,000	-
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Total Rs.	2,31,200	+ 5,600 = 2,36,800
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(Sd.) S. Krishnamurthi  
Professor and Head of the Department  
of Agriculture.

Forwarded to the University Grants Commission, having  
been approved by the University authorities concerned.

Annamalai University,  
Annamalainagar,  
27th July, 1955.

*M. Venkatesan*  
For Registrar.



IV. Introduction of the Professional B.Sc. Ag. degree course.Non-recurring

a) <u>Building:</u>	
i) Class rooms, offices, laboratories etc.	4,50,000
ii) Cattle yard manurepits, implement shed, godown, farm office etc. ..	75,000
iii) Fencing of farm minor structure, wells etc.	25,000
iv) Furniture for laboratory etc. ..	25,000
b) <u>Equipments.</u>	
i. Equipments, fittings, etc. for laboratory ..	75,000
ii. Tractors etc. ..	50,000
iii. Livestock and birds ..	50,000
c) Library books etc. ..	50,000
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Total non-recurring Rs.	8,00,000
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Recurring.

1. Salary and allowance of staff (1 professor, 4 readers, 7 lecturers, 4 demonstrators etc.) ..	3,25,000
2. Scholarships ..	--
3. Any other specific items:	
i. Cultivation and maintenance expenses of farm gardens, livestock etc. ..	3,00,000
ii. Laboratory and chemicals etc.	75,000
iii. Office and other contingencies travelling allowance of staff etc.	1,00,000
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Total recurring Rs.	8,00,000
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Facilities already available for all these developments.

1. 250 acres of land, valued at the existing market rate of Rs. 2,000/- per acre (with wells, pumpset etc.) ..	5,00,000
2. Orchard area with the cost of its establishment .. ..	25,000
3. Existing buildings of the Department	50,000
4. Cattle shed ..	5,000
5. Laboratory and other equipments ..	1,20,000
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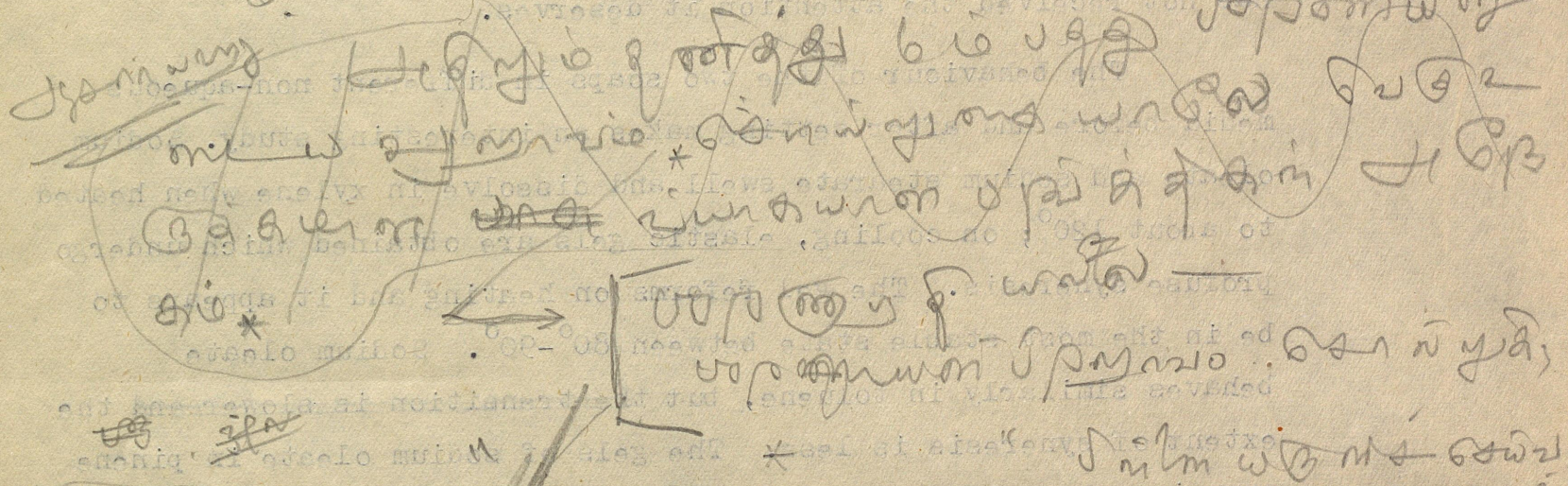
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# Crystallization of Solids by Cooling

The various factors which influence the rate of crystallization of a solid from a solution have been discussed by

Tracy and others (7) to take place as follows: The solution

involved in the crystallization of a solid from a solution is a

in the solution of a solid system in the non-solvent media dealt with

in this investigation. ~~Crystallization of a solid from a solution~~

solvent is a true solution at its boiling point. ~~Crystallization of a solid from a solution~~

both these cases are treated in the same manner. ~~Crystallization of a solid from a solution~~

when a solid is dissolved in a liquid in the form of a non-solvent

media is cooled gradually, separation of the solid is caused by the

reduction in the solubility of the solid in the liquid. ~~Crystallization of a solid from a solution~~

crystallization of the solid from the pure solvent

as the dispersion medium. ~~Crystallization of a solid from a solution~~

It has been observed that in the case of a solid which

produces either crystallization of the solid from the solution

or micro-crystals of the solid in the dispersion medium, or (iii)

the formation of a true solution. ~~Crystallization of a solid from a solution~~

cases dealt with in this paper, it would be true that the very large

crystals which are formed in the case of a solid which crystallizes

from a true solution are of a much larger size than those which

form in the case of a solid which crystallizes from a dispersion

medium. ~~Crystallization of a solid from a solution~~

and further cooling would result in the formation of smaller and

more numerous particles. ~~Crystallization of a solid from a solution~~

of a solid from a dispersion medium gradually thickens due to the

degree of freedom of these individual particles which leads to the

formation of a true solution. ~~Crystallization of a solid from a solution~~

at the point where the system does not move from the solid to the

state, a stage when the system reaches its maximum activity.

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ಪ್ರವೇಶನ ಮುಕ್ತಾಯ ಅರ್ಥ:

1) ಸಾ. ಪರಿವಾರ ಪರಿಶೋಧನೆ ನಮಗೆ ದೀರ್ಘಕಾಲದಿಂದಲೂ  
 ಪರಿಶೋಧಿಸುತ್ತಿದ್ದೇವೆ.

2) ಸಾಂ ಪರಿವಾರ ಪರಿಶೋಧನೆಗೆ ದೀರ್ಘಕಾಲದಿಂದಲೂ

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ಪರಿಶೋಧನೆ  
 ಸಾಂ ಪರಿವಾರ

3) ಸುಖ : ಸುಖಕರವಾದ ವಾತಾವರಣದಲ್ಲಿ.

ಪರಿಶೋಧನೆಗೆ ದೀರ್ಘಕಾಲದಿಂದಲೂ

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The gel-strength can be measured either from the slope of the straight lines which converge to a point, or by comparing the loads required for the same deflection. The values of gel-strengths were calculated from the slopes of the load-deflection curves shown in Figs 2 and 4, that is, when the plunger is placed inside the gel, and are given in the following table.

TABLE II.  
Values of Gel-Strength (arbitrary units)

Soap content (in g.)	Flat-ended plunger	Hemispherical plunger
0.05	0.75	0.75
0.08	1.75	1.50
0.10	2.75	2.20
0.15	3.75	2.80

The above results show that the gel-strength increases as the soap content of the gels is increased; the slight variation in the actual values when the two types of plungers are used is mainly due to the fact that when the hemispherical plunger is acting, the micelles get more opportunity <sup>to</sup> ~~of~~ orientate themselves in such a way as to reduce the resistance and to increase the strain, and hence the gel-strength values are slightly smaller. Although it is an anomaly to say that a physical property like elasticity is different when different methods are used, it is not surprising to find such a behaviour in these gel systems where the binding forces between the micelles are of such a small order as could be destroyed by mere mechanical agitation.

Poole ~~&~~  $\neq$  and others have found that the plots of the logarithm of elasticity or gel-strength (E) against the logarithm of the concentration (C) are approximately straight lines in several cases, and the value of the slope does not exceed 2. On plotting the values of log E against log C, obtained from the data given in Table II, it was found that the several points lie very

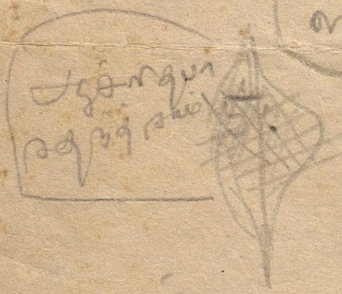
0. ପ୍ରଥମ ସମସ୍ୟା ଓ ଦ୍ୱିତୀୟ ସମସ୍ୟା ଉପରେ  
କାର୍ଯ୍ୟ କରିବା ପାଇଁ ଆମେ ଏହିପରି କରୁଛୁ:  $\frac{1}{2}$  ଓ  $\frac{1}{3}$  ଉପରେ କାର୍ଯ୍ୟ କରିବା।

1. ପ୍ରଥମ ସମସ୍ୟା:  $\frac{1}{2}$  ଓ  $\frac{1}{3}$  ଉପରେ କାର୍ଯ୍ୟ କରିବା।  
ଉଦାହରଣ:  $\frac{1}{2} + \frac{1}{3} = \frac{3}{6} + \frac{2}{6} = \frac{5}{6}$

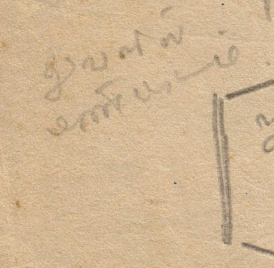
2. ଦ୍ୱିତୀୟ ସମସ୍ୟା:  $\frac{1}{4}$  ଓ  $\frac{1}{5}$  ଉପରେ କାର୍ଯ୍ୟ କରିବା।  
ଉଦାହରଣ:  $\frac{1}{4} + \frac{1}{5} = \frac{5}{20} + \frac{4}{20} = \frac{9}{20}$

3. ତୃତୀୟ ସମସ୍ୟା:  $\frac{1}{6}$  ଓ  $\frac{1}{7}$  ଉପରେ କାର୍ଯ୍ୟ କରିବା।

4. ଚତୁର୍ଥ ସମସ୍ୟା:  $\frac{1}{8}$  ଓ  $\frac{1}{9}$  ଉପରେ କାର୍ଯ୍ୟ କରିବା।  
ଉଦାହରଣ:  $\frac{1}{8} + \frac{1}{9} = \frac{9}{72} + \frac{8}{72} = \frac{17}{72}$



5)  $\frac{1}{10}$  ଓ  $\frac{1}{11}$  ଉପରେ କାର୍ଯ୍ୟ କରିବା।  
ଉଦାହରଣ:  $\frac{1}{10} + \frac{1}{11} = \frac{11}{110} + \frac{10}{110} = \frac{21}{110}$



ଉଦାହରଣ:  $\frac{1}{12} + \frac{1}{13} = \frac{13}{156} + \frac{12}{156} = \frac{25}{156}$

ଉଦାହରଣ:  $\frac{1}{14} + \frac{1}{15} = \frac{15}{210} + \frac{14}{210} = \frac{29}{210}$

18.  $\frac{1}{16} + \frac{1}{17} = \frac{17}{272} + \frac{16}{272} = \frac{33}{272}$

19.  $\frac{1}{18} + \frac{1}{19} = \frac{19}{342} + \frac{18}{342} = \frac{37}{342}$

4)  $\frac{1}{20} + \frac{1}{21} = \frac{21}{420} + \frac{20}{420} = \frac{41}{420}$

5)  $\frac{1}{22} + \frac{1}{23} = \frac{23}{506} + \frac{22}{506} = \frac{45}{506}$

6)  $\frac{1}{24} + \frac{1}{25} = \frac{25}{600} + \frac{24}{600} = \frac{49}{600}$

10) ... ..

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11 ... .. (110)

Dr. Sir. K.S. Krishnan, D.Sc., F.R.S.  
3. Khushak Road.  
NEW DELHI.

K 72







தமிழ் 2-வாசலா படிப்பு "தமிழ்"  
தான் படி. ஆனால் புத்தகம் தான் தான்  
~~படிப்பது~~ ~~தமிழ் பாட~~ ~~படிப்பது~~

~~தமிழ்~~ ~~படிப்பது~~ ~~படிப்பது~~

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A.4, 5, 5  
p.51

செய்தியை யாது அறிவு பெறுதல் என்ன  
முதிர்ச்சியைக் கொடுக்க  
என்று என்ன பொருள் உடையது  
என்று

அவ்வாறு நன்கு யின் ஸார்வதிக்  
ஸார்வதிக் என்னுடைய செயல்  
கொண்டே என்ன கருது. இம்  
பொருள் உடையது என்னுடைய செயல்

அவ்வாறு நன்கு யின் "அறிவு பெறுதல்" என்பது  
நன்றி செய்தல் என்பது உடையது என்பது என்பது என்பது  
என்று என்னுடைய செயல், ~~என்று~~ பொருள்

அறிவு பெறுதல் என்பது "என்பது என்பது" என்பது  
என்பது என்பது என்பது என்பது என்பது என்பது  
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யின் பொருள் என்பது. இப்பொருள்  
ஸார்வதிக் ஸார்வதிக் அதுபலிப்  
பெறும்படி கருதுகின்ற கருதுகின்ற  
அதுபலிப்பெறும்படி பொருள்  
என்று என்னுடைய செயல் உடையது  
யின் பொருள் அறிவு பெறுதல் என்பது  
கொடுக்கின்றது.

~~இப்பொருள் என்பது என்பது என்பது  
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கொண்ட - - - - - உடையிலேயே " எ  
என்று கொண்டிருக்கிறது யே எம் பெருமை  
என்றும் உடையிலேயே ~~உடையிலேயே~~  
உடையிலேயே ~~உடையிலேயே~~ ~~உடையிலேயே~~  
வினா ~~உடையிலேயே~~ ~~உடையிலேயே~~ ~~உடையிலேயே~~

8/128 p.100  
பி.சி

அங்கம் ~~உடையிலேயே~~ ~~உடையிலேயே~~ ~~உடையிலேயே~~  
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17-4-55  
பி.சி

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9.3.14

உடையிலேயே ~~உடையிலேயே~~ ~~உடையிலேயே~~ ~~உடையிலேயே~~  
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1. ~~Time~~ ~~செய்யும்~~ ~~கருவிகள்~~  
~~பின்னரே~~ ~~செய்யப்படும்~~

5) ~~செய்யும்~~ ~~பகம்~~ ~~கண்பு~~, ~~கண்பு~~ ~~பகம்~~ ~~கண்பு~~  
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3348 ① [கருவியும் பகமும் கண்பும் பகமும் கண்பும்  
 கண்பும் பகமும் கண்பும்

3349 ② கண்பும் பகமும் கண்பும்

3230 ⑦ கருவியும் பகமும் கண்பும்

3198 ⑥ பகமும் கண்பும்

541 ② 2nd பகமும் கண்பும்

③ கருவியும் பகமும் கண்பும்

④ கருவியும் பகமும் கண்பும் 2nd பகமும் கண்பும்

3452 (கண்பும் பகமும் கண்பும்)

3315 ⑧ [கருவியும் பகமும் கண்பும்]

3224 ⑨ கருவியும் பகமும் கண்பும்

3316 ⑩ பகமும் கண்பும்



Handwritten notes in a circular arrangement on the left side of the page, including the word "பெரிய" (Peyyir) and other illegible characters.

Handwritten text in Tamil script, consisting of approximately seven lines. The text is partially obscured by a large, horizontal crease across the middle of the page. The visible text includes words like "பெரிய", "பெரிய", "பெரிய", "பெரிய", "பெரிய", "பெரிய", "பெரிய".