

M54

THE EDUCATIONAL REVIEW

A Monthly Record for India.

Vol. XXXIII.]

OCTOBER 1927.

CONTENTS.

	PAGE
ATOMIC STRUCTURE OF THE UNIVERSE. By Mr. P. A. NARAYANA AIYAR, M.A., L.T., Additional Professor of Chemistry, Presidency College, Madras...	555
THE TEACHER: HIS REMUNERATION AND HIS RESPONSIBILITY. An Address delivered by Mr. M. R. PARANJPE, M.A., B. Sc., Poona ...	559
THE IDEAL SCHOOL. By Mr. N. G. NATH, M.A., L.T., Headmaster, Rani Suryapal Kunwar High School, Mirzapur.	564
THE ARTISTIC VALUE OF PRESENT-DAY ENGLISH FICTION. By Mr. L. V. RAMASWAMI AIYAR, M.A., B.L., Maharaja's College, Ernakulam (Cochin State) ...	568
WHO IS THE BEST TEACHER? By Mr. S. NATESA IYER, B.A., L.T., Lecturer, Maharaja's College, Pudukotah.	572
IN THE CHILDREN'S WORLD—IV. LESSONS FOR INFANTS, MORE SENSE TRAINING EXERCISES. By Mr. S. JAGANNADHAN, Kindergarten Assistant, Teachers' College, Saidapet ...	579
A FEW RECENTLY PUBLISHED LATIN TEXT-BOOKS. By Mr. L. V. RAMASWAMI AIYAR, M.A., B.L., Maharaja's College, Ernakulam (Cochin State).	587

	PAGE
REVIEWS AND NOTICES ...	589
Teachers of India, by C. A. Kincaid, C.V.O., I.C.S.; An Introduction to the Calculus, by C. V. Durell, M.A., and R. M. Wright, M.A.; Elementary Practical Chemistry, by E. J. Holmyard; Science through the Ages, by Marion Florence Lansing; Chemistry, by W. H. Barrett, M.A.; Magnetism and Electricity, by Jude and Satterly, in two volumes: Manipulation and Senior; Heat and Light, by E. Nightingale; The Chemical Elements and their Compounds, by J. A. G. Reilly; The Sacrament of Nature, by John S. Hoyland; Composition for Upper Classes, by Ed. J. S. Lay and Ella Bray; Episodes from the Sea and the Jungle. (Harrap's Readers of To-day), by H. M. Tomlinson.	
MADRAS UNIVERSITY LIBRARY—LATEST ADDITIONS ...	592
LIST OF RECENT ADDITIONS TO THE CONNEMARA PUBLIC LIBRARY ...	594
EDITORIALS ...	595
The Madras Senate; The Benares Hindu University; The Bombay University; The Agra University; Indian Students in England; Secondary Education in Bombay; Evening Schools in Germany; The Andhra University; Indian Art; Education in the United Provinces; The All-India Teachers' Federation.	

Annual Subscription inclusive of Postage, Rs. 5.
Half-yearly Subscription, Rs. 3.

MADRAS:
SRINIVASA VARADACHARI & CO.
[All Rights Reserved.]

Foreign Subscription inclusive of Postage, Rs. 6.

Approved as a Text-Book suitable for School use.
vide Fort St. George Gazette, Part I-B, p. 545, dated 1-11-'27.

A PREPARATORY ALGEBRA

Prepared in accordance with the Syllabus in Optional Mathematics
(C. Group) for the Madras S. S. L. C. Public Examination

BY V. RAGHUNATHA AIYAR, B.A., L.T.,

Dy. Inspector of Schools, Tirukurugudi Range (Tinnevely Dt.); author of 'A Course of General Mathematics.'
D. Cr. 600 pages with 49 diagrams. Price Rs. 2.

OPINIONS.

RAO BAHADUR P. V. SESHU AIYAR, B.A., L.T., Retired Principal, Govt. College, Kumbakonam, writes:—"I am glad to find that 'A Preparatory Algebra' by Mr. V. Raghunatha Aiyar, B.A., L.T. (published by Srinivasa Varadachari & Co.) is well planned and written very carefully so as to meet the requirements of pupils in the S. S. L. C. classes for whom it is mainly intended. The expositions and illustrations are clear and lucid and there is a good collection of nice examples and exercises. The appendices A and B are really well-written and add much to the usefulness of the book. * * * I hope the book will meet with the encouragement it well deserves."

Mr. A. TIRUVENKATATTAYANGAR, B.A., L.T., Headmaster, O. R. U. High School, Puzoswalam, Madras, writes:—"Mr. V. Raghunatha Aiyar, B.A., L.T., has laid the student population under obligation by his Preparatory Algebra. The plan of the book is commendable. The chapter on Directed Numbers is in its proper place and is well written. What a student will find of greatest value in the book is the large collection of exercises following theorems. There are a few typographical errors, which, it is hoped, will be removed in a subsequent edition. The book is a useful addition to the books on High School Algebra and will supply a real want."

CONTENTS.

I. The Use of Symbols:—The use of symbols as mathematical shorthand. Some additional symbols in common use. The Formula, how derived and used. Exercises; II. Some Fundamental Laws:—Addition and Subtraction. Removal of Brackets. Insertion of Brackets. Multiplication and Division. The Laws of Indices. Order of Operations. Exercises; III. Symbolic Solution of Problems:—The extended application of the Formula. The Laws of Equality. Reversibility of Steps. Verifying the correctness of result by substitution. The Solution of Problems by means of Equations derived from them. Exercises; IV. Graphical Representation:—Variables and Constants. Dependence of one variable upon another. Graphical Representation. Representation of values by marking points. The Graph. Readings from the Graph. Limitations of the Graph. A few points to be observed in graphical representation. Magnifying portions of a Graph. Exercises; V. Directed Numbers:—Directed numbers, their meaning and diagrammatic representation. Extended application of Directed Numbers. The New Number-Scale and its Study. The Four Fundamental operations applied to Directed Numbers—Addition, Subtraction, the Laws of Addition and Subtraction, Multiplication, Division. Some Laws of Multiplication and Division. Application of the Laws of Equality to operations involving Directed Numbers. Algebraic Form. Exercises; VI. Algebraic Expressions and a few Elementary processes:—Distinguishing expressions from the number or terms. Distinguishing expressions by means of their degrees. Exercises. Addition and Subtraction by Polynomials. Brackets. Exercises. Long Multiplication. Exercises. Long Division. Exercises; VII. Special Products. VIII. Factors and Multiples:—The Use of Factors. Factorising expressions of the form $Nx + Ny + Nz$. Exercises. Factorising by convenient grouping of terms. Exercises. Factorising expressions of the type $x^2 + 2xy + y^2$ and $x^2 - 2xy + y^2$. Exercises. Factorising expressions of the type $x^2 - y^2$. Exercises. Factorising expressions of the type $x^2 + px + q$. Exercises. Alternate method of factorising $x^2 + px + q$. Exercises. Factorising expressions of the type $Ax^2 + Bx + C$. Exercises. Highest Common Factor. Exercises. Least Common Multiple. Exercises; IX. Fractions:—The Algebraic Fraction. The Principle of Equivalent Fractions. Application of the above principle—Reducing a fraction to its lowest terms. Exercises. The sign of a fraction and the sign of its terms. Exercises. Expressing fractions with a common denominator. Addition and Subtraction of Fractions. Exercises. Multiplication of Fractions. Division of Fractions. Simplification of Fractions. Complex Fractions. A Continued Fraction. Exercises; X. Graphs:—Function of a Variable. Plotting. Exercises. The Straight Line Graph. Reading from the Graph. Study of Variation from the Graph. Graph as a Reckoner. Graph as a Locus. Choice of Scales to be adopted. Exercises. Graphical Interpretation of the Constants m and c in the Linear Relation $y = mx + c$. Graphical method of determining the Constants in a Linear Law. Exercises. Locus Graphs. The Shape of the Graph. Symmetric Properties. Study of Variation from the Graph. Graph as a Ready-Reckoner. Note on the Choice of Scales. Graph as a Locus. Exercises. Geometric applications; XI. Simultaneous Equations and their Applications:—Notion of an Indeterminate Solution. Notion of Simultaneous Equations. Handy methods of solving simple simultaneous equations in two unknowns. Exercises. Applications. Determining Constants in a Linear Law. Exercises. Problem—Solution by means of Simultaneous Equations. Exercises. Simple Simultaneous Equations in three unknowns. Exercises; XII. Quadratic Equations and Problems:—A Quadratic Function. A Quadratic Equation. Solution of Quadratic Equations. Exercises. Applications. Evaluation from Formulae. Problems. Geometric Applications. Appendix A. Special Developments:—(a) Functional Notation; (b) The Method of Detached Coefficients; (c) Homogeneity and Symmetry in Functions; (d) The Remainder Theorem and its Corollaries; (e) Applications of the Principle of Undetermined Coefficients; (f) Factors; (g) Identities; (h) Square Root; (i) Equations—Solution. Appendix B. Miscellaneous Examples. Answers. Madras S. S. L. C. Examination Question Papers.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

Oct. 1927.]

ADVERTISEMENTS.

iii

Approved as a suitable Text-book for School use.
(Fort St. George Gazette, 24th July 1923, page 668).

TAMIL EDITION

A TEXT-BOOK OF ARITHMETIC

FOR LOWER SECONDARY OR MIDDLE SCHOOLS

BY
The late S. RADHAKRISHNA AIYAR, B.A.
Principal, Maharaja's College, Pudukotah.

AND
K. VAIDYANATHASWAMI AIYAR, B.A.
Retired Headmaster, Board (now Govt.) High School, Tiruvalur.

Prepared on the lines indicated by the syllabus in Elementary Mathematics recently prescribed
by the Director of Public Instruction, Madras, for Form I.

Part I-A—(Pages 240 + xvi). Price 12 as. 6 pies
Both the Parts in one volume Re. 1-10-0.

Contents.

அத்யாயம் I. எண்மாதிரி எண்முறை (முழு எண்): II. ஸாலிடிக்: பார்ப்பு: கோடுகள்: புள்ளிகள்: III. அளவைகளின் வரம்புகள்: IV. ஒரேயைக் கூட்டல்: V. கோடுகள்: VI. ஒரேயைக் குழித்தல்: VII. கோடுகள் (தொடர்ச்சி): VIII. கோடுகள் இலக்கங்கள்: IX. உத்தரவுகள் அவற்றின் அளவுகளும்: X. கோடுகளின் கோடுகள் உருவங்களும்: XI. அடைப்புக்குறிகள்: XII. ஊழியோடு துக் கணக்குப் பார்த்தல்: XIII. வட்டம் (முதல் பாகம்): XIV. காகிதம் மடித்தல்: காகிதம் வெட்டல்: XV. எண்மாதிரி எண்முறை (பின்னங்கள்): XVI. கால், அரை, மூன்றாவது கூட்டலும் குழித்தலும்: XVII. $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$ —குடியின் பின்னங்கள்: XVIII. அளவுகூடாவால் அளத்தல்: XIX. தசாம்சங்களின் கூட்டலும் குழித்தலும்: XX. அளவுகூடாவால் அளத்தல்: XXI. ஒரேயைப் பெருக்கல் (முதல் பாகம்): XXII. ரெட்டாங்கிள்களும் ரெட்டாங்குலர் ஸாலிடிக் களும்: XXIII. ஒரேயைப் பெருக்கல் (இரண்டாம் பாகம்): XXIV. காகித அட்டையால் மாடல்கள் செய்தல் (முதல் பாகம்): XXV. ஒரேயைக் குழித்தல் (முதல் பாகம்): XXVI. கால், அரை, மூன்றாவது, தசாம்சங்களும்: XXVII. எட்டின் அடிவைத்து அளத்தல்: XXVIII. ஒரேயைக் குழித்தல் (இரண்டாம் பாகம்): XXIX. சட்டப்பலகையும் கோடுகளும்: XXX. ஒரேயைக் குழித்தல் (மூன்றாம் பாகம்): XXXI. ஸாலிதி: XXXII. வரைபடங்களும் அளவுகூடாவால் அளத்தல்: XXXIII. பெருக்கல் குறியை விட்டுவிடுதல்: XXXIV. அக்டோகன் அட்டையின் உத்தரவுகள்: XXXV. யோஜனைக் கணக்குகள் (முதல் பாகம்): XXXVI. வேண்டிய அளவுகள் கோடுகளில் குழித்தல்: XXXVII. ஒற்றைப்படை எண்களும் இரட்டைப்படை எண்களும் தொடர்ச்சியான எண்களும்: XXXVIII. காரண எண்கள்: பகாசில எண்களும் பகுசில எண்களும்: XXXIX. காரண எண்களால் பெருக்கலும் வகுத்தலும்: XL. ஒரேயைப் பெருக்கல் (சுருக்கமான வழிகள்): XLI. ஒரேயை வகுத்தல் (சுருக்கமான வழிகள்): XLII. இனமாதிரி: XLIII. பலவினவெண் கூட்டல்: XLIV. பலவினவெண் குழித்தல்: XLV. பலவினவெண் பெருக்கல்: XLVI. பலவினவெண் வகுத்தல்: XLVII. யோஜனைக் கணக்குகள் (இரண்டாம் பாகம்): XLVIII. புள்ளிகள்: கோடுகள்: பார்ப்பு: ஸாலிடிக்: XLIX. கடைக்கணக்குகளும் வாடிக்கைக் கணக்குகளும்: L. வட்டம் (இரண்டாம் பாகம்): LI. தசாம்ச பின்னங்கள்: LII. மெட்ரிக் அல்லது F ரென்ட்ரீட்டைவைகள்: LIII. கோடுகளும் கோணங்களும்: LIV. கோணங்களும் அவைகளை அளத்தலும்: LV. அடுக்கும் அடுக்குக் குறியும்: LVI. அளவுகளும் மடக்குகளும்: LVII. கோணங்கள் வரைதல்: LVIII. அயல் கோணங்கள், எதிர் கோணங்கள் முதலியவை: LIX. உத்தரவு பொது அளவு: LX. அமர பொது மடக்கு: LXI. சதாங்கங்களும் கீட்ட சதாங்கங்களும் வரைதல்: LXII. பார்ப்புவுக்கும் அளவுக்கும்: LXIII. பின்ன வரைதல்: LXIV. சாதாரண பின்னங்கள்: LXV. பொருட் சட்ட சாதாரண பின்னங்கள்: LXVI. சமுச்ச என்னும் திசை காட்டும் குறியை: LXVII. Latitude and Longitude: LXVIII. ஒற்றை தருவிய முறை—பரிசுக்கோடுகள்.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

XXXIII—a

Approved for use in ALL Schools

(Both under Private and Public Management.)

PART I—22nd Edition—(1926). Price As. 12.**A TEXT-BOOK OF ARITHMETIC**

for Lower Secondary or Middle Schools

BY

S. RADHAKRISHNA AIYAR, B.A.

AND

K. VAIDYANATHASWAMI AIYAR, B.A.

This book which had long been recognised for use in Schools under private management and has passed through 20 big editions in about 24 years, is now recognised for use in Schools under public management also.

2. It has now been thoroughly revised and brought into line with the *Syllabus in Elementary Mathematics* recommended by the Director of Public Instruction, Madras, for Forms I, II and III of Secondary Schools, and will be found to be a most suitable and satisfactory Text-Book of **Elementary Mathematics** for Forms I, II and III of all Secondary Schools both in the Madras Presidency and in the Native States of Mysore, Travancore, Cochin, Hyderabad and Pudukota.

3. It will be issued in the present 21st edition and in all succeeding editions in two complete and independent parts written on the *Concentric System*, Part I being intended for Form I, and Part II for Forms II and III.

Contents of Part I.

Chapter I. Numeration and Notation. II. Arithmetical Tables. III. Lines: Right Angles Rectangles: Squares. IV. Graphic Representation of Numbers. V. The Fractions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$ and tenths. VI. Simple Addition. VII. Simple Subtraction. VIII. Measuring with the Tape. IX. Simple Multiplication. X. Simple Division. XI. Use of Brackets. XII. Expressions and Terms. XIII. Use of the Scale and Dividers. XIV. Averages. XV. Shortened Methods of Multiplication and Division. XVI. Problems on the Simple Rules. XVII. Use of the Set Square. XVIII. Areas of Rectangles and Squares. XIX. Cuboid and Cube. XX. Volumes of Rectangular Solids. XXI. Reduction. XXII. Compound Addition. XXIII. Compound Subtraction. XXIV. Compound Multiplication. XXV. Compound Division. XXVI. Problems on the Compound Rules. XXVII. Practice and Bazaar Transactions. XXVIII. Card-Board Modelling. XXIX. Odd, Even and Consecutive Numbers. XXX. Common Factors. XXXI. Division by Cancellation. XXXII. Use of Letters for Numbers. XXXIII. Unitary Method. XXXIV. Use of the Compasses. XXXV. Index Notation. XXXVI. Decimal Fractions. XXXVII. Straight Lines and Angles. XXXVIII. Metric Measures of Length. XXXIX. Use of the Protractor. XL. Resolution into Prime Factors. XLI. Measures and Multiples. XLII. Some Related Angles—(1) *Adjacent Angles*, (2) *Angles at a point*, (3) *Supplementary and Complementary Angles*. XLIII. Greatest Common Measure. XLIV. Least Common Multiple. XLV. Solids: Surfaces: Lines: Points. XLVI. Vulgar Fractions. XLVII. Drawing to Scale. XLVIII. Multiplication and Division of Compound Quantities by Fractions. XLIX. Reduction of Concrete Vulgar Fractions. L. Bisection of Lines and Angles. LI. Problems. LII. The Mariner's Compass. **REVISION EXAMPLES.**

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

PART II.—22nd Edition—Price As. 12.**Contents of Part II.****II FORM.**

Chapter I. Numeration and Notation (including *Roman Notation*). II. Revision of the Simple Rules:—1. *Proof of Addition by casting out nines*. 2. *Detailed Verification of Multiplication*. 3. *Multiplication by 11*. 4. *Combined Multiplication and Addition*. 5. *Subtraction by Complementary Addition*. 6. *Combined Multiplication and Subtraction*. 7. *Square root and Cube root*. 8. *Easy approximations (Integers)*. 9. *Rough estimate of results*. III. Reduction and the Compound Rules. IV. Decimals:—1. *Multiplication of Decimals by Decimals*. 2. *Division of Decimals by Decimals*. 3. *Multiplication of Decimals by Decimals (continued)*. 4. *Multiplication and Division of Decimals by a Decimal of the Standard Form*. V. Bisection of Straight Lines, Angles and Arcs. VI. Vulgar Fractions:—1. *Compound Vulgar Fractions*. 2. *The signs $\div$, $\times$, of, $+$, $-$* . 3. *Complex Vulgar Fractions*. VII. Interconversion of Decimals and Fractions. VIII. Reductions of Concrete Fractions. IX. Reduction of Concrete Decimals. X. Triangles: Their Classification and Properties (including the shortest distance from a point to a straight line). XI. Simple Practice. XII. Unitary Method. XIII. Use of Letters for Numbers (including symbolical representation and solution of Problems by using x). XIV. Ratio. XV. Proportion and Rule of Three. XVI. Square Measure. XVII. Drawing to Scale. XVIII. Cubic Measure. XIX. Averages. XX. Latitude and Longitude. XXI. Construction of Triangles including Intersecting Circles. XXII. Problems:—1. *Division of Property*. 2. *Groups and Multiples*. 3. *Time and Work*. 4. *Fractional Parts*. 5. *Income-Tax*. 6. *Exchange and Barter*. 7. *Profit and Loss*. 8. *Revolution of Wheels*. 9. *The Clock and the Calendar*. 10. *Time and Distance*. **REVISION EXAMPLES.**

III FORM.

Chapter XXIII. Decimals—(continued):—1. *Simplification of Complex Decimal Fractions*. 2. *Approximation of Decimals*. 3. *Statistics*. 4. *Related Examples*. 5. *Remainder after Division by Decimals*. XXIV. Vulgar Fractions—(continued). XXIV-A. Complex Fractions involving Decimals. XXV. Construction of Triangles—(continued). XXVI. Reduction of Concrete Fractions—(continued). XXVII. Reduction of Concrete Decimals—(continued). XXVIII. Circumference of Circles and Cylinders. XXIX. Congruence of Triangles and Circles (including *similar Triangles*). XXX. Compound Practice. XXXI. Parallel Straight Lines and Parallelograms. XXXII. Compound Rule of Three. XXXIII. Some Regular Rectilinear Figures. XXXIV. Square Measure—(continued). XXXV. Cubic Measure—(continued). XXXVI. Symmetrical Figures. XXXVII. Simple Interest. XXXVIII. Pyramid: Tetrahedron: Prism. XXXIX. Percentages. XL. Positive and Negative Quantities. XLI. Simple and Compound Rule of Three. XLII. Angles of Elevation and Depression. XLIII. Problems:—1. *Division of Property*. 2. *Groups and Multiples*. 3. *Time and Work*. 4. *Fractional Parts*. 5. *Income-Tax and Expenses*. 6. *Exchange and Barter*. 7. *Profit and Loss*. 8. *The Calendar*. 9. *Time and Distance*. 10. *Longitude and Time*. XLIV. Removal and Insertion of Brackets. XLV. Equations and Equational Problems. **REVISION EXAMPLES** including *Mysore Lower Secondary Examination Papers. Answers.*

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

Approved as a Text-Book suitable for School use,

vide Fort St. George Gazette, Part I-B, p. 545, dated 1-11-27.

AN IMPORTANT NEW TAMIL PUBLICATION.

ஆரம்ப கணிதம்

(சென்னை வித்யாஇலாகா அதிகாரிகளால் தொகுக்கப்பட்ட விலபஸூக்கணக்கத் தயாரிக்கப்பட்டது.)

இஃது கும்பகோணம் கவர்ன்மெண்டு காலேஜ் பிரதம ஆசிரியராயிருந்த ராப்பகதூர் P. V. சேஷ-
அய்யர், B.A., L.T. அவர்களாலும், சென்னை பச்சைசாப்பன் கலாசாலை ஹைஸ்கூல் பிரதம ஆசிரியர்
V. வெங்கடசுப்பையா, B.A., L.T. அவர்களாலும் ஆங்கிலத்தில் இயற்றப்பெற்ற
Elementary Mathematics, Part I இன் மொழி பெயர்ப்பு.

மொழி பெயர்ப்பாசிரியர் :

சேலம் முனிசிபல் காலேஜ் கணித போதகாசிரியர், S. சிவராமன், B.A., L.T.
சைதாப்பேட்டை டீசர்ஸ் காலேஜ் கணிதப்பாதகாசிரியர் S. பாலகிருஷ்ண அய்யர், B.A., L.T.,
அவர்களுடைய முன்னுரைபுடன் கூடியது.

(முதல் பாகம்.)

பொருளடக்கம்.

I. எண் மானபூம் எண் குறிப்பும் :—எண்கள் ; இலக்கங்களால் எண்களைக் குறித்தல் ; எண்களின்
சுய மதிப்பும் ஸ்தான மதிப்பும் ; ஸோமன் வழி. II. கோடுகளும் புள்ளிகளும் :—கீழ்ப் ; ஸா
பெஸ்கன் ; கோடுகள் ; புள்ளிகள் ; கோடுகளின் வகைகளும் கோடுகளைப் பரீட்சிக்கும் விதமும் ; புள்ளிகள்
குறித்தலும் கோடுகள் இழுத்தலும் ; நீள அளவு ; மனைவர்களின் உபயோகம் ; எண்களை நீளத்தால் குறித்தல்.
III. கூட்டல் :—கூட்டலின் அர்த்தமும் உபயோகமும் ; கூட்டலைப்பற்றிய ஓர் உண்மை ; கூட்டலைப் படத்
தால் காண்பித்தல் ; அடைப்புக் குறிகள் ; கூட்டல் ; பெரிய கணக்குகள் ; கழித்தல் ; கழித்தலைப் படத்தால்
காட்டுதல் ; பலவகைகழித்தல் வழிகள் ; கூட்டல் கழித்தலைப்பற்றிய சில விதிகள் ; கலப்புக் கூட்டலும் கழித்
தலும். IV. பெருக்கல் :—பெருக்கலைப் படத்தால் காண்பித்தல் ; ஒரு ஸ்தான எண்ணால் பெருக்கல் ; பாக்டர்
களால் பெருக்கல் ; எந்த எண்களைக் கொண்டும் பெருக்கல் ; பெருக்கலில் குறுக்கு வழிகள். V. வகுத்தல் :—
வகுத்தலைப் படத்தில் காட்டுதல் ; ஒரு ஸ்தானத்தால் வகுத்தல் ; பாக்டர்களால் வகுத்தல் ; 10, 100 முதலிய
வைகளால் வகுத்தல் ; நீள வகுத்தல் ; வகுத்தலின் இன்னொரு அர்த்தம் ; சில பெருக்கல் வகுத்தல் விதிகள் ;
பெருக்கல் வகுத்தலில் சில குறுக்கு வழிகள் ; ஒன்பதுகளை நீக்குதல். VI. பலவா வையங்கள் :—அளவை
வாய்ப்பாடுகள் : நான்ய அளவுகள் ; நிறை அளவுகள் ; நீள அளவு ; பிடித்தல் அளவு ; கால அளவு ; காலித
அளவு ; எண்ணிக்கை அளவு ; இனமாற்றத்தல் ; பலவின் வெண் கூட்டல் ; கழித்தல் ; பலவின்வெண்
பெருக்கல் ; பலவின் வெண் வகுத்தல். VII. கோணங்களும் அவற்றின் அளவும் :—திசை, திசைமாற்றம் ;
கோணம், கோணங்களை ஒப்பிட்டுப் பார்த்தல் ; கோணம் ; சதுரங்களும் வட்டங்களில்களும் ; வட்டங்கள் ;
கோணங்களின் அளவு ; கோணங்களின் வகைகள் ; ப்ரொட்டாக்டரைக் கொண்டு கோணங்களை வரைதல் ; ஒரு
புள்ளியிடத்தில் உள்ள கோணங்கள். VIII. டெஸிமல்கள் :—டெஸிமல்களின் அர்த்தம் ; டெஸிமல் குறிப்
பில் ஸ்தான மதிப்பு ; இரண்டாவது டெஸிமல் ஸ்தானம் ; டெஸிமல் குறிப்பு பொது விவரம் ; ஒரு டெஸிமல்
ஸ்தானமுள்ள எண்கள் ; டெஸிமல் கூட்டல் ; டெஸிமல் கழித்தல் ; எந்த எண்களையும் கழித்தல் ; 10, 100
முதலியவைகளால் பெருக்கல் ; ஒரு ஸ்தானமுள்ள முழு எண்ணால் பெருக்கல் ; ஒரு ஸ்தானமுள்ள முழு எண்
னால் வகுத்தல் ; பல ஸ்தான முழு எண்களால் பெருக்கல் ; பல ஸ்தான முழு எண்களால் வகுத்தல்.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

IX. உயர்ந்த பொது அளவும் தாழ்ந்த பொது மடங்கும் :—அளவும் மடங்கும் ; பொது அளவும் மடங்கும் ;
உயர்ந்த பொது அளவும் தாழ்ந்த பொது மடங்கும் ; பாக்டர்களால் இரண்டு அல்லது இரண்டிற்கு மேற்பட்ட
எண்களின் உ. பொ. அ. உம், தா. பொ. ம. உம் கண்டுபிடிக்கும் வழி ; உ. பொ. அளவைக் கண்டுபிடிக்கும்
பொது வழியைப் படத்தாற் காட்டல் ; உ. பொ. அ. பொது வழி. X. சாதாரண பின்னங்கள் :—பலவின
அளவுகளின் பின்னங்கள் ; ஒரு கான்கரீட் அளவை இன்னொரு கான்கரீட் அளவின் பின்னமாகச் சொல்லுதல் ;
சுமமான பின்னங்கள் ; சுமமான பின்னங்களைப் படத்தாற் காட்டுதல் ; பின்னங்களின் சமத்துவம் ; தாழ்ந்த
உறப்புகள் ; பின்னங்களை ஒப்பிடுதல் ; பின்னங்களின் கூட்டலும் கழித்தலும் ; ஒரு சாதாரண பின்னத்தை
ஒரு முழு எண்ணால் பெருக்கல் ; சாதாரண பின்னத்தை ஒரு முழு எண்ணால் வகுத்தல் ; ஒரு பின்னத்தால்
பெருக்கல் ; பின்னத்தின் பின்னம் ; ஒரு பின்னத்தால் வகுத்தல் ; ஒரு எண்ணை ஒரு குறிப்பிட்ட டிஸிமலினே
டர் உள்வாங்கி மாற்றல் ; பின்னங்களைச் சுருக்கல். IX. வாடிக்கை முறை.—பலமாநீர்க் கணக்குகள்
பரீட்சைக் கேள்விகள். விடைகள்.

முதல் பாகம் 1-வது வகுப்புக்கும் 1-வது பாரத்திற்கும், கிரௌன் 300 பக்கங்கள், விலை அனா 14.

Approved as a Text-Book suitable for School use,
vide Fort St. George Gazette, Part I-B, p. 546, dated 1-11-27.

(இரண்டாம் பாகம்.)

பொருளடக்கம்.

பரீட்சைக் கேள்விகள். I. டெஸிமல்களின் பெருக்கலும் வகுத்தலும் : ஒரு ஸ்தான டெஸிமல்
எண்ணால் பெருக்கல் ; சமமான பரிசோதனை ; எந்த டெஸிமல் எண்ணால் பெருக்கல் ; டெஸிமல்களால்
வகுத்தல் ; சுமாய்ச் சொல்லல் ; சாதாரண பின்னங்களை டெஸிமல்களாக மாற்றல் ; டெஸிமல்களை சாதாரண
பின்னங்களாக மாற்றல். II. சாசா, ஸாஷ்யா முதலானவை : சாசா ; ஸாஷ்யோ ; மாருத ஸாஷ்யோ ;
ஸாஷ்யாவின் உபயோகங்கள் ; ப்ரஃபாஷன் ; ஸாப நஷ்டம், வருமான வரி ; கடன் மிகுதல். III. பாய்
பளவு : பாய்பளவு ; வர்ட்டாவில் ; இங்கிலாந்து பாய்பளவுகளும் ப்ரஞ்சு பாய்பளவுகளும் ; பாய்பளவு வாய்ப்
பாடுகள் ; பிளான் வரைதல், அதாவது அமைப்புருவம் வரைதல் ; தரையின் பாய்பளவும் நாதகவர்களின் பாய்
பளவும் ; கட்டக் காலித்தலின் உபயோகம். IV. பொது எண் கணக்கு—சமீகாணங்கள் : அங்க கணிதமும்
பீஜ கணிதமும் ; சில பெயர் வினக்கங்கள் ; சமீகாணங்கள் ; இன் அங்கங்கள் ; அடைப்புக் குறிகள் கீக்குதல்.
V. முக்கோணங்கள் : அவற்றின் பக்கங்களும் கோணங்களும் : முக்கோண விரிப்பு ; முக்கோணங்களின்
கோணங்கள் பக்கங்களுக்குள்ள சம்பந்தங்கள் ; ஒரு புள்ளியிலிருந்து நபத்தனைக்கணக்க மற்றொரு புள்ளி குறித்
தல் ; இரண்டு புள்ளிகளிலிருந்து சிபத்தனைக்குக் கணக்க மற்றொரு புள்ளி குறித்தல் ; கொடுக்கப்பட்ட அளவு
களைக் கொண்டு முக்கோணம் வரைதல் ; வட்டங்களின் சில தன்மைகள் ; முக்கோணங்களின் வகைகள் ; ஓர்
புள்ளியிலிருந்து ஓர் கோட்டிற்கு பெர்பெண்டிகுலர். VI. கோடுகளும் கோணங்களையும் இருசமபாகங்
களாக்கல் : இருசமபாக முக்கோணங்களின் சில தன்மைகள் ; கோடுகளை இருசமபாகங்களாக்குதல் ;
கோணங்களை இருசமபாகங்களாக்குதல் ; கார்ட்டளையும் வட்ட பாகங்களையும் இரண்டு சமபாகங்களாக்குதல் ;
பெர்பெண்டிகுலர்கள் இழுத்தல் ; ஸிம்மெட்ரி. பலமாநீர்க் கணக்குகள் ; முதல் பாரப் பாடங்களில் புதிய
கணக்குகள் :—கூட்டல் கழித்தல் ; பெருக்கல் ; வகுத்தல் ; பலவின் எண்கள் ; கோணங்களும் வட்டங்களும் ;
டெஸிமல்கள் ; உயர்ந்தபொது அளவும் ; தாழ்ந்த பொது மடங்கும் ; சாதாரண பின்னங்கள் ; பலமாதிரி
இரண்டாம் பாரப்பாடங்களில் பலமாதிரிக் கணக்குகள். பரீட்சைக் கேள்விகள். அறுபத்தம். விடைகள்.

இரண்டாம் பாகம் 2-வது பாரத்திற்கு, கிரௌன் 208 பக்கங்கள். விலை அனா 10.

PART III for FORM III—will be ready shortly.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

LATEST PUBLICATIONS**SUPPLEMENTARY AND NON-DETAILED STUDY READERS IN TAMIL***Approved by the Text-Book Committee.***(1) For Class I to Class VI**

Travellers Round the World. (History-Geography Readers). By Mrs. A. Deva-sahayam (Madras Educational Department). Illustrated with Pictures and Maps.

Children are taken in these Readers in an imaginary travel round the world. They get an idea of men and manners in different parts of the world, and how life is conditioned by environment.

PRIMER ... As. 3 READER IV ... As. 5
 READER II. As. 4
 READER III, As. 5 READER V ... As. 6

(2) For Forms I to III

Tolstoy's Short Stories. தலஸ்தாய் குறு கதைகள். Part I, pp. 84. As. 5. Part II, pp. 80. As. 5. By Visvama na Iyer, B.A., L.T., Government Training School, Coimbatore. These stories by the great sage and regenerator of Modern Russia will have direct effect in the building of character and infusion of a spirit of love of, and service to, fellow-beings and sacrifice in the younger generation of this country.

The Story of Lord Kitchener. Pp. 40. கீச்சனரின் கதை. By S. Krishnamachari, B.A., L.T., Hindu High School, Triplicane. With a Portrait of the great soldier and three maps. As. 3. Printed in Bold Type. For Forms II and III. In this book, such aspects of Kitchener's life and such incidents alone are presented as will interest pupils of the Forms mentioned above and give them an idea of the hero's high courage, readiness and resource, spirit of submission to stern discipline, sense of lofty purpose and desire to do duty without ostentation.

It is hoped that these aspects of his life and incidents will inspire many a Tamil pupil and Tamilian Boy Scout.

INDIAN HISTORY. (Tamil).

Prepared in accordance with the Syllabus of the Educational Department.

Book I for Form I. Stories from Indian History. Pp. 158. As. 7.

Book II for Form II. Lessons in Indian History. 187 pp. 10 As.

Book III for Form III. Lessons in Indian History. 188 pp. 10 As.

An excellent Series for groundwork.

Events brought up to the Viceroyalty of Lord Irwin. All modern progressive movements included.

THE CHRISTIAN LITERATURE SOCIETY FOR INDIA, P. B. 501, PARK TOWN, MADRAS.

(3) For the Upper Forms

The Wembley Exhibition. (With many Half-tone Illustrations). By T. A. Rajarathnam Pillai. As. 10.

One of the greatest events of the world after the Great War has been **The Wembley Exhibition.**

The Exhibition demonstrated all the marvellous achievements of Modern Science and Art and showed the results of a century of human progress.

India, entering into the scene with considerable confidence lest her Exhibits should prove insignificant by the side of the wonderful outturns of Applied Science, found that a great many of her Exhibits of subtlest workmanship, richness of design and superb art were pronounced, by critics versed in the respective arts, to be unmatched in the world, and that Indian Art, with its heritage and speciality, stood higher than ever in the estimation of the world after the Wembley Exhibition.

This book gives valuable information about the commercial products of the British Empire. Besides being helpful to **Students of Form IV and of Forms V and VI**, who have to study the **Historical Geography of the British Empire**, it will fill the younger generation in the Tamil country with considerable confidence in the greatness of Indian Art and its future possibilities, and encourage them to take to it.

Elementary Mathematics. (TAMIL).

BY SWAMICKAN.

ELEMENTARY MATHEMATICS. BOOK I
 for Classes I and II ... 0 10 0

ELEMENTARY MATHEMATICS. BOOK III
 for Class IV ... 0 10 0

ELEMENTARY MATHEMATICS. BOOK IV
 for Class V ... 0 12 0

This series makes pupils avoid committing rules and processes to memory and directs them to think and understand their rationale.

New Telugu Readers. BY S. BRUSHANAM.

READER FOR THE FIRST CLASS ... 0 2 6

READER FOR THE SECOND CLASS ... 0 3 0

READER FOR THE THIRD CLASS ... 0 4 0

READER FOR THE FOURTH CLASS ... 0 5 0

READER FOR THE FIFTH CLASS ... 0 6 0

Topics suited to Telugu children. Matter presented with attention to such literary forms as children enjoy and are accepted as up-to-date.

AMRUTANJAN



Cures All aches & pains

Price 10 Annas a Pot

Sold Everywhere

AMRUTANJAN DEPOT,

MADRAS

&

BOMBAY.

University Tutorial Press

BOOKS ON WIRELESS.

EASY LESSONS IN WIRELESS.

By R. W. HUTCHINSON, M. Sc., A.M.I.E.E. 1s. 6d.

Intended for those people—young and old—who have no knowledge whatever of electrical matters and who wish to obtain a general idea of how wireless signals, speech, and music are sent and received, without being troubled with the difficult theory and numerous technical points which are usually associated with this subject.

The language is simple, there are no mathematics, new ideas are made clear by every-day illustrations, unnecessary technical terms are avoided and such essential ones as are used are explained in an easy manner.

A FIRST COURSE IN WIRELESS.

By R. W. HUTCHINSON, M. Sc., A.M.I.E.E. 3s. 6d.

A scientific introduction to wireless telegraphy and telephony, no previous knowledge either of the science of electricity or of radio-communication being assumed.

The theory underlying the production, propagation, and detection of electro-magnetic waves is treated in a simple, non-mathematical, yet scientific way, the construction and action of the essential apparatus and circuits employed in transmitting stations are briefly dealt with, and several modern receiving circuits, their action and their components, are explained and illustrated in detail.

A TEXT-BOOK OF WIRELESS TELEGRAPHY AND TELEPHONY.

By W. GREENWOOD, B. Sc., A.M.I.E.E., A.C.G.I. 5s. 6d.

Deals concisely with the theory of the subject, and gives detailed information of the apparatus, arrangement and working of various transmitting and receiving circuits. It specially meets the needs of candidates for University Examinations, but will also prove of service to the general reader interested in the subject.

Descriptive Prospectuses of the above and Complete Catalogue of Educational Publications, post free, on application.

University Tutorial Press, Ltd.,

25, HIGH STREET, NEW OXFORD STREET, LONDON, W.C. 2.

The publications of the University Tutorial Press may be obtained from the principal booksellers in India.

The Educational Review

A Monthly Record for India.

VOL. XXXIII.]

OCTOBER 1927.

[No. 10.]

All literary contributions, books for review, newspapers, or magazines, sent in exchange, &c., should be addressed to the Editor, No. 4, Mount Road, Madras. Articles and communications intended for publication in the succeeding issue should, as far as possible, reach the Editor not later than the 20th of the month. The Editor solicits contributions on all subjects of educational interest. Stamps should accompany the MS., if the writer wishes it returned, in case of non-acceptance. The Editor can in no case hold himself responsible for accidental loss.

All remittances and communications regarding advertisements, &c., should be forwarded to the Publishers, EDUCATIONAL REVIEW, Office, No. 4, Mount Road, Madras.

The Publishers request that Subscribers to the EDUCATIONAL REVIEW, who do not receive the REVIEW in time, will kindly bring the fact to their notice immediately.

ATOMIC STRUCTURE OF
THE UNIVERSE

By Mr. P. A. NARAYANA AIYAR, M.A., L.T.,

*Additional Professor of Chemistry,
Presidency College, Madras.*

EACH one of us is anxious to know what stuff he is made of. It may be more correct to say that each of us is eager to probe into the ways of others—into the temperament and constitution of all men and things around him. This habit is not peculiar to a person of any one age or country. The Ancients have philosophised about the nature of things around them—fire, air, earth, and water—what each of these is composed of. Nearly two thousand years ago, Lucretius, the famous Latin poet, summed up the view that everything in the universe is composed of innumerable small corpuscles called atoms, the word atom taken in its original sense meaning something which cannot be cut.

Lucretius had evidently no conception, however, of atomic theories as they stand

now. He never realised that the atoms are of different kinds and that all the atoms of one kind are alike. This idea is comparatively new. It was explained with great clearness by John Dalton at the beginning of the nineteenth century. In order to account for the varieties of chemical combination, Dalton assumed, on an unverifiable hypothetical basis that all matter was composed of single, indivisible units called atoms. They were minute, perfectly elastic spheres, an enormous number of them being required to produce any tangible effect. Of these atoms there are only 92 individuals and so far the newer idea of Dalton has made everything so much simpler. Their importance lies in their multifarious varieties of combinations to form molecules and in this respect they may be likened to the letters of the alphabet, which can be put together into innumerable ways to form words. We may even push the analogy further and say that the association of words into sentences and passages conveying meanings of every kind is like the combination of

molecules of all kinds and in all proportions to form structures and materials that have an infinite variety of appearances and properties and can carry what we speak of as life.

Nature is a builder making all that we see out of 92 atoms only. Just as a house is constructed out of so many different kinds of things, bricks, slabs, planks, panes and so on, and is it not wonderful that all the things in the world and in the universe, as far as we know it, are made of so few elements—still more surprising when we recognise that the universe is so rich in its variety, the earth and all that rests on it and grows on it, the waters of the seas, the air and the clouds, all living things that move on the earth or sea or air, our bodies, the sun and moon and the stars—Oh! why should you be surprised? Why may not Nature do something like the builder who can build an infinite variety of palaces or cottages with only bricks, mortar and girders?

Ever since Dalton put forward the idea, the word 'atom' has become exceedingly important and people have begun to ask what it is, whether it has size, form or any other recognisable characteristic. So much so, the atom is now as real as a chair, a table, or a bench. Vague ideas are now being replaced by exact quantitative knowledge.

Among the many scholars who made any serious attempt to replace these vague notions the name of Lord Kelvin will stand foremost. By several most ingenious and indirect devices he arrived at astounding conclusions regarding the relative size of atoms. All lines of reasoning which Lord Kelvin employed led him to infer that the atoms and molecules of ordinary matter have each a diameter ranging between 10^{-7} and 10^{-8} of a cm. We are now able to verify his conclusions through

new eyes and we see that his estimate was wonderfully near the truth, considering the inexact methods which alone were at his disposal.

When we ask ourselves about the shape of the atoms, we find that the chemist who is immediately concerned with the combination of atoms, rarely found it necessary to discuss their shapes. Yet, in the science of organic chemistry, it was found necessary to imagine the arrangement of atoms in space, thus giving it some kind of shape.

But what binds the atoms together into the various combinations and structures? Just as two magnets cling when opposite poles are presented to each other, or just as two opposite electric charges neutralise each other, the atoms possessing, no doubt, both magnetic and electric attractions, are actually drawn together by these forces. Then the question may be pertinently asked why such atoms should be found, some loosely combined as in gases, some others in closer communion to form liquids and solids while a few refusing any sort of linkage with their neighbours. The only possible explanation for such a state of things is to be ascribed to the perpetual motion to which atoms are subjected.

Reference was made to two new eyes—Radio-activity and X-rays—through which we could see the minute atom. These have increased the fineness of our vision some ten thousand times. The microscope once played as an important aid in our investigation. But even the microscope with all its technique highly refined could exhibit only billions of atoms together. It is easy to realise why the finest microscope cannot help us too far if we recognise for a moment that light waves cannot show us the details of objects unless the

objects are much larger in every way than the length of the wave. A new light of very short wave-length was required and it was found in the form of the X-rays. At the same time, radio-activity came to show us what a single atom can do by itself if it were given a tremendous speed. We shall now see how these two agents have contributed to our stock of knowledge concerning the atom.

According to theories of radio-activity, the atoms of radio-active matter are always undergoing spontaneous transformation with the appearance of a succession of new radio-active bodies, each marked by characteristic chemical and radio-active properties. Radiations accompany the transformation and provide us with a means of measuring the rate of disintegration and at the same time, much of the chemical activity of radio-active bodies is closely connected with these rays. This atomic transformation appears to be the result of an explosion of intense violence in which a part of the atom whether helium or an electron is shot out with great speed. Guided by this theory, the whole sequence of changes in the uranium, thorium and actinium series has been investigated in detail and in a remarkably brief space of time, no less than thirty new radio-active elements have been brought to light.

No one knows what brings about the explosion, nor does any one know a way of hastening or hindering it. The radium atom is just as likely to explode at any given moment if it is in a furnace as if it is immersed in liquid air. Combination with other atoms makes no change so far as the disintegration is concerned. It is beyond human control. Though we cannot understand how a seed germinates, much less make one that will do so, yet we can lock up a seed in a

drawer and prevent it from germinating as long as we like. But the radium explosion does not wait on anything which we do.

It was stated that a radio-active atom emits forth radiations. It would be of interest to enquire into the nature of these radiations. Are they simple or are they made up of a series of different types of vibrations? Experiments have definitely proved that they consist of three different types differently deflected in a magnetic field. They are called α , β and γ rays respectively. The β rays consist of electrons travelling with a velocity approximating to that of light. But what is an electron? This term owes its origin to the researches made to establish a definite connection between atomic structure and X-rays. It is bestowed on a very minute particle carrying a negative electric charge. Its size in relation to that of the atom may be compared to that of a speck of dust to the volume of this room. The mass is probably $\frac{1}{1836}$ of a hydrogen atom. Its electric charge is the smallest known. It is the unit of which every quantity of electricity is a multiple.

Since matter is electrically neutral, there should be an equal quantity of positively charged particles to neutralise the negatively charged electrons. In other words, the existence of the negative electron implies that of the positive electron. Rutherford has shown that the rays shot out from radium consist of positively charged helium atoms. In fact all bodies emitting α rays give rise to helium whose atomic weight is 4. The appearance of helium in so many changes coupled with the observation that the weight of a body diminishes by four units on the expulsion of an α -ray clearly indicates that helium must be one of the secondary units of which many substances are built up.

Let us now try to picture to ourselves in what way we must modify our first conception of the atom so that we can explain the effects we now see. In determining the structure of an atom, there are two considerations that should prevail upon us. First, the atoms must be so constituted that when they are pressed together they occupy as a whole an amount of space which is sufficient to make room for them all. Second, when one atom, *e.g.*, a helium atom, is hurled against others with sufficient speed, the one atom goes through the others, as if the defences round the domains had been broken down. Such a constitution can be traced to the solar structure. In other words, the atom is a solar system in miniature with a nucleus corresponding to the sun and electrons round the nucleus corresponding to planets. The nucleus charged with positive electricity and all electrons which are alike are charged with negative electricity. The positive charge on the positive nucleus just neutralises the total negative charge of the electrons.

Such an arrangement in which the nucleus forms the central core of the atom and the electrons form, as it were, an attendant retinue enveloping the nucleus and held to it by electrical attractions explains easily how one atom of this kind can pass through another or how one atom possesses the power of keeping another outside its domain. Two atoms resist encroachment when the outer cloak of electrons of one atom with negative charge repels negatively charged electrons of the disturbing atom, while the former is effected by the high speed with which the atoms move when the system of electrons and nucleus of one atom slip through those of the other.

The question now arises as to the number of electrons in each atom. All atoms of the

same kind are alike, *e.g.*, one carbon atom is exactly like another and we may well describe a carbon atom as consisting of a positive nucleus with a counterpart of six electrons and every atom with six electrons is a carbon atom. Similarly a 'seven electron' atom is nitrogen, an eight electron one is oxygen and so on. We have 92 elements out of which the complex universe is built and the elements can be arranged from 1 to 92 such that the first element hydrogen has one electron, the second two and so on. We have therefore atoms from 'one electron' to 'ninety-two electrons.' The number of electrons in each atom determines the atomic number of the elements. If any elements are missing in the list, they will be found some day; more or less accidentally it may well be.

This theory of outer atomic structure whether accurate or not is a great advance in science. It explains very satisfactorily some of the most characteristic features of the periodic law—particularly the appearance in the family of elements of groups of consecutive elements with similar chemical properties such as the eighth group elements and the unique group of rare earths. It verifies the law of octaves which states that every eighth element in the series is a repetition of the first as every eighth note of music. For an outer shell round the nucleus can have but a maximum of eight electrons and if the number is exceeded, there will be two, three or four shells with a maximum of 8 electrons on each shell beginning from the inner. The outer shell alone could have less than eight electrons. So an eight-electron atom will possess properties similar to 16, 24, 32, etc., electron atoms and so on, as the properties are determined by the number of electrons on the outer shell. The nuclear theory

THE TEACHER: HIS REMUNERATION AND HIS RESPONSIBILITY.*

By Mr. M. R. PARANJPE, M.A., B.Sc.,
Poona.

THE subject chosen for discussion to-day is not a new subject, but it usually happens that the question is split up into two parts which are treated separately, not always for convenience. At the Teachers' Colleges, for instance, the students are heavily dosed with lectures on their responsibilities as teachers, and the question of their remuneration is deliberately set aside. Recently, speaking at the Teachers' College at Benares, Pandit Ramnarayan Mishra, the Headmaster of the Central Hindu Collegiate High School, began his address with a warning to the audience not to join the teacher's profession if they would expect adequate remuneration for their work. On the other hand, at many a Teachers' Conference, men have emphasised the question of better salaries and better prospects without showing in any way that they are at all conscious of the fact that better salaries cannot exist but by the side of a better sense of responsibility. But it is not my purpose to-day to advise the teachers on their duties and responsibilities, nor do I hold a brief from them to plead their case for better salaries. As a man of science, I am interested in the simple process of weighing the one against the other, leaving the public to note the result and draw their own conclusions from it.

Coming to the teacher's responsibilities, therefore, I give the first place to the importance of a teacher's knowledge of a subject and his ability to present it to his pupils. One cannot afford to shut one's eyes to it for

explains the relations between isotopic elements, that is, elements chemically alike but with slightly varying atomic weight. Since the chemical properties of an element are controlled by its nuclear charge and little influenced by its mass, isotopies must have the same nuclear charge but be of different nuclear mass.

The new philosophy of atomic structure explains many other intricate problems of the world and to this extent the new theory has been very successful. It may be that the theory is not without objections. In fact, no theory is quite clear. Yet we are not to be discouraged since every new fact, thought and theory shall ultimately further the interests of science and the well-being of the mundane world.

CLEARANCE SALE.

S.S.L.C. Examination 1927 and
Intermediate Examination.

BOOKS BY P. M. ANANDAN, B.A., L.T.

1. Crossing of Swords and the Bid for Empire in India. As. 8 only.
2. Exhaustive Questions and Answers in English History, 1688—1763. As. 8 only.
3. The English Parliament and Constitutional History. As. 6 only.
4. A History of British Empire together with the Geography connected with it for V Form, Part I, As. 10, For VI Form, Part II, As. 8 only.
5. Notes on History Manners and Conditions of the People of England, 55 B. C. to 1914 A. D. Complete, in three parts. Re. 1-14-0.

ANANDA CHANDRA SEKHER BROS.,
General Merchants, CALCUTTA.

* An address delivered recently at the Bombay Teachers' Union.

if the well be dry, the bucket can never be filled. I do not know how things are in other Presidencies, but in this Presidency of Bombay, more than half the teachers are untrained Matriculates who have just managed to scrape through the examination crowd. When employed as teachers, there is neither provision nor inducement for them to add to their stock of knowledge; there is no institution where they can learn the principles of education or the art of teaching; and yet they are made to shoulder the responsibility of laying the foundations of secondary education. In this Presidency at least, Responsibility No. 1 is not that the teacher must know his subject but that he must teach a subject which he does not know.

2. Again from the teacher we expect a higher code of good manners and morality. Regularity and punctuality we expect in all employees, but more from a teacher. If a clerk is absent for a day or if he be late by an hour, the officer is less annoyed than the headmaster is if a teacher is guilty of the same default. The clerk's work is allowed to accumulate in his absence and he is allowed to finish it by working over-time. This is not possible with a teacher. In a teacher's absence we do not allow the boys a holiday and ask the teacher to make up the work by working over-time.

There are also innumerable things which a teacher shall not do though others may. He shall not indulge in fineries; he shall not be too simple in his dress. A clerk may smoke at his desk, a teacher shall not. He will not visit the theatre too often, he will not enter a restaurant for lunch. Not that these are things bad in themselves; but forty little imps are watching him and his simple indiscretions are likely to be mis-understood by his pupils

who in imitating the teacher might transgress the line of good sense.

3. A teacher thus has to be moderate, moderate in his views, moderate in his speech, moderate in his actions. In his dress he will be moderately expensive and moderately simple. In his speech he will not side with a party, political, social or religious, and violently defend it. He will do nothing to forcibly bend the thoughts of his pupils in a particular direction. Yet a teacher is no teacher if he does not have strong conviction on certain questions. A vacillating, milk-and-water fellow can never be a good teacher. Responsibility No. 3 therefore is not that a teacher has to be moderate in his views, speech and actions, but that he has to be so in spite of his strong convictions. He has thus to be the possessor of two conflicting virtues. Like Almighty God a teacher must be to his pupils kind and strict, open and reserved. To his superior he must be obedient but he must possess the boldness to contradict him if necessary. A teacher thus has to be in a sense a superman.

4. A teacher also needs a keener conscience and exquisite skill. A less conscientious and a less skilful builder or a mechanic will produce a bad building or a bad product. But the harm caused thereby is more or less located to the particular building or the particular product. It is also very easy to detect the flaws in the building or the product and one takes steps to condemn it or to improve it. A less conscientious and a less skilful teacher produces bad citizens who scatter all over the nation and the harmful effects are not confined to the particular boy or girl. Again the defects in the citizens thus produced are not easily detected and steps

are seldom taken to improve defective products from schools.

5. There is probably no public worker who comes into touch with all grades of the society as a teacher does. Every day he meets with children of different types, their parents, his colleagues and his superiors. Among them are all sorts of men, polite and rough, wise and ignorant, careful and indifferent, rich and poor, and he needs infinite tact when dealing with them all. He meets them not always for business and therefore he cannot rigidly observe set rules of conduct. Sometimes it may be necessary for him to assert himself with emphasis, sometimes he may have to submit to self-effacement. He needs, in short, a many-sided behaviour, remaining all the while sincere in speech and earnest in his purpose.

6. Knowledge of the child mind is usually regarded as a *sine qua non* for a teacher's profession and yet we shut our eyes to the fact that no studied effort is made to teach child psychology to the teachers, and the teachers have to depend on the few thumb-rules they may acquire by long experience. One shudders at the thought that many a child has his career ruined by undeserved scolding or misplaced leniency. Responsibility No. 6 therefore is not that the teacher must know child-mind, but that we expect him to do it when we are sure that the average teacher has never learnt even the rudiments of it.

7. The responsibility of the teacher increases immensely by the fact that there are a number of insurmountable difficulties thrown in his way. Unlike an ordinary mechanic, a teacher is not allowed to choose his own material, nor does somebody choose it, with care, for him. He is often prevented

from using the tools (the methods) he likes best. His time of work is dictated to him by others and he is asked to work with colleagues not of his choice, colleagues who may be utterly incapable or may hold views conflicting with his. The pupils are in charge of the teacher for only four or five hours and the teacher is often entirely ignorant as to whether, in the remaining nineteen hours, the pupils have environments supporting the teacher's work or opposing it. Again, unlike an ordinary mechanic, a teacher, in this Presidency at least, has to submit to a criticism of his work by ignorant men, for most of the headmasters and inspectors have been till now pedagogically vacuous persons.

8. Last but not least, a teacher has unlimited opportunities for doing harm but his opportunities for doing good are strictly limited. Absence or presence of supervision will not prevent a bad teacher from teaching badly. It matters not whether he is in the same school or is frequently transferred from class to class or place to place. His bad teaching continues unabated. On the other hand, a good teacher is seriously handicapped if the supervision is faulty or equipment be insufficient or if he be frequently transferred from class to class or place to place. In fact it may be pardonable to say that administrative efficiency is often incompatible with good teaching. It is always so easy to destroy; it is so difficult to build up.

It will thus be seen that a teacher's responsibility is heavy and it assumes an uglier aspect by the fact that the employer tries to throw it all on the weak shoulders of the teacher knowing full well that he is not able to bear it. How is this balanced on the other side, the remuneration side? It is well-nigh impossible to balance it well, but is the re-

muneration pan loaded sufficiently at least to raise the responsibility pan from the ground? It is unnecessary to say anything on this point, for we know too well that if the scales be held in our hands, the beam will be nearly vertical with the responsibility pan at the bottom and the remuneration pan high up in the air.

This condition is the result of the Indian mentality which expects the teacher-class to be a class of ascetics, a class of men who have little interest in the comforts of this world, doing the work of teaching for its own sake. India has long been a land of teachers and the well-known teachers in ancient India, says the tradition, were men living in forests and receiving no fees from the students. The teacher in modern India, say the public, will not be able to reach that ideal, but should strive to go as near to it as possible. This is a wrong reading of history. The teacher's remuneration in ancient India was not small. The institutions in which these teachers worked, were, in modern language, State-endowed universities. The teacher had all he wanted; he had no worries about the past, the present or the future. He might not have been paid for in coin but his comfort was the care of the kings who saw that the teacher had no anxieties. He enjoyed the greatest respect and the most unrestricted freedom of work. It is unfair to compare the teacher in modern India with the teacher in ancient India. In a sense the work of the modern teacher is harder than that of the teacher in those ancient times. It is so easy to develop character in a boy living with the master in a place isolated from big cities, free from temptations. It is so difficult to do it in a boy who is in one's charge for a few hours only, in a big city like Bombay or Poona, full

of temptations which ancient Ajodhya or Dwarka did not have. Again consider the expectations of the modern father. Contact with the wider world needs a more informed and a more responsible citizen. Widening of the social, political and economic activities make heavier demands on a student's intellect. This makes the modern teacher's work harder, but he is not now the care of the kings, he does not command the respect he once did, and he is not allowed the freedom he most needs.

It is a pity that the Indian public does not even now feel the urgency of securing better education for its future citizens. The greatest national defect, as exemplified in the decay of all national movements during the last six or seven years and the growth of communal disputes, is the absence of able leaders, leaders who will unerringly take their followers towards progress. India is paying at present a terrible penalty for her neglect of schools which are not even good examination factories. Students inherit the qualities of their teachers and if the teachers are the least revered persons in a village or town, what claim have we to expect better product from our schools? It is really wonderful that things have not been much worse.

The responsibilities of a teacher are so heavy that it would be impossible to pay him such remuneration as would exactly balance the responsibility pan. Fortunately a teacher is not as exacting in his demands as a Barrister, or a Solicitor, or a Consulting Physician or an Engineer. He will have much less, for he gets from his students something which a Barrister or an Engineer or even a Physician does not get from his clients. The love which a child has for his teacher is almost on a par with what the child has for his mother

and, like the mother for the child, the teacher would undergo many a hardship for his pupils. He needs no luxuries, but he must be paid enough to keep him free from the day-to-day worries. He must have enough to educate his children, and he must have enough to pass a respectable life in his old days. A restless mind will always have a baneful influence on his work, and the teacher can never give his best to the school if he be thinking of his tailor's bill while teaching geography to his class.

We should also remember that a teacher needs something more than food and clothing. His mind requires nourishment; he needs the daily paper and a small library. He needs to spend night oil for a much longer time. He needs a good house to live in and a good dress to put on. He must do some travelling and he must have a little spare cash to be given away for prizes for the best performance of his class. But many a teacher in our Indian schools goes to school in ragged clothes, avoids meeting his old pupils for want of a decent dress, cannot afford to keep light burning at night, has no books of his own and has never gone outside his town for the railway fare to the nearest big place would consume his month's salary. Many of them live in insanitary hovels and owing to their inability to pay a doctor's bill, cultivate faith in the Nature's power to cure. It would be possible to bear all these hardships if the teachers formed a colony of their own in a secluded place. But in big towns where one can earn more, a teacher is forced to accept non-scholastic occupations that lead him to inefficiency and degradation. And degradation of a teacher is synonymous with the degradation of his students.

A fallacious argument is often advanced that better paid men are not always better workers. True, but it does not follow from this that ill-paid workers are. Strong legs are essential for active life and if you would expect a person to be active he must have strong legs. But there are many with strong legs who are extremely lazy; you would not on that account advocate the importance of keeping one's legs weak. This sort of argument is brought in by the advocates of the gospel of poverty and sacrifice. It is time now for us to realise that universal preaching of this gospel has always led to hypocrisy and demoralization. Confined to a few the gospel has worked wonders; extended to many, it has always failed. It failed in the days of Buddha. It has failed in the days of Gandhi. I believe I am stating the truth that among the Bairagees and Sadhus one finds the worst sinners and among the modern sacrificewallas one finds a large number of men worshipping Mammon with enthusiasm.

It is sometimes said that the present deplorable condition of the teachers is the outcome of the inexorable law of 'Demand and Supply.' With a limited demand and an almost unlimited supply, the remuneration ought to go down. But do facts warrant this statement? Is the supply really unlimited? When we choose a teacher for a rupee a day or even less, do we choose a teacher or only a human being with a tongue in his mouth and a certificate in his pocket? Let us look at the problem with a little common sense. An Engineer refuses to bind himself to accept the lowest tender; he suspects that there may be some fraud. When we go to the market we do not always buy our things in the cheapest shop; we feel we may be deceived. We refuse to buy the cheapest vegetable; we

are afraid it may be rotten at the core. Would it not be wise to examine with the same care, the cheapest offer from a teacher? May it not be that he is a CHEATER and not a TEACHER?

But admitting the truth of all this where can we get the funds necessary for paying our teachers more? The question does arise from to-day's discussion but I would not take the time of the audience in dilating upon the ways and means. My answer to such questions, however, always is that when a nation feels the need it is not very difficult to find the money. When we felt the need for more space in Bombay, we could obtain crores of rupees for Back-Bay Reclamation and Development-Chawls. When we felt the need of cultivating more cotton and wheat in Sind we sanctioned a big engineering project costing several crores again. When India feels the need of better education there will be no dearth of funds. The question therefore should be not whether we can have more funds but whether we shall have better education. Rich men will then make endowments for schools instead of for temples; pilgrims will place their offerings at the school-chest rather than at the threshold of a shrine, parents will spend more for their sons' education than for their motor cars, and Government will not grudge to spend less for the army and more for the schools.

KALIDASA

Being a critical appreciation of his works
IN TAMIL

By K. S. RAMASWAMI SASTRIAR, B.A., B.L.
Sub-Judge, Tanjore.

Crown 8vo. about 200 pages. Price 12 as.
Approved as suitable for school use. *Vide Fort St George Gazette, P. I-B., dated 19th April 1927.*

SRINIVASA VARADACHARI & CO.,
4 MOUNT ROAD, MADRAS.

THE IDEAL SCHOOL.

By Mr. N. G. NATH, M.A., L.T.,

Headmaster.

Rani Suryapal Kunwar High School Mirzapur.

OF late the number of schools has considerably increased, but it is not certain if they are run on right lines and if the boys who pass out of them are well fitted to carry on their life work.

A school should fulfil several conditions before it can be expected to do any real good to the rising generation. I shall try to sum up the chief characteristics of a good school, and incidentally point out some defects in the existing state of things.

THE SITUATION of a school should be good, it should not be in the heart of the city or in a congested quarter. Most of our boys live in insanitary houses and in the midst of filthy surroundings; when they come to school they should be able to see the difference between the houses where they live and the class-rooms where they read, and should be in a position to compare the one with the other. They will thus realise the importance of cleanliness, of a bright and airy locality, and will try to improve their own residence and their style of living, when they enter into life. The school compound should be spacious, and it should have a garden to boast of. Boys will thus learn to admire and appreciate the beauties of Nature, and the whole atmosphere will have a soothing effect upon their senses and an educative influence upon their minds. Class rooms should be scrupulously neat and clean, and the hall should be decorated with pictures and charts. The names of boys who have distinguished themselves in their work or in games should also be written in a prominent place. The play-ground

should be adjacent to the school, so that, if need be, even during working hours, boys may have a chance to play. When there is no recreation ground close by and the school has not an attractive appearance about it, there is fear of creating a distaste for reading. Boys may go with the impression that a school is a dreary, slave-manufacturing institution where they are forced to go and spend a part of their time under strict supervision. It does not appeal to their imagination, and they wish to have as little of it as possible.

THE STAFF:—The employment of good teachers is an all-important factor in the smooth working of the school machinery. We have many teachers in our schools who have no love for teaching and who have taken up this job as a last resource. It is said that when a man fails everywhere, he either becomes a teacher or a preacher. Such men cannot be of great use, they rob the teaching profession of its sacredness and nobility. The most essential attribute which a teacher should possess is that he should be devoted to his work,—his zeal for teaching should consume him.

It is not necessary that all teachers should be trained, though no one denies that training is a good thing. A trained teacher does not grope in the dark, he knows what he is about, but untrained teachers can make themselves equally useful and efficient if they are honest workers and have a love for teaching. In fact it has been pointedly remarked by some Inspectors in the last Annual Report that a number of private schools where there were hardly any trained teachers show better results than some of the Government schools which are staffed with trained teachers from the top to the bottom. It is one's attitude towards one's work which

matters, not the mere possession of University diplomas. The Headmaster should be the sole administrator so far as the internal management of the school is concerned; this does not mean that he should believe in 'the divine right of kings' and run the whole show himself. It is important that he should enlist the sympathies of the members of the staff, should make them responsible for one thing or the other, and should consult them in all important matters.

There should be no unnecessary interference on the part of the Manager or the Managing Committee. The Manager's work is to finance the school, to check the accounts, and to look after the buildings. He should be prepared to spend money whenever he finds that a certain innovation will contribute to the good of the school and of all concerned. In short the school should be like a big family; cordial relations should exist between the Headmaster and the staff, the teachers and the boys, and one should be ever ready to co-operate with the other.

THE NUMBER OF BOYS.

Private schools are at a great disadvantage inasmuch as 'Number' is a consideration there. Refusing admission to a boy means a loss to the school income. This has a detrimental effect on the whole school; all and sundry are admitted, promotions are lax, the standard is lowered, discipline suffers. The Department allows 35 in one class, that is too big a number for a teacher to teach or control.

Individual attention cannot be paid, correction work cannot be done properly, a boy's character cannot be studied, his special tastes and tendencies cannot be carefully noticed, he cannot be safely advised as to his future

career. The result is that boys have no one to guide them—teachers should have been their best friends and counsellors—and being left to themselves they make serious mistakes in their everyday life, and in the choice of a profession.

Written work is one of the most important branches of school work, it is often considered a drudgery, and drudgery it is for those who do not have a sense of duty. It is noteworthy that those schools show good results where sufficient written work is given, and where teachers do not shirk this part of their work. In a big class of 35 boys it is almost impossible to do justice to it. To know a thing is one thing, and to be able to express it in adequate language is another thing. We should teach our boys to be exact in their ideas, and this comes only by writing.

In a class there should not be more than 20 boys, this will enable the teacher to give sufficient time and thought to the boys placed under his care and to lead them in the right direction.

A VARIED PROGRAMME OF ACTIVITIES.

Our schools lay too much stress on the passing of examinations all other things are sacrificed to this end. A boy is not with us all his life, he has to stand on his own legs one day, and it is our duty that we send him into the world fully equipped. In English schools boys pass examinations, but they do many other things besides, and at the end of their school career they are all the better for it. They have imbibed a taste for reading and are at the same time full of health and spirit. Our schools produce such boys as have no energy left in them after they pass out; a dull, humdrum sort of existence is what they are best fitted for. The fact is that

during their school days there has been too great a strain on their nervous systems, and they cannot but begin life at a discount.

There is too much of routine work in our schools and the daily programme of work is not a varied and exciting one, this is why school traditions which give an institution a distinctive tone and which are potent factors in the formation of character are sadly lacking in our schools. We should encourage our boys to take part in games, in Scouting and in as many outside things as possible. They should go for school excursions and historical trips, visit new cities and come in touch with boys of their own age and ambitions elsewhere and play matches with other schools. It is a pity that the Inter-School Tournaments have been abolished by the Department, whatever their evils may have been, they were at any rate very useful in creating in the minds of the boys a love for their *Alma Mater* and in developing what is called *esprit de corps*. There should be some such activities in the school as give a boy a chance of jealously guarding the honour of his school and of always setting a high ideal before him.

Debates should be held regularly, dramatic performances should be given from time to time to break the monotony of work and Prize-distributions and some such functions should be held to make the guardians interested in the progress of the school. Boys should not confine themselves to their textbooks only, but should read extra books to develop a taste for reading. This object can be attained if the school possesses a Library well-stocked with books, and a Reading Room provided with papers and magazines. It is not a very helpful scheme to leave the whole of the Library in the hands of one man, that is, the Librarian; the class teachers should lend

a helping hand for they are the best judges of what a boy's requirements are. Each room should have a small library containing suitable books for a particular class. There should be a school museum, where every piece of work which is done by a boy and is above the average should be kept for show; it will be an encouragement to those who have their work appreciated in this way, and a great stimulus to others who have not yet come up to this level. There should be a School Magazine which would contain an account of all the interesting things which happen in a school. Boys should be encouraged to write, it pleases their heart and fires their imagination when they see their own workmanship and their names appearing in print. A magazine will also draw nearer all those who are connected with the school.

PRACTICAL WORK AND VOCATIONAL TRAINING.

In our schools too much emphasis is laid on brain work; boys read and read and there is no provision for practical work. Unemployment in India will become less; if the energies of our boys are diverted from the literary side to the practical side. In the lower classes Nature Study, Experimental Science and Drawing should be compulsory and in the higher classes every facility and encouragement should be given for learning Science, Agriculture, Manual Training and various arts and handicrafts. Our boys seem to have no inclination for practical work, so many of them come from the agriculture class but after passing the High School examination they think it beneath themselves to do manual labour. They do not go back to their ancestral occupation, but earnestly seek a job of Rs. 20 or Rs. 30 in the Collector's court.

What I have written above are but common-Place observations, and I daresay every good

school keeps them in view. Unfortunately our schools are not well-equipped, and teachers working in them have often to labour under several disadvantages. If it is the duty of teachers to identify themselves with all the activities of the school where their lot is cast, it is also their right to be given all the facilities to teach. Government schools are better off, but teachers in private schools have many difficulties to face. There is no security of tenure, there are no future prospects, the school has no funds, the classroom accommodation is inadequate, there is no parental co-operation. Be it what it may, it is our duty to help the rising generation as best as we can, to take an optimistic view of the whole situation, and to be always guided by the motto "Whatever thy hand finds to do, do it with all thy might."

TALISMANS AND CHARMS

For those People to Avoid all Sorts of Misfortunes and Enter the Gates of Successful Life

	RS. A.
For Success in Spiritual and Religious life ...	10-0
For Honour, Riches, Learning and Greatness ...	7-8
For Health, Physical Strength, &c. ...	7-8
For Power, Eloquence, Speeches, &c. ...	8-0
For Success of any Undertaking or Litigation, &c. ...	0-8
For Success in Sport, Racing, Cards, Games of Chance, &c. ...	7-8
For Success in Trade, and Business ...	10-0
For Men's Love to Women ...	7-8
For Women's Love to Men ...	10-0
For Love of Opposite Sex attractive power ...	7-8
For Agricultural Prosperity, Farming, Good Crops, etc. ...	7-8
For Success in Mining Plumbago, &c. ...	10-0
Rabbi Solomon's Special Talisman for every success ...	15-0
Specially valued and won by every successful Hebrew, 2nd quality ...	21-0
1st quality ...	30-0

NOTE.—A Money Order or Indian G.C. Notes will bring the Talisman to your door. Always the full amount should be remitted in advance. No V. P. P.

Extensive Life Readings, one ... Rs. 15
Two Rs. 25, Three Rs. 30 or more at Rs. 10 per Reading.

D. A. RAM DUTH,

ASTROLOGER,

No. 30 & 55, (E. R.) Chetu Street,
COLOMBO (CEYLON.)

THE ARTISTIC VALUE OF PRESENT DAY ENGLISH FICTION.

By Mr. L. V. RAMASWAMI AIYAR, M.A., B.L.
Maharaja's College, Ernakulam (Cochin State.)

THERE is a certain outlook on life, in which a self-complacent pride in the heritage of the past is always accompanied by a subtle aversion to change. Deep down in the minds of many amongst us, there is a feeling which harks back with excessive satisfaction to the 'goodness' and 'greatness' of a by-gone day and fights shy of the changing present. Such a frame of mind approves of everything that is old—"old friends, old tunes, old manners, old books, old wine," as Goldsmith put it. This is not exactly die-hard conservatism but a far-subtler feeling, though akin to it. The very importance which it attaches to the past makes it view the values of to-day with suspicion and disdain. Morley's observation that the senses are as often the tools as the guides of reason, is particularly true here. The senses of perception observe only what the mind under the sway of an almost irresistible belief in the past, wants them to observe, and the result is that the prejudices are confirmed more than ever. The opposition which this frame of mind offers to reform is often harder to overcome than die-hardism.

Such a feeling is very common in the field of literature even amongst those who would resent being called conservatives. To those whose tastes are ruled by this feeling, present-day literature offers no charm. Literature has ceased to grow in their view. Modern fiction, of all literary forms, has ceased to count, in their estimation. "Intelligent persons do not attempt to keep abreast of modern fiction because they enjoy being intelligent and wish to remain so," says a

critic. "The flood of spiritually significant novels has begun to ebb and it ebbs on increasingly," says another. "If the English novel did not completely change in ideal and construction, it would cease to be a living form of literary art," says a third. It is true that the subject-matter of present-day fiction is different from that of older generations, that the methods adopted for composition and construction are different and that the objects aimed at and the outlook on life are dissimilar; but differences in subject-matter, methods of composition, aims and outlook ought not by themselves to shock the unbiased literary critic. "No age is the Law and the Prophets," as Elizabeth Drew puts it, "we are eternally sowing our future and reaping our past, and as we thus cultivate our collective garden, most of us have some feeling of inquisitiveness about the quality of the rotating crops." And is the quality of these "rotating crops," after all so degenerate, so deficient in permanent artistic values as to deserve violent condemnation? Let us hear Elizabeth Drew again: "There are signs and assurances in the contemporary novel, of individual faiths and convictions of far greater persuasiveness than any mere traditional tenets. Throughout the last twenty years of so in the history of fiction there have been certain outstanding illustrations of alternative conclusions to a half-hearted conformity with outworn codes: there has been Arnold Bennett's sense of the inwrought dignity which sheer staunchness of character inevitably creates, and of the tremendous basic solidity which the relationship of marriage can give to human existence: there has been Conrad's insistence on honour and loyalty among men as the only root of human solidarity, and Galsworthy's faith, implicit in everything he writes, of fraternity among all living

creatures. The dauntless and incessant mind of Wells, as his enemies are continually pointing out, has produced an embarrassment of solutions; but in spite of his mercurial imagination, his millennia, all develop from a central inspiration which nothing has ever shaken,—his imperishable hope in the Undying Fire, the rebellious god in the heart of man who refuses to allow him to accept his fate meekly."

There are two main grounds on which the artistic value of present-day fiction is attacked: the obtrusion of contemporary life and problems in an excessive measure, and secondly, the didactic purpose that, in greater or lesser degree, underlies these compositions. The first objection is easily answered. Even the most refined of aesthetes cannot escape contemporary life. It is but a half-truth to say that great authors, like Carlyle's heroes, mould the ages in which they live. The test of excellence should be sought elsewhere. The artistic value of modern English fiction cannot indeed suffer if it has, on the basis of material drawn from contemporary life and conditions, dealt with the universal aspects of things in a noble and imaginative manner. Let us see clearly what modern English fiction deals with. "Just as the novelists exhibit an almost brutal candour," says Elizabeth Drew, "in unmasking individual counterfeit human beings, so do they expose mercilessly the shallow thinking and feeling behind the conventional attitudes towards collective human problems. The Church, the Empire, social injustice, political theory, domestic morality, all are openly reviewed and examined with a direct and unashamed outspokenness. Unpalatable actualities are no longer to be evaded; facts have got to be faced. Society must realise that war is not

glorious and noble, but filthy and futile, that imperialism produces bigotry and greed; that parents and children almost always disagree; that men get tired of their wives, and wives of their husbands; that the unmarried girl is not necessarily chaste; that the Church is as insincere as the laity, and that Politics and Business and Education and Finance and the Press are all corrupt, and ruled first and foremost by self-interest." If these and similar topics are discussed in such a way as to bring out some of the universal, ever-permanent complexities of human feeling and existence, and to give us creative visions of what life is, what justification have we to question, much less to condemn, the artistic value of present-day fiction?

The other objection relates to what has been called the "didacticism" of present-day fiction; but is there not a didacticism of the right type, as distinguished from the wrong variety? In one sense Shakespeare himself is "didactic;" "Lear" and "Macbeth" are not merely "things of beauty" to us, affording us sensual thrills, but on the other hand, the artistic impressions received by us on reading them are closely intertwined with the intellectual and moral stimulus which exercises over us a *Kathartic* effect, chastening our feelings and thereby teaching us the true nature of life too. The distinction between the genuine and spurious varieties of didacticism is well brought out by G. K. Chesterton when he says that "the good fable is a moral while the bad fable has a moral." If the author deliberately sets before himself the task of exemplifying some pre-conceived ethical formula or code and tries to fit in life with this code, by warping, twisting and otherwise misrepresenting the facts of life, then the work fails to fulfil the function of Art and the

didacticism stands self-condemned; but if, on the other hand, the author artistically dealing with the affairs of life, discusses problems affecting the permanent happiness of man and in the process allows his own view of life to develop, we have no right to condemn the purpose, if any, inherent in the scheme, so long as it does not fail to convey the artistic appeal. Take a work of art like Romain Rolland's "Jean Christophe." Does its excellence as a monumental example of splendid artistry throwing over us, every time we read it, a halo of emotional excitement, suffer in any way because we are also unobtrusively taught by it some of the precious truths of Life? The only test is whether the author, subordinating the art-value of his creation, has exalted the "purpose" so high and so much beyond the actual facts he describes, as to make the reader feel at every step the gap that yawns between the author's creative capacity and his conscious moral preaching.

Judged by this standard, has modern fiction, as represented by its best specimens, any reasons to be ashamed of itself? The answer to this question has been sought to be given in two recent works, through able and scholarly discussions of the personalities and tendencies of modern English fiction.* Since almost every work of English fiction published to-day contains in it, directly or indirectly, an expression of the author's outlook on contemporary life, a proper criticism of these works of fiction depends upon a judicious freedom from bias in the examination of their qualities. It is indeed doubtful if amongst the English critics of to-day there are many who are free from this bias,—whether political, religious

or communal,—which, if it exists, would necessarily stand in the way of impartial adjudgement of even the artistic value of works. Illustrations of this bias abound in the critical reviews. To give only two recent instances from the *Nation* and the *Athenæum*, there was Alfred Noyes, the child of the Tennysonian tradition, the other day violently attacking the worth of Edgar Allan Poe's stories whose workmanship, artistry and emotional appeal Noyes could not understand owing to an insuperable bias of temperament and training; and there was recently a religious dignitary fulminating in the columns of the same journal against Herbert Spencer whose rationalistic mind the reverend critic could hardly understand, much less appreciate. Elizabeth Drew, judged from her views, seems to be remarkably free from bias of any violent kind. The German critic too could be presumed to a great extent to have adopted an unprejudiced attitude in this respect. Both the books, besides dealing with the outstanding major personalities in English fiction-writing to-day—H. G. Wells, John Galsworthy, Arthur Bennet and Joseph Conrad—discuss the main tendencies of the time as reflected in the lesser writers. Kipling and Hardy are excluded from both on the ground that "their prose works mirror forces which were real in a generation that has passed away." The new tendencies of the Age are divided by Dr. Schirmer into (i) Revolution, (ii) Expansion, (iii) Mysticism and (iv) Psychology. Much the same ground is covered by Drew in her chapters on "The Novel and the Age," "Sex Simplexes and Complexes," and the "New Psychology." Drew's work, in addition, has a chapter on "Yokel colour" and another on "American Tendencies."

Both these works examine in detail the criticism levelled against modern English

fiction that it is decadent; but while Elizabeth Drew emphatically repudiates the charge and recounts to us the permanent attainments of modern English fiction, Dr. Schirmer takes up a less definite and more cautious attitude. He says that though the charge of decadence is groundless, it is true in so far as it expresses the artist's dissatisfaction that the enormous mass of Fiction-production in English to-day is very much out of proportion to their content and that the "formlessness" of modern fiction is indeed a great and regrettable fall from the level of high form attained by the Realistic Novel of an older generation. Says Dr. Schirmer: "In no other history of Literature as in the English, is the artistic function of careful weeding-out such a necessity and secondly, in no works of fiction as in the English is the form so arbitrary, so capricious, so over-grown with the author's impressions, so over-weighted with subsidiary things, so wide, so endless."

Dr. Schirmer seems indeed to be a little too much obsessed with the infinitely greater artistic value of Realism and this has made him a little unjust to H. G. Wells. "Wells's intellectual and moral personality," says he, "ever presses itself more and more like a wedge into his criticism and descriptions. This results not in a mirroring of Reality but in injury to the artistic form of his work." The criticism is not without a basis of truth so far as the later writings of Wells are concerned; but it is indeed open to question if Wells's views of life (especially in his earlier works) have so far injured the artistic quality as to deserve the rather unmerited condemnation pronounced by Dr. Schirmer that Wells's works will not live. Elizabeth Drew is more discriminating when she says, "But Wells is a living example of the great truth

that it isn't what a man thinks or says or does that really matters; it is what he is. In his literary work he is an intellectual before he is an artist: instinctively he tries to grasp and interpret life through ideas rather than through experience, and his ideas are far dearer to him than experience as such. But though his books are full of fine artistry and fine thinking, and at his best, he will undoubtedly live as one of the outstanding men of letters of this age, it is not his range of ideas, not his creation of perhaps the most comprehensive picture we have of our own epoch, which make his greatness. It is his spirit. It is not possible to read Wells without a glow of invigoration and hope in the potentialities of humanity: he has such a splendid ferment of eager good-will towards his fellows and such an inspiring rebel fortitude."

To Galsworthy too, Dr. Schirmer is a little unjust. Says he: "In spite of the masterly workmanship shown in his great novel-series (the Forsyte Saga), which earned for him from the French the encomium of being the most perfect and distinguished of English writers of the last thirty years, the appeal of his works is similar to that of Wells's (which he enhances) pre-eminently ethical, because the thoughts and the feelings of the writer are set in motion towards an ethic aim..... Max Beerbohm felt it when he caricatured Galsworthy thus: *looking on life and seeing that it is foul*—he does not see Life with the eye of an artist." Elizabeth Drew is more discerning when she says: "Pity, not terror, is what Galsworthy brings to his tragic situations, and indeed his pity for any suffering is the most obvious characteristic of his personality. Besides, he sees the truth of life as a series of effects planned by some great artist in irony."

* 1. *The Modern Novel*, by Elizabeth A. Drew.

2. *Der Englische Roman der neuesten Zeit: Present-day English novel*, by W. F. Schirmer; (Carl Winter's University Book-shop, Heidelberg.)

Both Drew and Schirmer, however, are agreed on one point, viz., that a close and sympathetic reading of the novels of to-day would reveal to us elements that vigorously make for a new era in English fiction. And this is the view which every careful student of modern English fiction would take. The craze for French Realism which was so prominent in England in the latter portion of the last century is no more in vogue. In its stead has come up a New Idealism which, whether it obtrudes itself before our eyes as in Wells or remains in the background as in the best works of Bennet and Conrad, can, on no ground, be said to be wanting in undeniably permanent values. How far this Idealism will take us and what new artistic forms it may give rise to we cannot say, but certain it is that we live in an age which is not, as is often remarked, barren of literary and artistic excellence, but full of promise, performance and achievement, and probably already rich in an outstanding brilliancy such as can command unprejudiced appreciation only at the hands of generations to come!

THE SCHOOL ARITHMETIC
BEING SOLUTIONS OF THE
QUESTION PAPERS SET FOR THE
LOWER SECONDARY
EXAMINATION FOR THE
YEARS 1880 TO 1904

CHIEFLY INTENDED FOR THE USE OF PUPILS
 OF THE 1ST, 2ND & 3RD FORMS

BY
 H. CHENNAKESAVA AIYANGAR.

Price—8 As.

SRINIVASA VARADACHARI & CO.,
 4, Mount Road, Madras.

WHO IS THE BEST TEACHER?

By Mr. S. NATKSA IYER, B.A., L.T.,
Lecturer, Maharaja's College, Pudukotah.

EVERY one accepts that the teacher's profession is the noblest of all professions and the teacher's task is the noblest of all tasks. The Great Lord Sri Krishna was himself a teacher—the Greatest Teacher who taught the highest knowledge to the most devoted of his pupils Arjuna on the field of Kurukshetra. Socrates has plainly said that “no man goeth about a more godlike purpose, than he that is mindfull of the good bringing up both of his owne and other men's children.” It has also been remarked that the very foundation of the whole Commonwealth is the proper bringing up of the young (*Fundamentum totius reipublica est recta juventutis educatio*). The upbringing of the young is left in the hands of the teacher whose responsibilities are accordingly very great.

There are teachers here as everywhere else in the world. There are teachers with experience great and small. There are teachers with or with no knowledge of the art. But all do work, each as best as he can, with the facilities he commands or the resources he possesses. Yet in the eyes of the world they pass for good teachers and bad teachers. Some are ranked high and some are ranked low while some others are reckoned the best in the field. We often hear of the great Arnold of Rugby as a school-master of wide celebrity, and even in our own country the names of E.B. Powell, Anderson, Muller and Gopal Rao are familiar to us either as educational pioneers or as teachers of well-established reputation. Yet apart from one's own technical knowledge or skill, apart from one's own experience in the field and apart from the reputation which one might have gained in

the past or may gain in the future, there is always the question and the question has more than once suggested itself to me how far we are teachers in the real sense of the term and who is the best teacher, which it is our present purpose to solve.

The aim of all teaching, as every one knows, is instruction in useful knowledge. Plenty are the things about which useful knowledge can be imparted to pupils and he may, perhaps, be considered to be the best teacher who can convey most of such knowledge to the pupils' mind. We cannot, however, claim to be omniscient and pretend to all knowledge of the world, bound as we are by limitations of time and space. The field of knowledge, again, is so vast that one cannot hope to explore it all himself within the short span of existence. Hence it is we find the bureaucratic system prevailing even in the domain of knowledge and the principle of the division of labour followed. There is the portfolio of the man of letters and that of the man of science, each confining himself to the work of his branch and none interfering with that of the other. The so-called savants and scholars are often only those who have devoted their time and energy to the study and mastery of one or other of the different branches of science or knowledge and he who is well conversant in any one branch is perhaps the best person fitted to convey instruction to pupils in that branch of knowledge.

But a scholar is not necessarily a teacher, and scholarship, by itself, does not always make a good teacher. One may, on the other hand, be a good teacher without being much of a scholar. For their aims and methods of work are totally different. The scholar gains knowledge for himself while the teacher

imparts knowledge to others. The scholar, in seeking to gain knowledge, is wholly concerned with his own mental contents, whereas the teacher has to deal with the mental contents of his own pupils which vary considerably with age and capacity. Again the scholar's attention is exclusively directed to the nature of the knowledge he seeks to gain and the means or processes by which such knowledge is gained are of little importance to him, whereas they are of paramount importance to the teacher. The needs and qualifications of a teacher are, therefore, far different from those of a scholar and a knowledge of the pupil to whom a subject is taught is more important to the former than a knowledge of the subject itself.

In knowing the pupil, the teacher has to know the nature of the mind and the senses. The senses are the gateways of knowledge. They are the means by which impressions are conveyed to the mind. Each sense performs its own function and all help to fill the pupil's mind with knowledge. The softness of the velvet cushion is felt by the sense of touch as the sweetness of the mango by the sense of taste. Impressions of the Cinema show are conveyed through the eye while those of the music in an opera by the ear. Each of the senses can be trained to do its function best and can, sometimes, be even made to imitate the function of another with almost equal success. The eye, for example, can be so trained as to render eye measurements quite as exact as those of hand measurements. In the case of the blind, the sense of ear and the sense of touch receive their maximum training and it is because of this training they receive, their instruction is rendered possible. It is not desirable, however, in normal conditions, that one sense

should be overtaxed at the expense of another or left to go without being employed at all. In practice, however, it is the sense of ear which is more often appealed to and employed than any other sense; and where one sense is overworked or made to do the function which legitimately belongs to another, the impression conveyed is vague and gloomy and does not often last long. Each sense should, therefore, be made to do its proper share of work and all should be employed without exception if a healthy and wholesome process of instruction is needed. It is because of the neglect to train and employ all the senses to do their due share of work in the imparting of knowledge to pupils that Dr. John Browne characterises the school more as a cemetery than a house of knowledge. It is necessary, therefore, for one who undertakes the task of imparting instruction to pupils to know the nature and functions of the senses and to always employ the right sense in conveying the right impression to the pupil's mind.

Again the mind of the pupil is not as is often supposed, a *tabula rasa*, a clean board. It is not as Dickens's Mr. M'Choakum child thought, 'an empty vessel to be filled by the teacher at his own discretion with imperial gallons of facts.' It is full of centres of activity with ideas already implanted in it. Some of these ideas are often akin to those which are sought to be introduced into it. It is by summoning these kindred ideas and with their help and co-operation that new ideas can be imported into it and made part of the pupil's knowledge. A knowledge, therefore, of the previous mental contents of the pupil is also necessary to impart instruction successfully. Such a knowledge can be had only by a close and intimate acquaintance

with the pupil's own environment and the manifold forces that ever re-act upon his mind. It is he therefore who, apart from his own expert knowledge of any subject or subjects, keeps in constant touch with the pupil's own surroundings and thereby gains a full and accurate knowledge of his mental powers and who has, in addition, the power to appeal to and employ all the senses in conveying instruction to his pupil—it is only he who has the strongest claim to be considered the best teacher.

It may not be uninteresting now to consider how far those that actually do the work of teaching approximate to this standard and entitle themselves to the rank of the first teacher. For, to do the work of teaching or instruction is never the privilege of any one individual or a class. So many agents happen to be engaged in it, each contributing his own share and all helping to produce the sum-total. Let me first take the case of the school pedagogue or the teacher styled as such.

It may well be presumed that he possesses a fair knowledge of the subject he professes to teach or equips himself with such knowledge as often as may be necessary. He may also be credited with some knowledge of the technique of the art though it is doubtful how far he turns that knowledge to practical advantage. But the conditions under which he works which are of far more importance than anything else, are not quite conducive to a process of sound and efficient instruction. In the first place, he is far too bound by limitations of time and space. The school time is only a part of the teacher's time or that of his pupil. It is only a fraction of the hours of the day and it is the only time in which the teacher and the pupil remain in

contact with each other. All the rest of the time they are away. But even this time, so short as it is, the teacher cannot claim as his own. He has to share it with his co-workers at school. Part of it is taken up by petty details of school routine relating to order and discipline. So the part that is actually left for real teaching is very little indeed. Again the activities of the teacher are only confined to the limits of the school and the forces which react upon the pupil's mind and of which the teacher is aware are only those of the school environment. But beyond the narrow limits of the school, there are thousand and one forces which engage and influence the pupil's mind, all of which do not come within the purview of the teacher. His knowledge of the nature and contents of the pupil's mind being thus far too limited, the task of instruction is very often rendered more difficult and sometimes even proves barren of any good result. The school environment, so circumscribed as it is, is not yet so rich in details of beauty and taste as it ought to be. The school is always spoken of as a world in miniature. It has to embody in itself all the variant characteristics of the greater world beyond and be fitted to give the pupil a foretaste of all those experiences which he may have later in life. The very location of the school amidst a scene of valleys and lakes, amidst groves of trees and gardens of flowers with rivers or brooks running between, with bees humming from flowers and birds chirping from tree-tops, the location amidst such happy scenes, is sure to give it the character of the world of nature beyond, and to evoke in the mind of the pupil all those wholesome thoughts and feelings which such a world would naturally do. But the sites of most of the schools in the country

are not only not of this ideal description but are capable of producing the most depressing effect. The school museum, though artificial in its character and setting, nevertheless, serves to show the wonderful variety in God's creations and place before the mind of the pupil prototypes of living beings and objects which adorn and enliven the whole surface of the earth. If the school is to be really a world in miniature as they say, then a school without its museum is a house without its inmates and many are the school-houses in the country without their inmates. The school library and laboratory are intended as valuable aids for imparting instruction on the most efficient and rational lines and few are the schools which boast of a good library or laboratory. But even in schools where the facilities of a good library or laboratory are provided, it is always a question whether such facilities are availed of to the full extent desirable. The natural inertia of the teacher acts in many cases as a militant force, in spite of the facilities afforded. There are times when a geography or history lesson is taught without the aid of maps and the science experiment conducted is no better than a Barmecide feast. Knowledge which is imparted in this indifferent fashion, never goes deep into the pupil's mind but remaining as a crust on the outer surface, is washed away by every wave of oblivion. The school pedagogue, therefore, working as he does, under such imperfect conditions, with such imperfect means and in such indifferent manner, fails to approximate to the standard set before him and unfit himself to the rank of the first teacher.

Let me now consider the case of the parent who also plays the role of a teacher. He is in fact the first teacher who initiates the

pupil into the world of knowledge. It is only from him the child first learns its A B C. But he never sets about his task in the avowed manner in which the professional teacher does. However he seems to possess all the potentialities of the latter and to be capable of doing all that he does for the pupil. Both father and mother do the work of teaching but the mother very often does better than the father. The home is the place where they work and they engage the child all the time it is away from school. The home environment is indeed smaller than that of the school but it has evidently more attractions for the child than the school. There are more opportunities here for the play of its senses and also its passions and it is precisely these opportunities that a shrewd parent avails himself of in imparting instruction to his child. As they sit in the parlour, as they dine at the table or as they walk in the garden, the parent gives his lesson to the child which it gladly learns. The parent knows the mind of the child, where it is strong and where it is weak, what it contains and what it does not much better than the teacher because he moves more intimately with it and is more familiar with its environment. The means he employs is more often the concrete than the abstract and he appeals to the child's senses much better than the teacher. Hence the task of instruction is rendered easy and wholesome and what little the parent teaches to his child is often well-taught and takes a firmer root in its mind than hundreds of things imported into it by a host of teachers.

It is not every parent, however, who is conscious of his own powers or confidence in his own self. Hence it is that so many depend on others even for what little they can do

themselves for their children. But where a parent knows his own powers and cares to employ them, he scarcely finds the time necessary to devote to the instruction of his child. The father often goes out to earn his living while the mother is absorbed in the duties of home. Such of them however who manage to spare some time to do teaching work, do not often command the facilities necessary for effective teaching. There is also the inertia of the parent which often acts as a deterrent force and makes him neglect what may be considered an important duty which he owes to his child. The parent, therefore, though he has some advantages over the teacher, suffers more or less from the same difficulties and defects and establishes no stronger claim to the rank of the first teacher.

Let me now consider the pupil himself as his own teacher. People always speak of self-taught men as though self-taught men are a rare commodity. In fact, all are self-taught men to a degree, and no man is illiterate. The peasant who works in the fields has knowledge of his own and his knowledge of his own work is superior to that of anybody else. As to ourselves, all the knowledge we possess, we have not derived from our parents or teachers. Part of it is our own and we owe it to our own individual efforts. Even the child that is born begins to learn soon after its birth. It is guided by its own instincts. It knows that the sugar tastes sweet. It enjoys the beauty and fragrance of flowers. It appreciates the sound of music. As it grows, it gets accustomed to the use of its senses and employs the right sense in taking in the right kind of knowledge. It tastes a mango, smells a flower and hears a tale. It walks and steadies itself

when it fears a fall. It speaks and corrects itself when it does not well articulate. Thus it learns the language before it is taught the alphabet and has its schooling before it is put to school. As the child grows to be a boy he is still his own teacher. He has his environment either at home or at school or wherever he is. His mind is acted upon by forces of which he is perfectly aware. He knows his mental contents much better than his parent or teacher and knows to employ his senses much better than them both. He knows what old ideas are in his mind and uses them in taking in the new. His mind is thus enriched with knowledge superior indeed to anything else gained through any other agency. Such knowledge unlike that given to him *ab extra* does not merely remain external to his soul but goes into the *succum et sanguinem* and forms part of their very essence giving him strength and life.

The parent who teaches his child, ceases to teach after a time. The teacher at school ceases to teach after the pupil leaves the school. But the pupil who is his own teacher, teaches for life. Study, so far as he is concerned, neither begins at school nor ends at school. It begins much earlier and continues much later. Everyday he finds himself amidst new surroundings. Every day brings him some new experience and some new addition to his knowledge. His stock of knowledge thus increasing day by day, the sum-total of what he learns by himself is found at last to be much greater than what is imparted to him either by his parent or teacher. Looked at, therefore, from whatever stand-point, the pupil who is his own teacher stands ahead of the parent-teacher or the school teacher. He is in more intimate contact with his own ever-changing environment than either of the

two. He has a more accurate knowledge of his own mental contents than they both and he knows better than they do how to employ and often does employ the right sense in taking in the right kind of knowledge. Hence he has every reason to be considered the best of teachers.

It may now be shown how the principles underlying the modern methods of educational practice and the opinions of expert thinkers lend their full support to the conclusion now arrived at after an *a priori* consideration of the facts relating to child-mind and body. The Kindergarten system is based on the self-activity of the child ego and this activity is directed to the attainment of definite ends. With number work in the first grade, children are made to handle objects, make letters or draw sketches so as to give free play to their active powers. Herbart and the whole school of empirical psychologists believe that the mind grows with what it feeds upon, that it possesses a kind of vitality, an energy, an attractive or repulsive power of its own and that it is the first active agent in building up the pupil's knowledge and their whole theory is based upon such a belief. Emerson, the great American writer and thinker, with a true perception of the child's own latent powers of growth warns parents and teachers not to stifle or arrest such a growth by too much interference. He asks the parent not to be too much the parent and the teacher, too much the teacher. Herbert Spencer, in one of his chapters on Education, lays it down as an important general principle to be followed with advantage, that education should be made to be a process of self-instruction. The framer of the Dalton Laboratory Plan fully recognises the fact that the pupil is his own best teacher and

leaves the whole work of instruction to be done by the pupil at his own initiative and responsibility, the teacher merely serving as a guide. He has only to create the right environment, afford the right facility and do everything in his power to help the process of self-instruction. The Project-method which has recently been elaborated by a new school of American educationists aims at making the pupil his own active agent in acquiring knowledge not merely having a scholastic interest or possessing only a hypothetical value but really applicable to practical purposes in life. The 'proponents' of this method recognise the wide gap which separates the school world of theoretical knowledge from the outer world of practical experience and try to bridge it over by leading the pupil from the lecture-room to the laboratory or the open field and help him to tackle problems of everyday life by entering on a course of 'practicum.' Scouting of which so much is said at the present day, both for and against it, is only a self-educative process carried out entirely on the lines of the Play Way and the Boy Scout and the Girl Guide Movement exemplifies in a wholesome way the modern combination of knowing and doing. The young Scouter while he gains an admirable training in the practice of the social virtues during the periods of camp life, practically solves for himself some of the fundamental social problems of the day and gets at the same time a clear and practical acquaintance with the duties and responsibilities of citizenship. There are various other methods of modern educational practice, the tendencies of which are—to use a technical term—paido-centric, that is to make the child the central figure in the system. The aim of all these methods is to bring the child more

to the point of focus in the lime-light and to remove the teacher to a place of less prominence. All these methods serve to stimulate and foster the pupil's self-activity and make him the teacher and the taught at the same time. Under the New Teaching Scheme, therefore, he is a good teacher who makes it possible for his pupil to do without him and he is a good pupil who is able to dispense with his own external teacher. The increasing recognition of the importance of self in the education of the youth has given rise to such common sayings as "All true education is self-education" and "There is no education but self-education."

The professional teacher cannot on this account deny himself any responsibility and think that his function at school is nil. All these maxims, if at all they bear any merit, bear only the merit of an ideal. And just as a doctor may cheerfully admit that 'Nature is the best physician' and yet go his rounds with prescriptions in his pocket, so the teacher too may accept all the praise of self-education and yet feel that he has an honourable function to perform in the educative process. His relation with the pupil or the resident teacher *inside his skin* as Dr. John Browne puts it, is one of partnership in business in which most of the work is done by the latter, he, being the chief directing spirit or guide as has already been said.

But even as a guide the responsibilities of the teacher are great. A guide may lead and mislead. A teacher may lead his pupil into a dull and dreary waste, taxing his energies and straining his own powers all to no purpose. He may also lead him into rich fields and pleasant pastures helping him to reap the wholesome fruits of knowledge. Much therefore depends on the knowledge, skill and tact

of the teacher, and the shaping of the pupil's future lies as much in his hands as in those of the pupil himself. It behoves therefore all those who belong to the honourable profession of teaching to understand clearly what their own limitations are and at the same time to realise fully the great responsibilities devolving upon them and work with unabated zeal and enthusiasm heedless of all the difficulties and troubles that beset their path and heedless also of the many belittling forces that may be at work, ever keeping before their eyes the exalted nature of the duty which it is their special fortune and privilege to discharge. May God give them the health and strength necessary to guide pupils aright in their journey through the realms of knowledge!

FIVE PRECIOUS BOOKS

(OF POCKET WISDOM SERIES).

1. Short Moral Quotations from Shakespeare, (from all his 37 plays.)
2. Longer Moral Quotations from Shakespeare, (from all his 37 plays.)
3. Thought-Gems—Contains shortest, sweetest quotations from great thinkers.
4. Moral Poems—Contains over 2000 lines, from the best of poets.
5. Golden Proverbs.

The main object of these books is the formation and development of character, which is the end and aim of all true education, which is the back-bone of a nation which saves, frees, strengthens and purifies a country, and which must be kept in view by every educator, teacher, student, parent and patriot to vitalise the youth of the country with character.

Price As. 6 each. Postage etc., extra.

N. B.—Twelve or more copies bought at a time will be sent post free.

(Rich discounts to teachers).

For books, please apply to:—

Mr. M. VENKATASIAH, B.A.,
Krishnaraaj Mohalla, MYSORE.

XXXIII—77

IN THE CHILDREN'S WORLD—IV. LESSONS FOR INFANTS, MORE SENSE TRAINING EXERCISES.

By Mr. S. JAGANNADHAN,
Kindergarten Assistant, Teachers' College,
Saidapet.

INTRODUCTION.

DURING the early period of childhood the child learns through the senses. Gradually he begins to imitate his parents. First he snatches the things and then gradually learns to feel them. He is gaining experience through activity. The senses are the gateways of learning. When the power of speech develops, he begins to express his thoughts and experiences through the medium of language. It is more the duty of the home than the school to provide all facilities for the child to learn through his senses, his powers of imitation and self-expression. I give below some lessons on sense-training and I reserve my general observation to the end. [For previous lessons on this subject, vide "Educational Review," April and May 1927.]

SENSE-TRAINING.

LESSON B.

Tests:

1. Sense of hearing.
2. Colours: Recapitulation.
3. Form.
4. Mixing two colours so as to produce a third colour.
5. Sense of sight: thick, thin.

Test I. Sense of hearing.

MATERIALS REQUIRED.

- 4 boxes with lids.
Box A contains some sand.
Box B " a piece of stone.
Box C " some seeds.
Box D " a wooden cube.

PROCEDURE.

Show box A to children and let them see what is in it. Then close it and shake the box. Let them hear the sound well and convey that sound impression to their minds.

In this way show boxes B, C, D. First open and then shake them with closed lids. Let children hear the respective sounds.

(i) Close all the boxes and hide them underneath a duster. Choose any one at random and shake it. Test whether by listening to the sound they correctly and readily name the object within the box.

ALTERNATIVES.

(ii) Let the children close their eyes.

Take any box and shake it and test as before.

(iii) The teacher sits behind the children and shakes the boxes. The children hear the sound and name the object that produced the sound.

Test II. Colours: Recapitulation.

MATERIALS REQUIRED.

1. Stuffed birds or coloured drawings of birds:
Parrot; King-fisher; Oriole.
2. As many covers as there are children. Each cover contains in it 4 pieces of coloured paper, one in each of red, yellow, blue and green.

PROCEDURE.

(i) Naming the colours of the birds.

1. The Parrot is green.
2. The King-fisher is blue.
3. The Oriole is yellow.
4. The Parrot's beak is red (pointing to the parrot's beak).

(ii) The teacher now shows the children a bag containing some covers. Just as a post-

man would deliver letters, the teacher goes to each boy, calls him by his name and hands over a cover to him. He then tells them that they should tell him what they find in the covers.

A. The children open the cover and enumerate the colours. The teacher goes round the class, stopping before each child and verifying whether the child is naming the colours correctly.

B. The teacher now sits in the centre of the class and asks the children to show him first red, then blue, then green and lastly yellow. They show these and again put them into the cover in the same order.

C. The teacher asks the children to learn to write their names on the covers.

Test III. Form: Geometrical Insets.

MATERIALS REQUIRED.

Different kinds of geometrical forms: squares, rectangles, triangles, circles, etc. There are 3 or more different sizes in each. One form for each child is necessary.

PROCEDURE.

(i) The teacher first takes out the insets and shows to children one form after another, and again places them in their original position.

(ii) The teacher gives the inset with the frame to the children and they repeat what the teacher did.

(iii) Each child is asked to take an inset. The frames are mixed together. Now the children have to choose the exact frame into which their inset will exactly fit.

(iv) Each child is given a frame and now the insets are mixed together. Each child is asked to find the inset that will exactly hold in the frame.

(v) Each child is supplied with a geometrical inset together with the frame.

A. He takes out the inset and places it on the floor. He traces round the edges of the hole in the frame and conveys to his mind the idea of the figure by the impression formed by tracing with his forefinger.

B. Give a piece of chalk to each child and let him draw a figure similar to the one he traced just now.

C. The child then compares the figure with the inset lying near him.

D. Place the inset over the figure drawn and see whether it is correct.

E. Try, try, try again till the attempt meets with success. Partial success will be quite sufficient in the case of these little children. We only show the child the means of verifying for himself the correctness of his work.

Test IV. Mixing colours.

A. Yellow and blue produce green.

B. Chunam mixed with turmeric produces a red colour.

MATERIALS REQUIRED.

1. A piece of white paper for each boy.
2. Two brushes for each child.
3. Turmeric powder or paste and blue powder, or yellow and blue water colours in separate dishes.
4. A small plate for each child with some water in it.
5. A leaf near each child with some turmeric powder and some chunam on it.

PROCEDURE.

A. The teacher takes his brush and dips it into turmeric solution or yellow water colour

and makes a brush impression on his piece of paper. He takes another brush and dips it into the blue solution and smears the colour over the yellow impression so as to produce a greenish appearance. Let the children watch the teacher at each step and finally discover the new colour to be green. Each child can practice this for himself even at home without brushes also.

B. [This is the Hindu way of preparing Mangalharthi on the occasion of marriages and festivities.]

The teacher takes some turmeric powder or paste and puts that into the water in the plate before him. He stirs it with a stick or pencil so as to produce a yellow solution. Then he adds to this a little chunam and stirs it as before and this produces the red colour. Though this is not possible with the primary colours still thus children could be shown this simple thing which they see their mothers practise at home.

Test V. Thick and thin.

MATERIALS REQUIRED.

1. Three pieces of wood rectangular in shape of equal length and width but differing gradually in their thickness.
2. Three books of the same length and width but of different thickness.
3. Three pieces of cardboard as above.
4. Three pieces of paper as above.
5. Different kinds of cloth differing in texture.

PROCEDURE.

Show the three pieces of wood side by side. Let the children note by sight the difference in thickness. Let them learn to say:

This is thick. This is a little thin.
This is very thin

This is thin. This is a little thick.
This is very thick.

In the same way repeat the exercise with books and cardboard.

In the case of paper, let them hold the pieces of paper in their palms and feel the difference in thickness. Let them also feel the difference in the thickness or the thinness of the cloth by the sense of touch.

Let them also learn that the thinner the paper or cloth the sooner it tears.

LESSON C.

Tests.

1. Colour.

Three shades in each of red, blue, yellow and green.

2. (a) Voice training and sense of hearing (b) A game.

3. Sense of touch:

A	B	C
Light	Smooth	Soft
Heavy	Rough	Hard

4. Sense of smell: flowers, leaves, oil.

5. A game: recognise blind-folded the object given.

Test I. Colour.

MATERIALS REQUIRED.

1. Coloured pencils: red, blue, yellow green.
2. Coloured crayons.
3. Three grades in each of the above colours, painted on drawing-paper.

The topmost shows the thickest shade and the lowermost the thinnest. Over these three shades there is also fastened a piece of coloured paper of the same colour painted thereunder and not necessarily of the same shade.

PROCEDURE.

1. Name the colours of the pencils.
2. Name the colours of the several pieces of coloured paper fastened over the paintings.
3. Take only one, for example, and proceed as follows:—

Q. What colour is this paper? *Ans.* Blue.

Q. (Pointing to the thickest shade in blue) What colour is this? *Ans.* Blue.

Q. (Pointing to the medium shade) What colour is this? *Ans.* Blue.

Q. (Pointing to the thinnest shade) What colour is this? *Ans.* Blue.

By showing these one after another and exhibiting the four shades before them, they (the children) would have themselves been struck by the difference in shades.

Q. Now children, don't you see some difference, which is the brightest and which is the dullest? (or in other terms, the thickest and the thinnest.)

Show me which is thicker than the third.

Which is thicker than the second?

Say in order from the topmost:

Thickest; a little thinner; thinner still.

Say from the bottommost.

Thinnest; a little thicker; thickest.

In this way they are to express in speech what they see before them.

Test II (a).

Voice training and sense of hearing.

PROCEDURE.

Teacher says *g* (a:) *h* (i:) *o* (ou:) *u* (e)

The children say these after him.

Q. In which case do you make the loudest noise?

In which case do you make the lowest noise?

In which case do you say louder than in *g* (a:)?

In which case do you make a lower noise than in *o* (ou:)?

Test II (b).

Sense of hearing: a game.

APPARATUS REQUIRED.

1. A bell.
2. Drum and a stick.
3. Handkerchiefs.

PROCEDURE.

1. (i) Excepting one boy, all the others sit a ring. That one boy is made to stand at a distance blind-folded. The youngest in the class or any one in the circle has a bell given to him and he rings the bell. The boy at a distance has to come into the circle, proceeding step by step towards the place from where he hears the noise and touch the child with the bell.

(ii) Now repeat this game by substituting the drum for the bell.

Note 1. In advanced stages, the child who touches the boy with a bell is also able to name the latter by feeling his head, his hair, his hair-plait, ears, hands or legs.

2. The above game may also be repeated with only one boy made to ring a bell, while all the others stand at a distance blind-folded. When the boy rings the bell, all the others run towards the place from where the noise proceeded. Whoever touches him first wins the prize. He is the first. His sense of hearing is keener than that of the rest.

3. Another game for this exercise is as follows. The boys sit on the floor in front of their benches. One boy alone stands outside the class blind-folded. A coin is given to the class and the coin is passed round. One boy

in the class has it and strikes the coin over the bench or strikes on the floor and keeps the coin for himself. All the others also pretend to have the coin with them by sitting with closed hands. Now remove the blind and let him find out exactly who has the coin.

At first it is difficult to fix upon the right boy and the child risks his judgment to chance. But by repetition of the game, the children catch the principle and take pleasure in the game.

Test III (a) Sense of touch: light and heavy.

APPARATUS REQUIRED.

- I. 1. Three stones differing in weight.
2. Three books.
3. Three pieces of iron (weight for example.)

II. Woollen ball; Rubber ball of equal size.

Book—A piece of wood of about the same measurement as the book.

III. Small piece of wood—A small piece of cork bigger than the piece of wood. Small stone—A piece of wood bigger than the stone.

Iron weight—A stone bigger than the iron weight.

Note.—Here we have three different kinds of exercises. In group I the materials are the same, the sizes differ and consequently the children say which is heavier even without handling them. The bigger in size the greater in weight.

In groups II and III they must necessarily handle the things before they hit upon the right answer.

Same size; different material; different weight,
Different size do, do,

PROCEDURE.

Give a child a piece of wood in one hand and an iron weight (in size smaller than the former) in the other hand. Let him hold the two in his two palms and feel which is heavier. Verify it still by changing the palms. By taking the above articles in groups we will be able to establish in children the correct idea of finding out the relative weight of articles. What is more important is to give the children a number of opportunities for developing the sense of handling and feeling.

Test III (b) Smooth and rough.

APPARATUS REQUIRED.

1. A piece of wood with a well-planed surface over half of which is pasted a sand paper.
2. Another piece divided into 4 parts :

Rough sand-paper.	Smooth sand-paper.	Blank space.	A piece of glass fixed on.
-------------------	--------------------	--------------	----------------------------
3. Leaves *Cassia* (country fig) and Banyan.

PROCEDURE.

1. Ask children to feel the black-board and then the floor. Let them say how they feel them.
2. Let each child feel the articles mentioned in 1 and 2 above, and tell which has the smoothest surface: (The glass.)
3. Distribute to children one leaf of each kind. Let them feel the leaves and say which is rough and which smooth.

Test III (c) Soft and hard.

MATERIALS REQUIRED.

1. Two toy pillows one stuffed with silk-cotton and the other with cocoanut-fibre.

2. Wollen ball and a foot-ball.
3. Caps: silk or fur caps; caps with cardboard round it.
4. Sponge and stone.
5. Plantains: ripe, unripe, partly ripe.

PROCEDURE.

1. Let the children feel the first pair and tell the teacher which they would prefer to have and why.
2. Allow them to feel the sponge and stone.
3. In the same manner, let them feel the plantains. Let them find that the fully ripe one is soft to touch, that the unripe is very hard and that the half-ripe one is neither very soft nor very hard. Tell them this is a test for finding out whether the fruit is fully ripe. That which is not fully ripe is still hard to touch. That which is hard is cooked and eaten. They should always eat fully ripe ones.

Test IV. Sense of smell.

APPARATUS REQUIRED.

1. Flowers: rose, wild rose, jasmine, chrysanthemum.
2. Leaves: margosa; mango; guava and country orange.
3. Oil: small corked bottles each filled with any of the following oils:—
Turpentine, kerosene, castor, gingelly.
4. Camphor and pepper powder.

This is a training to find out the properties or characteristics of things by the sense of smell. No doubt we get to know of it in the course of experience; but sometimes we are lacking in it. Let us provide our children with all that we are wanting in.

PROCEDURE.

1. Note the smell of the above articles always taking them in pairs and studying by

contrast. Let the children say which is pleasant, agreeable or displeasing.

2. Note that when the leaves are squeezed, they emit the smell of the fruit.

3. (a) Turpentine is known as headache-cure. Some are used to it and hence can remember its name. To others let the teacher give out the name and explain the use of the same.

Let the teacher smear a drop of this on the back of their left palms. Let children smell this.

- (b) Kerosene: The smell is familiar. Warn children from going near a kerosene lamp.

- (c) Castor: Quite familiar to children who are used to it.

- (d) Gingelly: A training in smell enables one to find out the genuineness of the quality.

4. The carrying of camphor or pepper powder in a small packet when passing through dirty places and smelling them is a good practice which we all could take to, and instil in young children.

Camphor burns. Burning incense in a closed room kills mosquitoes. In one case we ward off obnoxious smell of the surroundings by smelling camphor, etc., and in the second case the mosquitoes die on account of the strong smell emitted by the incense which spreads throughout the closed room.

Test V. Sense of touch: a game.

MATERIALS REQUIRED.

A bag containing a number of geometrical forms already spoken of. There should be one for each boy.

PROCEDURE.

Take children outside. Let them sit in a circle with hands at their backs ready to

receive a present from the teacher. They should on no account see the object, but find out by feeling what is given to them, e.g., a circle, a four-sided figure or a three-sided figure. [The names squares and rectangles need not be now insisted on.] The teacher walks behind the group giving one object to each child, jumps into the centre and asks each child to name what he has received or to describe it in his own way.

GENERAL OBSERVATIONS ON SENSE-TRAINING.

An ardent worker along Montessori's lines would certainly welcome such exercises. But there is a counter-argument. These are intended for backward children. Normal children acquire this knowledge in the course of their natural experience. These exercises should also be considerably adapted when applied to our children. What is the place for these exercises in a school when all these should have been gone through at home?

ANSWERS.

1. Education is spoken of as a means to the goal of perfection. The sense exercises then are primarily the gateways to knowledge. Moreover these exercises do add to the vocabulary of the child, increase his experiences through direct contact with things, through his own effort and through play with timely guidance.

2. By introducing such exercises to normal children, we will be quickening their progress without the least strain, and in the exercises set forth above due consideration has been given to the requirements of children, materials selected being within the easy reach of parents and teachers.

3. These lessons are sometimes taught at home. But in most cases, these are neglected,

due to various reasons, overwork for parents or want of insight into the ways of child-training. If the home should feel its importance, and if the parents recognise their primary duty in this respect, then the problem of child-education would have been solved, and the teacher's difficulty in the school will be minimised.

4. Even before teaching the child the Three R's, the teacher should take stock of the child's vocabulary, increase his powers of expression, make the child familiar with himself, with the class children and with the school. These exercises are the best means to that end and are certainly not an end in themselves.

In so applying these tests, the teacher finds out those children who do not possess the elementary knowledge required in these lessons. Hence these are necessary exercises that should occupy a place in the first stage of instruction to a child at school.

5. These exercises show to some extent the method of teaching children. Learning through play, play in work and work in play, learning by doing and discovering for one's self, developing self-expression, all these educational maxims are involved here.

A course of such exercises in a school will be an eye-opener to the parents in the matter of educating children.

NOTES FOR THE TEACHER IN TEACHING THESE EXERCISES.

(i) Though all the exercises are given in two lessons, yet each test should be taken separately so as to afford plenty of opportunity for each child to learn. These should be repeated in the class especially before a Number lesson.

(ii) The children cannot sit attentive for more than ten minutes at a time and in one continuous duration of not more than 20 to 25 minutes. Hence at the end of each 10 minutes, they should be given some jumping and running exercises. As soon as these brisk exercises are over, the children resume their seats silently on the beating of a drum in the eager expectation of something new that they will see or learn.

(iii) The children enjoy changed surroundings. An open air place out of the classroom will be a suitable and a desirable change. A shady tree will also be a welcome change.

(iv) Here they could have a game in connection with their sense training exercises. Examples of such games occur in Lesson O.

(v) The teacher has to be very patient in dealing with children. The one essential characteristic of him is to be a child himself for the time being, bringing on his resources when necessary in securing attention, creating interest, or offering change and giving encouragement.

The College Classics Series of Shakespeare's Plays.

OTHELLO THE MOOR OF VENICE

EDITED BY

MICHAEL MACMILLAN, B.A.

Principal, Elphinstone College, Bombay.

(Third Edition—Reprint). Price Re. 1-6-0.

SRINIVASA VARADACHARI & CO.,

4 MOUNT ROAD, MADRAS.

A FEW RECENTLY PUBLISHED LATIN TEXT-BOOKS.

By Mr. L. V. RAMASWAMI AIYAR, M.A., B.L.,
Maharaja's College, Ernadulum (Cochin State).

IN these days of keen competition when every minute of our existence has to be devoted to equipping ourselves for the battle of every-day life, the study of ancient languages can only be the privilege of the few. In more spacious and leisurely times, the knowledge of Latin and Greek was considered to be the hall-mark of culture in the West. But those days are gone now, and subjects like the sciences and modern languages have usurped or are usurping the place of Latin and Greek in Western educational institutions. In India, if any ancient language is studied at all, precedence is given—as it ought to be—to Sanskrit or Arabic. Sanskrit indeed is the vehicle of our common Indian heritage, and to ask an Indian to study Latin and Greek in preference to Sanskrit is like counselling him to cut off his natural ears and nose and to wear artificial ones instead. Yet there are in India a not inconsiderable number of students who do study Latin. Greek, I believe, is studied hardly anywhere in India, but Latin appears to be popular amongst the South Indian Catholics and Anglo-Indians. Latin is assiduously studied and mastered in many of the Catholic educational institutions and Seminaries of the West Coast and in Trichinopoly, Bangalore and Madras.

The orthodox method of studying the ancient languages (it is really curious that both in the West and in the East this was the same) was to acquire a fairly thorough knowledge of grammar before texts were tackled seriously. This is ceasing to be the vogue to-day. In its stead we have the all-conquering direct method which proceeds from the concrete to the abstract. The direct method is being adopted in many schools in the study of Sanskrit and Latin. The grammatical knowledge is, to begin with, reduced to a minimum and texts are placed before the student to enable him to straightway cultivate a love for the subject-matter divested of the complications of grammar.

XXXIII—78

Conformably to these new requirements, easy texts and readers are prepared and published with the special intention of awakening the interest of the student in the literary aspect of the subject-matter. Messrs. Macmillan & Co. have recently brought out two well-edited Latin texts in their Elementary Classics Series, to suit the new requirements. *Caesar in Britain*, edited by W. E. P. Pantin, M.A. (price 2s.), is an excellent little beginner's book containing an account, in easy Latin dialogues, letters and essays, of episodes from Caesar's invasion of Britain and of Gaul. The passages are well-graded and the human side of the descriptions is throughout well-kept in view. The customs and manners of the ancient Britons, the prowess, the *virtus* and the *gravitas* of the ancient Romans are prominently emphasised in the passages. The language employed is very easy though the use of peculiar Latin constructions like the ablative absolute, case-phrases, condensed constructions and idioms, is well illustrated. A very clear and graphically-written introduction about Roman life, interspersed with pictures, adds greatly to the usefulness of the book for the beginner.

The other book published by Messrs. Macmillan, *Virgil's Aeneid, Book II*, edited by O. G. E. McWilliam, M. A., is based on a novel and interesting plan. The text is given in Latin and English alternately, i.e., passages in the original are not continuously given but are separated by gaps which are filled in by English versions instead of the original. The idea underlying this new plan is to prevent the student from being bewildered by an endless vista of Latin but to allow him to exercise his imagination and common sense in the construing of Latin with the help he derives from a knowledge of the adjacent English passages. The editor states his object thus: "If the pupils make a false start in a long scene or even in a long sentence, then their expectation of what is coming next will be in complete conflict with the true sense, grammar and fact of what actually does follow—they will get no reward for *thought*—Whereas, if pieces are

translated for them, now the beginning of a simile, now of a scene, and now of a long and involved sentence, there is thus presented to them a firm foundation upon which to lay their thought, and their reward will follow." The second book of *Æneid* contains the account given by *Æneas* to *Dido* of the sack of *Troy* up till his resolve "to lead his defeated comrades over the sea unto whatsoever lauds it may be." The intercalation of English in place of Latin produces rather a grotesque effect upon the advanced student of Latin who would not like the text to be truncated in this way; but when the beginner's needs are considered, the plan, we think, meets with perfect justification. It would be interesting to know how the plan works actually in practice. So far as we can see, there is no reason why it should fail.

Messrs. George G. Harrap and Co., that very enterprising firm of publishers of modern books, some of which we have had occasion to review recently, have brought out two Latin text-books which deserve all praise. *Latin Lessons for Beginners*, by J. C. Robertson, M.A. and Adam Carruther, M.A. (price 3s. 6d.) simplifies unnecessary grammatical drill and provides, almost from the start, stories based on Roman legends which would awaken lively interest in the subject-matter. The basis of each of the lessons is of course a grammatical rule or principle which is stated in the most obvious and elementary way and then illustrated with connected sentences and stories. To give an instance, the Latin *accusative* and *infinitive* construction is treated thus: In the first lesson a few Latin sentences with English translations are given, to begin with; then the difference between the common English usage and the Latin arrangement is given; this is followed by explanations of Latin perfect and future infinitives; and immediately after, follow a vocabulary, exercises and a story; next come two additional lessons on the passive infinitives and the infinitives of deponent verbs. The lessons are not loaded with superfluous matter or complicated illustrations. The second part of the

book dealing with syntax and composition is not provided with illustrative stories in Latin but with exercises in English to be translated into Latin. We are of opinion that simple Latin stories could have been introduced in the second part too so as to lighten the task of the beginner. The rules of accidence are summarised at the end and a vocabulary is also given. Illustrations, some of which are full-page ones, form an interesting feature adding to the usefulness of the book for the lower classes.

Latin Reader for Secondary Schools, by Hamilton and Carlisle is an excellent reading-book which could be used along with the *Latin Lessons*. The "Reader" contains selections from classical Latin authors. A large ground is covered and the extracts are well graduated, those in Part II being of an advanced type. Original Latin pieces are given in Part I: *The Sack of Troy by the Greeks*, *Romulus Builds Rome*, *Torquinius Priscus, the Fifth King of Rome*, *Brutus defends the liberty of Rome*, *Horatius defends the bridge, etc., etc.* The verse passages are from *Phædrus*, *Martial* and *Catullus* in Part I and from the major classical authors in Part II. "The extracts are in no way technical but full of human appeals. As for instance, the following passage from *Catullus* about a coquette instantly grips the attention of the reader, though it smacks of a certain misogyny with which we are familiar in Sanskrit literature:

NULLI SE DICIT MULIER MEA NUMERE MALLI
QUAM MIHI, NON SI SE JUPITER IPSE PETAT
DICIT: SED MULIER CUPIDO QUOD DICIT AMANT
IN VENTO ET RAPIDA SCRIBERE OPPORTET AGUM

Other interesting little passages too occur in plenty, like *Martial's* lines which say that the good man extends the period of his life because he lives in the present and at the same time in the pleasant memories of the past,

AMPLIAT ætatis spatium sibi vir bonus;
hoc est vivere bis, vita posse priore frui,
neat little cuttings from *Horace's Odes* and stirring imaginative passages from *Virgil*." Useful notes and a vocabulary are also given. We are sure that the student will have mastered a good deal of Latin if he works through the *Latin Lessons* and the *Latin Reader*.

Reviews and Notices.

TEACHERS OF INDIA, BY C. A. KINCAID, C.V.O.,
I.C.S. (OXFORD UNIVERSITY PRESS). Price 14 as.

This gives in a story form a sketch of the life and teachings of some of the Religious Teachers of India such as Dnyander, Tukaram, Ramdas of Maharashtra, Kabir, Garu Nanak, Guru Govind Singh, Keshab Chandra Sen and Dayanand Saraswathi of Northern India. The stories of the Maharashtra Saints, Kabir and Guzarat Saints are taken from Mahipathi's *Bhaktavijaya* and the stories of the Sikh Gurus are taken chiefly from the late Mr. Macauliffe's *The Sikh Religion*. The stories are told in easy simple English and in a manner so as to infuse *Bhakti* in the readers who are religiously inclined. We recommend the book for general reading by the Secondary School students.

AN INTRODUCTION TO THE CALCULUS, BY O. V.
DURELL, M.A. AND R. M. WRIGHT, M.A.
(BELL & SONS). Price 2s. 6d.

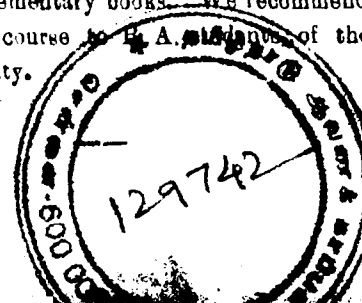
This is a short introduction to the Calculus, containing only 90 octavo pages in all, and its scope is intended to meet the requirements of the Oxford and Cambridge Joint Board School Certificate Examination. The substance of the book has already appeared as a section of Part II of the *Elementary Algebra* by the same authors. The book is written in a clear simple style and contains numerous exercises of an easy character to illustrate the text. It does not contain inaccurate proofs and statements, and the student who begins the subject with this introductory course will not have to unlearn anything when he takes up later on a rigorous advanced book which is a great thing in elementary books. We recommend this as a first course to B.A. students of the Madras University.

ELEMENTARY PRACTICAL CHEMISTRY, BY E. J.
HOLMYARD (GEORGE BELL & SONS, LONDON,
1927). 117 pages. Price 2s.

This is one more addition to the Bell's 'Natural Science Series' of which E. J. Holmyard is also the general editor. The authors's considerable experience in the teaching of Chemistry is very clearly indicated in the representative collection of standard experiments quite suitable to our S.S.L.C. students. Starting with a few experiments to improve manipulations and ordinary chemical operations in Section I, there are eight sections dealing with equivalent and simple chemical laws, preparation and identification of the common elements, gases, acids, bases and salts, some simple volumetric exercises, the last two being devoted to miscellaneous experiments and a few practical exercises suitable for school certificates examinations. The details provided for each experiment are very clear, accurate and sufficiently comprehensive.

SCIENCE THROUGH THE AGES, BY MARION
FLORENCE LANSING. (GEORGE G. HARRAP &
COMPANY, LTD., LONDON). 253 pages. Price:
2s. 6d.

This interesting little book belonging to one of a series issued under the name 'Told through the Ages' introduces us to those pioneers of science who have created our modern world and to whom we owe a tremendous debt. It attempts to trace, in the form of groups of stories, the development of science and its application to human comforts and conveniences. Thus, the age of fire, a food cycle, from fibre to cloth, stories of time and space, fuel for power, the wonders of light, new sources of power, the world made one, form each in itself a group. It is impossible to overestimate the importance of a knowledge of the history of applied science and this little book provides such knowledge told simply and admirably well. Every student of elementary science will find this book highly interesting and instructive.



CHEMISTRY, BY W. H. BARRETT, M.A. (OXFORD UNIVERSITY PRESS, 1927). 151 pages. *Price 5s.*

To the already existing large number of elementary books on Chemistry, this is an addition. Bearing in mind that the main ideas behind the 'General Science' movement are the broadening of the basis of school science and a close relation of what is taught with what is experienced in everyday life, the author claims to have arranged his subject-matter so as to lead in a logical manner to the deduction of the relative weights of atoms. There does not seem to be anything new to claim special recommendation.

MAGNETISM AND ELECTRICITY, BY JUDE AND SATTERLY, IN TWO VOLUMES, MATRICULATION AND SENIOR. (UNIVERSITY TUTORIAL PRESS, 1927). *Price 6s. 6d. each volume.*

These books are already popular and have consequently reached a third edition. There are not very many changes from the second edition but a few essential alterations in conformity with modern ideas are found here and there. There is also new matter on the electron theory and wireless.

HEAT AND LIGHT, BY E. NIGHTINGALE. (G. BELL AND SONS LTD., LONDON, 1927). 271 pages. *Price 4s. 6d.*

This again is one more of 'Bell's Natural Science Series' of which E. J. Holmyard is the general editor. The book is, according to the author, 'largely a compilation, much of the material having been gleaned from many excellent works, historical or otherwise.' At the end of the book is a bibliography which should be very helpful to those who wish to pursue the subject further.

At the end of each chapter is a series of examples collected mostly from the school certificate examinations of various Boards and a few questions suitable for practical work.

It is quite fit to be a reference book for the Secondary School-Leaving Certificate Examination pupils.

THE CHEMICAL ELEMENTS AND THEIR COMPOUNDS, BY J. A. V. BUTLER. (MACMILLAN & CO. LONDON, 1927). 205 pages. *Price 6s.*

The book is an introduction to the study of inorganic chemistry from modern standpoints and is intended to be used in conjunction with an adequate descriptive text-book.

The author has endeavoured to present the new standpoints which aim at demolishing the idea that the subject of Chemistry consists of a wearisome collection of facts and showing to the world that it has underlying a unifying theory. He has followed the historical method and thus developed the ideas through every stage of their growth. The exposition is very lucid and can be easily followed by any one with an elementary knowledge of the subject. At the end of each chapter is affixed current literature pertaining to the subject-matter dealt in it and this will be found most helpful to those who wish to make a further study.

The book may will be read by our B. A. and B. Sc. students of Physics and Chemistry as an introduction to the modern theories of Chemistry.

THE SACRAMENT OF NATURE, BY JOHN S. HOYLAND. (W. HEFFER & SONS, LTD., CAMBRIDGE). 53 pages. *Price 2s. 6d. net; (Paper 1s. 6d. net).*

This book consists of seventy-three hymns of prayer to and praise of, God, written in rhymeless irregular lines. They have however a genuine poetic fervour and illustrate the natural way of the approach to God to the man engaged in some branch of social service. Though written in the language of a Christian, the book is bound to appeal to the followers of all religions alike.

The author has eyes for the great gifts of nature and he is alive to the joys of home life. It is this kind of realisation that will prove particularly valuable to Indian readers. We may extract the

following lines to illustrate Mr. Hoyland's verse:

We need not seek Thee afar,
In deep mines of thought, or in weary
penance,
For lo, Thou art here;
Here in the simple things,
In the dawn,
In a child's awakening smile.

The book is also interesting as reflecting the natural features of an Indian background.

[We have noticed a misprint on page 41, in the third line of Starza LIV: 'ought' should be 'aught'.]

COMPOSITION FOR UPPER CLASSES, BY ED. J. S. LAY AND ELLA BRAY. (MACMILLAN & CO., LTD.) 256 pages. *Price 2s. 3d.*

This is an interesting book calculated to be useful in High School classes. The book has several

pictures which will prove suggestive for writing composition. The section on precis-writing might have been much more elaborate than it is. Part III has miscellaneous information on many things and will be found useful for reference.

EPISODES FROM THE SEA AND THE JUNGLE. (HARRAP'S READERS OF TO-DAY), BY H. M. TOMLINSON. (G. G. HARRAP & CO., LTD.) 189 pages. *Price 1s. 6d.*

Tomlinson is recognised to be one of the great living writers. He is master of describing the life on board a ship, and he has explored the romantic regions of the Amazon. He is a careful artist and his sketches are crisp and animating. The present abridgement may serve to kindle interest in readers to take to the original work, "The Sea and the Jungle."

The only book of its kind for Indian School-boys.

ENGLISH DIALOGUES

BY

H. MARTIN, M.A., O.B.E.,
PRINCIPAL, ISLAMIA COLLEGE, PESHAWAR.

Price, Rs. 1.

PREFACE.

No doubt the best way to learn to speak "English as she is spoken" is to talk constantly with English people. But Indian children as a rule get very few chances of doing this, and in consequence the English they speak is too often a rather stilted "Book English". However, in the absence of chances of familiar conversation with English people, a good second-best way of acquiring a knowledge of colloquial English is the study of such dialogues as are given in this little book.

This book of English Dialogues is designed to give Indian school-boys an acquaintance with the living tongue as it is spoken by ordinary Englishmen to-day. But the boys should be encouraged to read the dialogues assiduously both in school and out of it.

Some of the more serious dialogues in this book may help to correct the tendency noticeable in boys to be led away by what they hear or read. In other words, they should help to draw out their critical faculties.

COOPER, Publishers, BOMBAY.

MADRAS UNIVERSITY LIBRARY.

LATEST ADDITIONS.

A. Science: General.

Newman: Nature of world and man.

C. Physics.

Luckiesh: Foundations of the universe.

H. Geology.

Kraus: Gems and gem materials.

O. Literature.

Sarojini Naidu: Golden threshold.

" Bird of time.

" Broken wing.

Shanks: Collected poems.

Shaw: Dramatic opinions, 2 V.

Sisson: Shakes. in India.

Savage: Flora and Folk lore of Shakes.

Smith: Shakes. criticism.

Sheridan: Dramatic works.

Shaw: Heart-break house.

" Doctor's dilemma.

" Getting married.

" Blanco posnet.

" Misalliance.

" Fanny's first play.

" Over-ruled.

" Androcles and the lion.

" Pygmalion.

" Back to Methuselah.

" Translations and Tomfooleries.

Skimpole: Shaw.

Smollett: Letters.

Sadleir: Trollope.

Shaw: Perfect Wagnerite.

" Irrational knot.

" Quintessence of Ibsenism.

Rolland: Above the battle.

" Forerunners.

" John Christopher, 4 V.

Phillips: Eng. women in life and letters.

Monroe: Poets and their art.

Robertson: Problems of Shakes. sonnets.

Rhys: Tagore, R.

Newbolt: Collected poems.

Reed: Early Tudor drama.

Nicoll: Hist. of late 18th cent. drama.

Robertson: Mr. Shaw and the maid.

Read: Reason and romanticism.

Baleigh: On writing and writers.

Rennie: Scenery in Shakes. plays.

Muir: Transition.

Postgate: Corpus poetarum Latinorum.

Wendell: Lit. Hist. of America.

Holloway: Whitman.

Jones: First Impressions.

Hyde: Lit. Hist. of Ireland.

Faguet: Lit. Hist. of France.

Bruckner: Lit. Hist. of Russia.

Frazer: Lit. Hist. of India.

Marble: Noble prize winners in lit.

Mason: Satirical poems.

Maynell: Francis Thompson.

Mabie: Shakespeare.

MacCracken: Introd. to Shakespeare.

Melville: Life and letters of Smollett.

Megrez: Talk with Conrad.

Lucas: Events and embroideries.

McNulty: Dethronement of Shakespeare.

Thomas: Hist. of German lit.

MacLean: Lit. of the Celts.

MacGregor: Leaves to Hellas.

Riedl: Hist. of Hungarian Lit.

Letzow: Hist. of Bohemian Lit.

P. Philology.

Saintsbury: Hist. of Eng. Prose rhythm.

Smith: Four words.

Fowler: Subjunctives.

Bridges: Poetry in schools.

Gordon: Medium ævum and middle age.

Bridges: Society's work.

Paget: Human speech.

Jespersen: Growth and structure of English Language.

Q. Religion.

Russell: Religion and natural law.

Hsu: Philos. of Confucius.

MacClagan: Chinese religious ideas.

R. Philosophy.

Radhakrishnan: Indian Philos., V. 2.

Merington: Problem of personality.

Lodge: Evolution and creation.

Whitehead: Religion in the making.

Martineau: Ethical theory, 2 Vol.

Lichtenberger: Gospel of superman.

Muirhead: Contemp. Brit. Philos., V. 2.

Ladd: Knowledge, life and reality.

Kishinami: Development of philos. in Japan.

Kant: Critique of pure reason.

Crespi: Contemporary thought of Italy.

Inge: Science and ultimate truth.

Hugel: Philos. of religion.

Jas-Oalevich: Three conceptions of mind.

Lewis: Anatomy of science.

Laird: Study in moral theory.

Jacks: Responsibility and culture.

Oxford Lectures on philosophy, 1923.

Perry: General theory of value.

Randall: Making of the modern mind.

Radhakrishnan: Hindu view of life.

Parker: The self and nature.

Pierce: Philos. of character.

Perry: Philos. of the recent past.

Ogden: Foundations of aesthetics.

Palmer: Kant.

Powicke: Cambridge Platonists.

S. Psychology.

Pruette: Stanley Hall.

Raup: Complacency.

Baudouin: Inner discipline.

Eng.: Emotional life of the child.

Morgan: Psychol. of unadjusted school child.

Ogden: Psychol. and education.

Howes: Borderland of music and psychology.

Kimmins: Children's dreams.

Freud: Collected papers.

Lea: Psychol. of medium ship.

Levy-Bruhl: How natives think.

Koffka: Growth of the mind.

Kelley: Influence of nature upon native differences.

Kohs: Intelligence measurement.

Judd: Psychol. of social institutions.

Toland: Mystery of mind.

Dorsey: Way we behave like human beings.

MacKeever: Child study.

Lucas: Crook Jones.

" London and its criminals.

MacDougall: Social psychology.

X. Economics.

Heer: Post-war expansion of state expenditures.

Y. Sociology.

Margold: Sex freedom and social control.

MADRAS UNIVERSITY LIBRARY: The number of readers and the number of books issued during the month of October 1927 were 4,918 and 5,999 respectively. The corresponding figures for the last year were 3,521 and 4,932.

EOMORE,

31st Oct. '27.

S. R. RANGANATHAN,

Librarian.

Approved as a Text-Book suitable for school use,
vide Fort St. George Gazette, Part I-B, p. 547, dated 1-11-1927.

COMMERCIAL ARITHMETIC.

FOR

SECONDARY AND COMMERCIAL SCHOOLS

Prepared in accordance with the S. S. L. C. Syllabus

By T. V. SUBRAMANIA AIYAR,

Commercial Instructor, Govt. Muhammadan College, Madras:

Author of

Commercial Correspondence, Book-keeping for Beginners, Graduated Exercises in Typewriting, etc.

CONTENTS.

CHAP. I. Some short cuts and artifices; II. Signs, tables and vocabulary; III. Averages and Percentages; IV. Insurance, Commission, Brokerage, Tradesmen's Discount. Rates and Taxes, Bankruptcy; V. Bills and Invoices; VI. Profit and Loss; VII. Alligation, VIII. Partnership; IX. Interest—Simple and Compound; X. Present Worth and Discount; XI. Equation of Payments; XII. Shares and Stocks; XIII. The Metric System; XIV. Foreign Moneys and Exchange; XV. Miscellaneous Examples; XVI. Madras S. S. L. C. Question Papers; APPENDIX—Answers.

OPINION.

Mercantile Miscellany, April 1926:—The enterprising firm of Messrs. Srinivasa Varadachari and Co., Mount Road, Madras, have sent us a copy of Commercial Arithmetic for S. S. L. C. students which they have published. The book is a very useful addition to the existing literature on the subject and bids fair to be regarded as a Standard Text-book on the subject on this side. Needless to add that the book being written with a Commercial bias it should prove invaluable to all youths aspiring after commercial or business career. We congratulate the author, Mr. T. V. Subramania Iyer, and the Publishers, for the neatly got-up little volume before us.

D. Cr. 8vo. about 200 pp. Price Rs. 1-4-0.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

**LIST OF RECENT ADDITIONS
TO THE CONNEMARA
PUBLIC LIBRARY.**

- Andrade, E.N.C.: The Structure of the Atom.
Barker, J. E.: Good Health and Happiness.
Bose, J. C.: Plant Autographs and their Revelations.
Brown, J. P.: The Darvishes or Oriental Spiritualism.
Bury, J. B.: Cambridge Ancient History, Vol. VI.
Cambridge History of English Literature, Vol. XV. (General Index.)
Doughty, C. M.: Travels in Arabia Deserts.
English Men of Letters:
Bundett, C.: William Blake.
Freeman, J.: Herman Melville.
Priestley, J. B.: George Meredith.
do : Thomas Love Peacock.
Ewart, M. C.: Theory and Practice of Education, with special reference to Indian Schools.
Grant, A. J.: Europe in the Nineteenth Century (1789-1914.)
Hand-Book of Indian Universities: Published by the Inter-University Board, India.
Hobson, J. A.: The Conditions of Industrial Peace.

- Huxley, J.: Essays in Popular Science.
Khan, S. A.: Sources for the History of British India in the Seventeenth Century.
Kraus, E. H.: Gems and Gem Materials.
Kyle, H. M.: The Biology of Fishes.
Lawton, L.: The Russian Revolution (1917-1926.)
Murray, Sir E.: The Post Office.
Parson, J. H.: An Introduction to the Theory of Preception.
Pipkin, C. N.: The Idea of Social Justice.
Radhakrishnan, S.: The Hindu View of Life.
Rawlinson, H. G.: An Account of the Battle of Paniput and of the events leading to it.
Sapre, B. G.: Economics of Agricultural Progress.
Spearman, C.: The Abilities of Man.
Stieglitz, J.: Chemistry and Recent Progress in Medicine.
Vaidyanatha Ayyar, R. S.: Muni's Land and Trade Laws.
Wait, W. E.: Manual of the Birds of Ceylon.
Woodburne, A. S.: Human Nature and Education.
Yonghusband, F.: The Epic of Mount Everests.

"FROM A RURAL SCHOOL-WINDOW."

(With four illustrations.)

WITH A FOREWORD FROM

The Hon'ble Sir A. P. PATRO, Kt.,

Minister of Education, Madras.

BY

K. R. R. SASTRY, M.A., L.T.,

Fellow of the Royal Economic Society (London); sometime Deputy Inspector of Schools, Dharmapuri and Pattukkottai Districts; author of "South Indian Gilds."

Price: As. 5.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

The Educational Review.

We are afraid that the deliberations of the Madras Senate are drifting towards an unenviable plight and the last meeting did no credit to the University, or to any of the people concerned. The proceedings, according to the papers, were so disorderly as to make an experienced senator remark that the meeting was like a "bear-garden," and though some members objected to this expression, none of them was able to challenge it, or even deny the essential soundness of the charge. The Vice-Chancellor was not in a position to call the member to order but, on the other hand, he admitted the justice of the charge by saying 'that there was so much talking in the Senate that one could hardly hear the speakers.' It is surprising that members of an academic body like the Senate cannot conduct themselves with more decorum and dignity and these proceedings furnish a very unwelcome contrast to those of Senate meetings generally all over India. If the proceedings were disorderly, the Senate was also extremely dilatory in its discharge of business. We have had occasion to refer, more than once, to its incapacity with regard to the management of the University Library question. A more recent exhibition of its helplessness was furnished with regard to the proposed Inspection Commission. The Government of Madras, with its notorious incapacity to appreciate modern developments in educational progress, declared

that it was not in a position to give the University a special grant of Rs. 25,000 to appoint a Commission of Inspection of Colleges. That was the occasion for a futile and prolonged discussion resulting in a further postponement of the consideration of the matter. It is very doubtful if before the academic year ends, any action is going to be taken at all in the matter of inspection, and we wish the members of the Madras Senate learn to manage their business better and expedite affairs relating to the University. There has been a state of stagnation for a considerable time now and in the present race of progress on the part of the Indian Universities in the development of higher education and research, Madras is sure to be left behind, unless it looks sharp, in spite of the superior intelligence of the people of Southern India and the great capacity they have for distinguishing themselves in intellectual pursuits. Writing on the subject of Inspection of Colleges, may we commend to the University of Madras the provision which exists in the University of Bombay with regard to the inspection of colleges? It is rightly laid down that an Inspection Commission should always contain an outsider who does not belong to the University at all, so that he may bring to bear upon his work a certain amount of freshness of outlook and a knowledge of educational conditions prevailing elsewhere in the country. We are afraid Madras has always adopted a policy of complacent self-satisfaction, without seeking any light from outside, but we have no doubt the proposed In-

spection Commission will be more fruitful of useful work if it found it possible to include at least one member with an intimate knowledge of the other Universities of India.

Pandit Madan Mohan Malaviya, to whose self-sacrificing efforts the Benares Hindu University is largely due, has issued an appeal to the public for a second crore of rupees in aid of the institution. When he launched the scheme of the Benares Hindu University years ago, and asked for a crore of rupees, he was looked upon a visionary. The University is however now, happily, an accomplished fact and the public have subscribed more than a crore of rupees for the support of the institution. During the last eleven years of its existence, it has been making a reputation for itself, not merely as a unitary and residential University, but also as a University offering special facilities for vocational education of an advanced kind in some branches. The expenses of running a modern University of the type are so great that we are not surprised that the authorities have found it necessary to issue an appeal for a second crore of rupees on behalf of the institution. The campaign for the collection of funds has already begun well with the tour among the States of Rajputana by Pandit Madan Mohan Malaviya and an additional donation of Rs. 50,000 from His Highness the Maharaja of Bikaner besides the lakh and fifty thousand subscribed by him on a former occasion.

The appeal made by one of his lieutenants, Prof. P. Seshadri, at Hyderabad (Deccan) has also met with a favourable response, sums amounting to Rs. 75,000 having been subscribed, one donor alone, Raja Dhanajiri, offering to pay Rs. 50,000 for the building of a hostel. We wish the campaign all success and we hope that before the time comes for Pandit Madan Mohan Malaviya to finish his labours for the Benares Hindu University, he will have had the satisfaction of collecting the second crore of rupees for which he is now making an appeal before the Princes and peoples of India.

We are afraid the piloting of the new Bombay University Bill in the Bombay Legislative Council has not

been a model of ability and statesmanship. There has been unnecessary wrangling over trivial points and the net result is the proposed legislation has been postponed, in spite of the fact that the University Act of Bombay has long been in need of revision. While the Government of Bombay has not taken much action on the admirable report issued by the University Reform Committee and granted any additional funds for the expansion of the work of the University, the people have not also facilitated University reform by exhibiting a spirit of co-operation in the passing of the University Bill. It is surprising that the most acute controversy should have been raised over the proposal to make the Vicéroy and Governor-General Visitor of the University. While we do not see

any special necessity for a proposal of this kind, we do not also consider it objectionable and there is no reason why members of the Legislative Council and some of the publicists in Western India should have lashed themselves into a fury over this matter. Now that education is a "provincial" subject, it may not altogether be a disadvantage to have something like a co-ordination of the work of Universities in India by making the Governor-General the Visitor of all the Universities in the country. It is not that we expect the Government of India to be particularly energetic in a matter of this kind even if the new provision is made. Things have been allowed to stagnate very much because of the utter indifference of the Government of India in matters educational in recent years. But the arrangement at least opens out some possibilities for the future. The clause over which the Bombay University Bill has been wrecked for the present runs as follows:—

The Governor-General shall be the Visitor of the University.

The Visitor shall have the right to cause an inspection to be made, by such person or persons as he may direct, of the University, its buildings, laboratories, libraries, museums, workshops and equipment and of any institutions maintained by or affiliated to the University and also of the teaching and other work conducted or done by the University and to cause an inquiry to be made in respect of any matter connected with the University. The Visitor shall in every case give notice to the University of his intention to cause such inspection or inquiry to be made and the University shall be entitled to be represented thereat.

The Visitor may address the Chancellor with reference to the results of such inspection or inquiry and the Chancellor shall communicate to the Senate and to the Syndicate the view of the Visitor and may, after ascertaining the opinions of the Senate and Syndicate thereon, advise the University upon the action to be taken.

The Syndicate shall within such time as the Chancellor may fix, report to him for communication to the Visitor. Such action, if any, as is proposed to be or has been taken upon such advice. The report shall be accompanied by the opinion of the Senate thereon.

The Chancellor may, where action has not been taken by the University within a reasonable time to his satisfaction, after considering any explanation furnished or representation made by the Senate or the Syndicate, issue such directions as he may think fit and the University shall comply with such directions.

It will be remembered that there is a similar provision in the Andhra University Act.

We congratulate all concerned on the formal inauguration of the Agra University. It was found extremely inconvenient on the part of people engaged in the Allahabad University to have two sides, an internal and an external, the former working as a unitary and residential University, and the latter being a mere affiliating section. It is well therefore that this incompatible combination has been put an end to and the colleges of the United Provinces which do not belong to any of the residential Universities, will now have an affiliating University at Agra. There is no doubt of the fact that an affiliating University is

a curious anachronism in the year of grace, 1927. But we suppose it could not be helped in the peculiar circumstances of the United Provinces. The mere starting of a new University is not much of an achievement to be proud of, but we hope that the Agra University will be a University in the real sense of the word and will be able to advance conditions of higher education in the United Provinces, to an appreciable extent. In inaugurating the University, Sir William Marris made a speech drawing attention to the serious responsibility of the new institution and we hope his words of advice will bear some fruit. The recent multiplication of Universities in India, particularly in the North, has not been productive of corresponding increase in the benefits of higher education, or in the efficiency of academic standards. We hope the Agra University will bear this warning in mind.

At the first meeting of the Senate, the member elected as Vice-Chancellor, a European and a Missionary, the Rev. Canon Davies, M.A., of the St. John's College. It is surprising that there should have been such lamentable want of unity among the Indian members of the Senate that they could not have pitched upon any Indian for the high office. In view of the long experience of the Rev. Canon Davies, and his valuable work in the United Provinces, the appointment is not altogether unsatisfactory, but it is obvious a European Missionary, working in this country, cannot be as enthusiastic as an Indian in

the matter of the advancement of a University like that of Agra. Want of union among Indians has been the bane of the country during all the centuries of its history and we are not surprised at its expressing itself in the case of small institutions like Universities, as it has expressed itself in the case of great events in its national history.

The recent report of "Indian Students in England" for 1926-27 furnishes interesting reading, though it raises the whole question whether, after all, it is worth while that there should be such a craze for education in English Universities and such an over-valuation of the worth of English degrees. The exodus of Indian students to England is due largely to the fictitious value attached to foreign degrees and to the unfortunate presumption on the part of the Government as well as even private educational authorities in this country that the graduate of a foreign University, however inferior his degree and however poor his intellectual qualifications, is necessarily superior to the best products of Indian Universities. We have pointed out, times without number, that Indian Universities have not a chance of developing to their full stature until this badge of inferiority is removed and each annual report of the large number of Indian students in England, of the difficulties of their obtaining admission into English Universities and of the unsatisfactory nature of the work turned out by many of them, is a painful reminder of

this educational thralldom, more serious perhaps in its consequences than even the political slavery to which the country has been subject under foreign rule. We are told that there has been some improvement in the matter of placing a number of Indian students as apprentices in the lines of industry in which they wanted to acquire experience. Factories, however, seem to have shown a certain amount of reluctance in giving opportunities for Indian apprentices and the High Commissioner for India is uttering a warning about the difficulty of finding accommodation for Indian students in industrial and engineering concerns in England. There are industrial and engineering concerns under the Government of India and the Railways of India on such a large scale that at least here, there should not be any need for sending out students to England. We are not surprised, however, at what is happening in these directions in view of the extremely illiberal policy of the Government. Till very recently, Indian students had to go to Oxford for training in Forestry, in spite of the fact that there are extensive forests all over the country, and it is only now that they have the opportunity of getting the most advanced training in Forestry at the Forest Research Institute in Dehra Dun. We presume it will be some decades before Indian students similarly cease to be sent to England for training in mechanical and electrical engineering and in other industrial pursuits.

The appointment of a Committee to consider educational matters is not necessarily an achievement which leads to any practical action and we have known numerous Committees appointed and equally numerous reports written without action being taken, and educational conditions not being improved. The latest example is a Committee consisting of fourteen members which has been appointed by the Government of Bombay for holding an enquiry into the conditions of secondary education.

The terms of reference to the Committee are *inter alia* (i) to consider and report whether there is any organic relation between the present primary and secondary courses and, if so, whether it facilitates the progress of the pupil from the primary stage to the secondary; if not, how they may be co-ordinated so as to facilitate the pupil's progress from one stage to another without unnecessary waste of time and effort and curtail the total length of his present primary and secondary school courses;

(ii) To determine and report whether and, if so, how far the present standards of instruction in primary and secondary schools serve the vocational (*i.e.*, agricultural, industrial and commercial) needs of the different classes of pupils receiving education in these schools; if not, how they may be revised so as to meet these needs without in any way encroaching upon the province of the minimum general education which all classes of pupils, whatever their needs in after-life, must necessarily receive;

(iii) To suggest measures for giving effect to any proposals that it may make, *e.g.*, introduction of a special vocational bias in the upper standards of primary schools and its continuation in

secondary schools, provision for the training of teachers for vocational subjects, arrangement for the inspection of the work of these teachers, institution of examinations for pupils undergoing different kinds of training, etc. etc.; and

(iv) To frame rough estimates of the cost involved in the measures suggested.

The trouble with regard to many of these questions is largely a matter of finance and once the Government makes up its mind to make large grants for educational expansion, it will be found that the need for these Committees is not very great.

We have long been familiar with various attempts made in the direction of University extension and adult education in the countries of Europe and America. But special attention needs to be drawn to a new experiment which is now being tried in Germany of enabling people to acquire University degrees by attending evening classes. There has now been opened what is called an "Evening Gymnasium" in the country which aims at training labourers and others for University education by giving them the benefits of evening classes when their daily work is over. According to the new scheme, young men of an age over 18, employed no matter in what office or business by day, may prepare for the University in the evenings. A five years' course of four hours every evening at the modest cost of 10 marks a term will lead up to the University Entrance Examination. Over 2000 men and women of all ages

and sections have already applied for admission and a small number of people chosen from the list have been admitted for the purpose. The youngest admitted scholar is 18 and the oldest, it is interesting to note, is as old as 51. This experiment which has been inaugurated in Berlin, is being copied elsewhere and the time probably is not far distant when the whole country will be covered by a net-work of institutions of this type. In a poor country like India, institutions of this type will be a great boon, but we should dare not hope for such a new and progressive idea being borrowed and acted upon quickly by those responsible for the direction of educational affairs in this country.

If the affairs of the Madras University are not in a particularly happy condition, things unfortunately do not seem to be better in the case of the Andhra University. Owing to a series of unfortunate compromises, the Ministry responsible for the creation of the Andhra University Act committed the stupendous folly of fixing Bezwada as the head-quarters of the University, though it did not have any college, and the Act itself did not provide for its being a University centre. Instead of taking the Act as an accomplished document and working with Bezwada as the head-quarters of the University, the whole question has been re-opened with disastrous consequences. By a resolution, the Senate has expressed the desire that the head-quarters of the University should be

transferred, of all places, to Anantapur in the Ceded Districts. We cannot imagine a piece of more astounding folly than this resolution on the part of the Senate and we have no doubt the Government of Madras will not stultify itself by acting on this recommendation of the Senate and amending the University Act so as to make Anantapur the head-quarters. By virtue of its present educational position, its ancient cultural traditions and numerous other advantages, Rajahmundry was declared the best centre in the Andhra country for the creation of the University, but true to our general incapacity for rising above petty district patriotisms, there has been a wrangle over this question, and other districts in the Andhra country could not bear to see Rajahmundry either as the head-quarters of the University or even as a centre for Post-graduate work. The net result, nearly two years after the passing of the Andhra University Act, is that the people concerned have not agreed among themselves even about the head-quarters of the University and we are exactly where we started when the Act was passed! In fact, the position is even worse, because the question has been re-opened and violent controversies are still raging without any decision being within sight. The consultation of the wishes of the democracy may be a right principle in theory but there are occasions, especially with regard to academic organisation, when this must not be made too much of a fetish and Government will be able to take a firm

stand in the matter and select, what is in the opinion of experts, a suitable centre for the Andhra University. If the Andhra University cannot make up its mind as to where even the head-quarters of the University ought to be, it has no hesitation in asking for complete control of Honours and Post-graduate work, and the Senate has recently adopted resolutions to that effect. It would be interesting to see what is going to happen with regard to the organization of Post-graduate work in the University. All lovers of the Andhra country will regret sincerely the plight in which the authorities of the University find themselves at present.

The encouragement of art by the offering of prizes is by no means the best method of producing valuable results. But the Government of India apparently hope to achieve something useful in the direction by making offers to Indian artists with regard to the decoration of new Delhi. A certain number of rooms with domed ceilings, varying from 20 to 25 feet in diameter, have been set aside for purposes of painting by artists, and applications are being invited by the Government in the Department of Industries and Labour for the purpose. Applicants are asked to state the approximate area which they wish to decorate; the subject or character of the designs which they intend to paint; the minimum surface which they propose to employ and the rate per superficial foot at which they would be prepared to

undertake the work. It is suggested that historical or allegorical subjects should be preferred to religious, since all classes and creeds are represented in the decoration and the Government desire to encourage figure-painting though they would not exclude a scheme of arabesque or geometrical designs. Painting on canvas and the fixing of the canvas to the ceiling is considered by the Government to be the best method of mural decoration. Designs are invited so as to reach the Government by the 1st February, 1928, and all India will watch with interest the result of this competition.

The report of public instruction in the United Provinces of Education in the United Provinces. Agra and Oudh for the year ending 31st March, 1926, is an interesting document, chronicling progress in various directions. The total number of all classes of educational institutions has increased during the year from 23,154 to 24,252. The total enrolment has risen from 1,192,415 to 1,293,625. The expenditure similarly shows an increase of Rs. 9,68,284 over the expenditure of the previous year. Among the notable improvements effected during the year is the issue of stringent regulations with regard to employment of only trained teachers in schools. The present position is not very satisfactory. In English schools, only 38 per cent. of the teachers are trained. Nearly 70 per cent. of the teachers in Government schools are trained, but the percentage of teachers in non-Govern-

ment schools is below even 25 per cent. It is time the Government of the United Provinces applied their rules in a very stringent manner and enforced only the appointment of trained teachers in schools. The unsatisfactory condition of many Secondary schools is attributed to the want of security of tenure on the part of the teachers. It is interesting to note that the want of more success in Government schools is attributed by this official document to the existence of a time-scale of pay. For, we are told, this has resulted only too frequently in producing a state of inertia in teachers from the headmaster downwards. Those familiar with the conditions of educational service in Southern India also will have noticed a large number of teachers in Government service who have tended to stagnate in intellectual progress for want of any special inducement, being certain that with the lapse of each year, they will receive the increment due to them. One of the Inspectors has remarked: "The time-scale of pay in Government service is largely responsible for inefficient work." The report draws attention to the curious fact that inefficiency in non-Government schools is largely due to causes exactly similar to those which produce the same effect in Government schools, viz., insecurity of tenure and the insufficiency of pay, often irregularly disbursed. It is good to see the admission on the part of the report: "that the work of teachers is often unsatisfactory is hardly to be wondered at." We should like to know

what steps are being taken for improving this state of affairs, which we expect is common in many other provinces in India. After giving an account of various endowments, the Director is constrained to remark that it is doubtful whether scholarships are the best form of educational endowment, though it occurs most readily to the modest educational benefactor. He suggests to pious donors that endowments can be usefully applied to educational institutions or to specific branches of their activities for the encouragement of Geography, Science, Art and the Library. The individuality of the endowment and its association with the person it commemorates can be maintained just as in the case of the scholarship endowment.

We publish elsewhere the appeal from Professor P. Seshadri, the President of the All-India Teachers' Federation. All-India Teachers' Federation and one of the Directors of the World Federation

of Educational Associations, regarding the third session of the All-India Teachers' Federation to be held at Calcutta in Christmas week. It is unfortunate that the South India Teachers' Union should not yet have affiliated itself formally to this central organization of teachers in the country. We hope the serious omission will soon be rectified and the authorities of the Association will join the Federation even before the next Conference. It is incumbent on the part of the teaching profession in Southern India to attend the Federation in Calcutta in some numbers and to add their special experience to the deliberations of that body. Teaching organizations have existed in the South for a much longer period than in any other part of the country and it would be a great misfortune if Southern India did not make its own contribution to this great effort at uplifting and consolidating the teaching profession in India and advancing the interests of education in the nation.

Will be ready shortly.

A COLLEGE ALGEBRA

PREPARED ON THE MODERN METHOD

By RAO BAHADUR P. V. SESHU AIYAR, B.A., L.T., I.E.S. (Rtd.)

Formerly Professor of Mathematics, Presidency College, Madras;
lastly Principal and Professor of Mathematics, Kumbakonam College

AND

N. SUNDARAM AIYAR, M.A.

Professor of Mathematics, Loyola College, Madras.

Volume I for Intermediate Examination.

Volume II for B. A. Examination.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

The following recent publications of ours are approved as suitable for class use by the Text-Book Committee—vide Fort St. George Gazette, I-II-27 :—

A PREPARATORY ALGEBRA

Prepared in accordance with the Syllabus in Optional Mathematics (C. Group) for the Madras S. S. L. C. Public Examination

By V. RAGHUNATHA AIYAR, B.A., L.T.,
Deputy Inspector of Schools, Tirukurungudi Range (Tinnevely Dt.); author of A Course of General Mathematics.
D. Cr. 600 pages with 49 diagrams. Price Rs 2.

ELEMENTARY MATHEMATICS, Part I

Prepared in accordance with the Course of Study prescribed for Secondary School-Leaving Certificates

By RAO BAHADUR P. V. SESHU AIYAR, B.A., L.T., I.E.S. (retired),
Late Principal and Professor of Mathematics, Govt. College, Kumbakonam

AND

V. VENKATASUBBAYYA, B.A., L.T.
Head Master, High School Department, Pachaiyappa's College, Madras.

TAMIL EDITION:

TRANSLATED BY

S. SIVARAMAN, B.A., L.T.,
Mathematics Assistant, Municipal College, Salem.

Part I for Class V and Form I. D. Cr. 300 pages. Price As. 14.

Part II for Form II. D. Cr. 208 pages. Price As. 10.

COMMERCIAL ARITHMETIC

FOR

SECONDARY AND COMMERCIAL SCHOOLS

Prepared in accordance with the S. S. L. C. Syllabus

By T. V. SUBRAMANIA AIYAR,
Commercial Instructor, Govt. Muhammadan College, Madras;

Author of
Commercial Correspondence, Book-keeping for Beginners, Graduated Exercises in Typewriting, etc.
D. Cr. about 200 pages. Price Re. 1-4-0.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

Oct. 1927.]

ADVERTISEMENTS

605

The following books have been approved as suitable for School use by the Text-Book Committee of Madras. (Vide The Fort St. George Gazette, dated Nov. 1, 1927.)

ENGLISH COMPOSITION FOR HIGH SCHOOL CLASSES By HENRY MARTIN, M.A., O.B.E., Principal, Islamia College, Peshawar. Pages 340. (Second Edition). Price Re. 1-8-0.

This new class-book of English Composition is designed for senior school-boys and provides adequate material for training them in a systematic manner for the General Paper in English set at the School-Leaving, the Matriculation, and similar examinations held in this country.

TRANSFORMATION AND SYNTHESIS OF SENTENCES. By S. W. COCKS, M.A., I.E.S. Price As. 14.

Supplies a systematic course of Transformation and Synthesis of Sentences with copious Exercises of many interesting types.

PICTURE COMPOSITION FOR BEGINNERS. By R. W. ROSS, B.A., I.E.S. Price, As. 5.

Is a cheap class-book of great utility for the lower classes.

"A CONCENTRIC COURSE OF ENGLISH GRAMMAR AND COMPOSITION", BOOK I (just published), by P. C. WREN, M.A. (Oxon), late Indian Educational Service. Price As. 6.

Carries the beginner a step further in acquiring the rudiments of Grammar and Composition. It will be found to be quite unlike any other book of its class designed for Indian children.

ENGLISH DIALOGUES. By H. MARTIN, M.A., O.B.E., Principal, Islamia College, Peshawar. Pages 220. Price Re. 1

Those thousands of students who have read with immense advantage to themselves Principal Martin's "School Essays and Letters" and "Junior Essays" will welcome the publication of his "English Dialogues." This new book is meant to serve as a guide to one of the most important branches of English Composition, viz. the art of writing Dialogues and Imaginary Conversations in colloquial English, as required in the "General English" paper of the School Leaving Examination.

THE TEACHER'S HANDBOOK TO ENGLISH COMPOSITION FOR HIGH SCHOOL CLASSES. By H. MARTIN, M.A., O.B.E., Principal, Islamia College, Peshawar. Price Re. 1.

COOPER, Publishers, BOMBAY.

Approved as a suitable Text-book for School use.—*Fort St. George Gazette, 24th July 1923, page 671*

A NEW INDIAN ALGEBRA,

BY MR. B. KRISHNAMACHARI, M.A.,

*University Prizeman in Mathematics, and sometime Assistant in Mathematics
in the Pachaiyappa's College, Madras.*

Volume II

Contents of Vol. II.—Part II.—Chap. XXV. Harder Simple Equations; XXVI. Simple Equations, Harder Problems; XXVII. Simultaneous Equations; XXVIII. Graphical Solution of Simultaneous Equations; XXIX. Applications of Graphs; XXX. Simultaneous Equations, Three Unknowns; XXXI. Graphs of Statistics; XXXII. Substitution in Formulae, and Illustration by Graphs; XXXIII. Simultaneous Equations—Problems Test Papers—Second Series. **Part III.**—Chap. XXXIV. The Laws of Algebra; XXXV. Homogeneity and Symmetry; XXXVI. Factors; XXXVII. Highest Common Factor and Lowest Common Multiple; XXXVIII. Fractions; XXXIX. Identities; XL. Literal Equations; XLI. Quadratic Equations; XLII. Involution; XLIII. Evolution; Square Root; XLIV. Theory of Positive Integral Indices; XLV. Theory of Divisors; XLVI. Surds; XLVII. Application to Geometry; XLVIII. Easy Graphs; XLIX. Arithmetic and Geometric Series; L. Miscellaneous Theorems and Examples; Test Papers—Third Series; Answers.

D. Cr. 16 mo., 584 pp. Price—Rs. 1-8-0.

RUDIMENTS OF ALGEBRA

With a Chapter on Graphs

by the late S. SRINIVASA IYER,

Author of "Problems in Arithmetic"

Revised by B. HANUMANTHA RAU, B.A.,

Professor of Mathematics, College of Engineering, Madras.

Sixth Edition.—Price Rs. 1.

13th Edition—(1925)

A Manual of Arithmetic

By the late MR. S. RADHAKRISHNA AIYAR, B.A.,

Principal, Maharajah's College, Pudukotah.

Approved as a Text-book for all Classes and Forms.

Vide Fort St. George Gazette, 24th Jan. 1907.

Very useful for School-Leaving Certificate Examination.

Price—Rs. 2.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

MACMILLAN'S NEW PUBLICATIONS.

ENGLISH NON-DETAILED READERS SUITABLE FOR CLASS USE
OR FOR ELEMENTARY SCHOOL LIBRARIES.

New Additions to the "TALES OF INDIA" Series.

FULLY ILLUSTRATED.

Indian Tales of Animals. By Mrs. K. Sathianadhan, M.A.	...	As. 3.
Bengal Folk Stories. By the Rev. Lal Behari Day	...	" 4.
Punjab Folk Stories. By Flora Annie Steel	...	" 4.
The Shy Princess and other Stories. By Aline Van Dort	...	" 4.
Ranthi Dava and other Stories. By Mrs. K. Sathianadhan, M.A.	...	" 3.
Viswamitra and Vasishtha. By M. S. Nateson	...	" 3.
Sasanka and Rohini. By C. Kameswara Rao, B.A., L.T.	...	" 2.
Abhimanyu, the Valiant. By V. Srinivasa Rao, M.A., L.T.	...	" 4.

INDIAN NATURE STUDIES FOR CHILDREN

By C. H. DONALD, F.Z.S., M.B.O.V.

ILLUSTRATED.

Birds and Fishes. As. 4. Kindness to Animals. As. 4.

RECENT ADDITIONS TO THE "CHILDREN'S CLASSICS."

ILLUSTRATED.

Junior Grade. Paper 4 as. each. Cloth-lined 5½ as. each.

The Water Babies (Abridged). By Charles Kingsley.
Through the Looking Glass (Adapted). By Lewis Carroll.
Tales from Æsop.

Intermediate Grade 1. Paper 5 as. each. Cloth-lined 6½ as. each.

Carrots (Abridged). By Mrs. Molesworth.
The Little Lame Prince (Abridged). By Mrs. Molesworth.
The Cuckoo Clock (Abridged). By Mrs. Molesworth.
Anderson's Fairy Tales (Abridged).

Intermediate Grade 2. Paper 5½ as. each. Cloth-lined 7½ as. each.

Gulliver's Travels (Abridged). By Dean Swift.
Fables from the East.

Senior Grade. Paper 6½ as. each. Cloth-lined 8½ as. each.

Robinson Crusoe (Abridged). By Daniel Defoe.
Stories from the Arabian Nights.
The Dove in the Eagle's Nest (Abridged). By C. M. Yonge.
The Lances of Lynwood (Abridged). By C. M. Yonge.
Little Women (Abridged). By L. M. Alcott.
Westward Ho! (Abridged). By Charles Kingsley.
David Copperfield (Abridged). By Charles Dickens.
Masterman Ready (Abridged). By Captain Marryat.
A Tale of Two Cities (Abridged). By Charles Dickens.

MACMILLAN & CO., LTD., MADRAS, BOMBAY, CALCUTTA AND LONDON.

NEW 'A. L.' SERIES.**TALES FOR TOTS.**

By LUCY E. YATES. With Illustrations in two colours, by F. MILWARD. As. 3½ each.

Specially prepared for use by Children who are commencing English Reading. Each book contains 4 stories and 12 illustrations.

No. 1. The May-Bud.

No. 4. The Tin Tea-Set.

No. 2. A Bee in a Box.

No. 5. Joe's Pet Dog.

No. 3. Six Peas in a Pod.

No. 6. The Picnic.

LITTLE FOLKS' STORIES.

By L. E. YATES. As. 3½ each.

Each book contains 3 Stories, illustrated by Pictures in two colours. The words used are very simple, consisting mainly of two, three or four letters.

No. 1. The Doll that would not grow.

No. 4. Pat and the Pop-Gun.

No. 2. The New Hats.

No. 5. Peck-a-Boo.

No. 3. At the Fair.

No. 6. Hop-a-lot.

THE "HAPPY CHILDREN" STORIES.

By ANNIE L. VALE.

With Illustrations by STELLA ROBERTS. 5½ as. each.

Each book contains 48 pages with 4 full-page illustrations in colour and 6 illustrations—Black and White.

No. 1. Summer Times.

No. 3. Happy Days.

No. 2. Off for the Holidays.

CHILDREN OF OTHER DAYS.

A series of books dealing with the Social History of England from the Earliest Times.

By CECILY M. RUTLEY. As. 4 each.

The books are written in simple language, and the story is, in each case, woven round the everyday life of some child or children. The books are exceptionally well illustrated.

No. 1. The First Children. (Old Stone Age).

No. 2. Children of the Downs. (New Stone Age).

No. 3. The Story of Strong. (Bronze Age).

No. 4. Children of the Lake Village. (Iron Age).

No. 5. The Centurion's Son. (Roman Period).

No. 6. Cynric the Saxon. (Saxon Period).

MACMILLAN & CO., LTD., MADRAS, BOMBAY, CALCUTTA AND LONDON.

ELEMENTARY VERNACULAR SUPPLEMENTARY READERS.

As. 2 each.

This new series has been produced to meet the demand for non-detailed reading books in the Lower Standards. The language has been kept very simple and can easily be understood by young children. Printed in large type and well-illustrated.

TAMIL.

SITA, SAVITRI, AND UMA. By M. Natesa Mudaliar, Lecturer in Tamil, St. Joseph's College, Trichinopoly.

ABHIMANYU, THE VALIANT. By M. Natesa Mudaliar, Lecturer in Tamil, St. Joseph's College, Trichinopoly.

TELUGU.

SITA, SAVITRI, AND UMA. By Varanasi Srinivasa Rao, M.A., L.T., Headmaster, Hindu High School, Masulipatam, and Hotha Venkatakrishnaiah.

BHIMA, THE GIANT KILLER. By Ambarukhava Jayarama Rao and Chivukula Subrahmanya Sastri.

ABHIMANYU, THE VALIANT. By V. Srinivasa Rao, M.A., L.T., Headmaster, Hindu High School, Masulipatam.

(Others in preparation).

TALES FROM TROY. Adapted in Simple Tamil. As. 2½.

TALES FROM GRIMM. Adapted in Simple Tamil. As. 2.

FOLK-TALES IN SIMPLE TAMIL. By Pandit C. Somasundaram Pillai. As. 4.

INDIAN FAIRY TALES IN TAMIL. By C. S. Ramaswamy Aiyar. As. 5.

FOLK-TALES IN SIMPLE TELUGU. By Papayya Sastri. Book 1. As. 2.

Do. do. do. Book 2. As. 4½.

ÆSOP'S FABLES. In Telugu with Exercises in Composition. By Rsi Sahib Ramamurthy Pantulu. As. 8.

MACMILLAN & CO., LTD., MADRAS, BOMBAY, CALCUTTA AND LONDON.

ELEMENTARY SCIENCE FOR FORMS I, II and III

Prepared in accordance with the new syllabus in Elementary Science issued by the Education Department.

NATURAL PHENOMENA. TAMIL. By K. C. Viraraghava Iyer, M.A.

Do. **TELUGU.** By K. Suryanarayana, B.A., L.T., Asst. Professor of Science, Pachaiyappa's College, Madras.

	TAMIL	TELUGU
Book 1 for Form I.	4 as.	6 as.
Book 2 „ II.	4 as.	4 as.
Book 3 „ III.	(In the Press)	5 as.

PLANT LIFE. TAMIL. By Dewan Bahadur K. Rangachariar, M.A., L.T., late of the Agricultural College, Coimbatore.

Do. **TELUGU.** Translation by K. Suryanarayana, B.A., L.T., Asst. Professor of Science, Pachaiyappa's College, Madras.

	TAMIL	TELUGU
Book 1 for Form I.	4 as.	4 as.
Book 2 „ II.	4 as.	5 as.
Book 3 „ III.	4 as.	5 as.

ANIMAL LIFE, TAMIL. By R. Gopala Aiyar, M.A., L.T., Assistant Professor, Presidency College, Madras.

Do. **TELUGU.** Translation by K. Suryanarayana, B.A., L.T., Asst. Professor of Science, Pachaiyappa's College, Madras.

	TAMIL	TELUGU
Book 1 for Form I.	4 as.	4 as.
Book 2 „ II.	4 as.	4 as.
Book 3 „ III.	4 as.	4 as.

Also published as complete volumes for each Form.

Vol. I for Form I containing the three parts :

	Natural Phenomena, Plant Life, Animal Life.	} Tamil and Telugu 10 as. each.
Vol. II „ II	do.	
Vol. III „ III	do.	

MACMILLAN & CO., LTD.

(Incorporated in England)

MADRAS, BOMBAY, CALCUTTA AND LONDON.

2nd Edition—Entirely Revised.

A HIGH SCHOOL MANUAL OF ENGLISH

By N. G. WELINKAR, M.A., LL.B.

Senior Professor of English, Osmania University College, Hyderabad (Deccan).

Honorary Fellow of the University of Bombay; formerly Principal, Dyal Singh College, Lahore.

Second Edition of A PRACTICAL MANUAL OF ENGLISH,

Revised and largely re-written in co-operation with

S. R. KIRKPATRICK, B.A.

Headmaster, Government High School, Gulbarga.

CONTENTS:—Part I.—Grammar. Chapter I. Nouns; II. Adjectives; III. Pronouns; IV. Verbs V. Adverbs; VI. Prepositions; VII. Conjunctions and Interjections. **Part II.—Grammar (Diction).** Chapter I. Words; II. Prefixes and Suffixes; III. Synonyms, etc.; IV. Special Words for Study. V. Analysis and Synthesis of Sentences; VI. Punctuation and the Use of Capital Letters; VII. Direct and Indirect Narration; VIII. Recasting of Sentences; IX. Paraphrasing; X. Figurative Language; XI. Idiom. **Part III.—Composition.** Chapter I. The Sentence; II. The Paragraph; III. The Essay IV. Letters and Telegrams V. Narratives based on Poems; VI. Summarising; Test Papers.

Approved for school use (vide Fort St. George Gazette, Part I-B, dated 19-5-1925)

Price: Re. 1-8-0.

SOME OPINIONS.

I have read this Manual with great interest and feel certain that it will be of real help to all students reading in High Schools. Messrs. Welinkar and Kirkpatrick are tried educationists, and, as such, have known how to make the study of English easy for Indian students. So well has the subject-matter been arranged and explained that, unlike the majority of books dealing with Grammar, this Manual captivates the interest even of those who have long finished their student days and are using the English language almost as their mother-tongue. I consider this book a very happy result of the co-operation of the East with the West.

SYED ROSS MASOOD,

Director of Public Instruction, Hyderabad (Dn.)

“ Mr. N. G. Welinkar, Professor of English, Osmania University, Hyderabad, is an old Bombayite and his : ‘ A Parotical Manual of English ’ was at one time very popular with the students appearing for the Bombay Matriculation. The book under review is the revised edition of this manual, largely re-written in co-operation with Mr. S.R. Kirkpatrick, Headmaster, High School, Gulbarga. It is admittedly not a book for a beginner, and appears to be written with a view to help the Matriculation students in answering their General-English Paper. It is however largely free from the bad points common in such books and occasionally exhibits refreshing freedom from convention. Thus, on page 204, the sentence : ‘ I saw my old teacher who invited me to dinner ’ is rightly put down as compound and not complex ; for ‘ who ’ here means ‘ and he ’. Again on page 128, in the sentence : ‘ A man was sent who was to deliver the message ’, the clause beginning with ‘ who ’ is described as an adverbial clause. This led us to expect some discussion about the parsing of the words, ‘ who ’, ‘ when ’, ‘ where ’ but it could not be found. This is the great defect of the book. In about 300 pages the authors have tried to compress ‘ Grammar ’, ‘ Idiom ’ and ‘ Composition ’ and had perforce to omit a number of important things. However what is given is all important and the Matriculation students will find it very useful. ” — *The Progress of Education, Poona, September 1924.*

Mr. D. S. PAUL, Headmaster, C. B. M. High School, Vizagapatam, (13-9-24), writes :—In thanking you for the specimen copy of Welinkar's High School Manual of English, I beg to state that it is an excellent book and eminently suited for the standards it is written for. I shall recommend it to the students here.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

CLASS EXERCISES IN ENGLISH COMPOSITION

WITH AN INTRODUCTION

COMPILED BY

S. R. KIRKPATRICK, B.A.,

Headmaster, Govt. High School, Gulbarga.

(Double Crown 16mo. about 190 pages). Price—14 as. Charges extra.

This work is designed to meet the requirements of students preparing for the High or Secondary School Leaving Certificate or the Matriculation Examinations of Indian Universities. It consists of a hundred one-hour papers in English Composition for practice in class under the supervision of the teacher. The exercises provide an abundance of almost every conceivable variety of work in composition, and their compilation will, it is hoped, help teachers to get over the difficulty of finding the time to dictate or cyclostyle questions which under present circumstances often take as much time to write out as the answers to them. Teachers who use this book will, if they place a copy in the hands of each pupil, be able readily and without needless expenditure of time to give their classes frequent practice in just those types of exercises that are most helpful to the acquisition of the necessary standard in English Composition.

These exercises have been prepared in the interests of students. The compiler asks no return for his work, and has arranged with the publishers for the payment of his share of the profits to the Imperial War Relief Fund. Every student, therefore, who is told by his teacher to purchase this book, will have the satisfaction of knowing that, in addition to providing himself with facilities for practice in English Composition, he is making a contribution to the great cause.

SOME OPINIONS.

Mr. N. G. WELINKAR, M.A., LL.B., *Chief Inspector of High Schools, Hyderabad (Deccan)*:—"The book will be a valuable aid in teaching English Composition in High School classes and I shall be glad to do what I can to encourage its use in the High Schools under me."

The Rev. D. G. M. LEITH, M.A., *Principal, Kellett High School, Triplicane, Madras*:—"My first impression was that we do not need such a book, but as I looked into it I discovered that it would be of very great practical use in providing suitable Composition exercises for the VI Form.....The book is suggestive of fresh types of exercises that can be given. I think that the book will be found very useful for the VI Forms in High Schools."

Mr. P. F. DURAND, B.A. (Cantab), *Principal, Nisam College, Hyderabad*:—"I write to say that I shall be very glad to recommend to students of the Madras Aliya."

Mr. P. VENKATARAMIAH, B.A., *Headmaster, Board High School, Harpanahalli*:—"I shall try my best to make it popular in the upper forms of the school."

Mr. T. V. SRINIVASA Aiyar, B.A., L.T., *Headmaster, Board High School, Amalapuram*:—"I shall recommend it to the boys."

SRINIVASA VARADACHARI & CO., Printers & Publishers, MOUNT ROAD, MADRAS

Oct. 1927.]

IN THE PRESS—Will be ready in a fortnight.

A HISTORY OF INDIA FOR STUDENTS

BY

C. S. SRINIVASACHARIAR, M.A.,
Professor of History, Pachaiyappa's College, Madras

AND

M. S. RAMASWAMI AIYANGAR, M.A.,
Professor of History, Maharajah's College, Vizianagrum.

WITH AN INTRODUCTION

BY

DR. RADHAKUMUD MOOKERJI, M.A., P.R.S., PH.D.
Professor of History, Lucknow University.

**Part I. Hindu India. Demy 8vo. about 240 pages.
WITH SIX MAPS.**

REVISED EDITION OF DRYDEN'S PREFACE TO THE FABLES

EDITED, WITH INTRODUCTION AND NOTES

By Prof. P. SESHADRI, M.A.

Benares Hindu University.

Price: Rs. 10.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

Hand-book of the English Language

FOR HIGH SCHOOLS

BY

MR. K. SUBRAMANI AIYAR, B.A., L.T.,

A Fellow of the University of Bombay ;

An Incorporated Accountant of London, and late Principal of the Byramjee Jeejeebhoy
College of Commerce, Bombay.

REVISED BY

MR. MARK HUNTER, M.A.,

Principal, Government College, Rajahmundry.

FIFTH EDITION. PRICE—Rs. 1-4.

(Approved as a text-book by the Director of Public Instruction, Bombay.)

The Educational Review: January 1905—This is an old favourite of our school-boys appearing in an improved form. We can see the hand of the reviser in many places, the notes that he has added being particularly valuable.

The Indian Journal of Education—This book, now in its fifth edition, has been thoroughly revised by Mr. Hunter, who has done much to improve it..... We have no hesitation in recommending Mr. Subramani Aiyar's Handbook to students.

A Text-book of Tamil Composition

Specially adapted to meet the requirements of S.S.L.C. and Intermediate
Examinations

(Prepared in accordance with the recommendations of the University of Madras)

BY

G. DAMODARA MUDALIAR, B.A.

Tamil Reader, Office of the Registrar of Books, Madras,
(sometime an Assistant in the Wesley College, Madras).

Price As. 12.

Approved as a Text-book for Schools and Colleges.
(Fort St. George Gazette, 21st October 1913.)

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS

'EXERCISES IN ELEMENTARY MATHEMATICS'

for Training and Middle Schools

(for Masters and Mistresses)

with a Chapter on 'Hints on Teaching Methods'

(in Tamil and Telugu)

By M. D. GOPALACHARI, B.A., L.T.,

First Asst., Govt. Secondary Training School, Chittoor: author of the F.A. Algebra Manual,
and sometime Asst. Examiner in Mathematics at the University and School Final Examinations.

(TAMIL—2nd EDITION—Revised and Enlarged—As. 12.)

Approved as a Text-book for School use, vide Fort St. George Gazette, Part I-B, dated 19-5-'25.

Mr. GOVINDA AIVANGAR, Headmaster, Govt. Training School, Chinglepu, writes:—"Mr. Gopalachari's 'Exercises in Elementary Mathematics' afforded me a very pleasant reading. The author's aim to write a text-book in Tamil for Training Schools which will serve as a working basis has been fully realised. I am recommending the book to the students of this school."

Mr. D. MARIASUAI PILLAI, Head Master, R. O. Training School for Mistresses, Trichinopoly, (6-8-24) writes:—"M. R. Ry. M. D. Gopalachari, B.A., L.T., has carefully prepared his little book entitled "Exercises in Elementary Mathematics" (in Tamil) with the object of providing students undergoing training in the Training Schools with a Text-book exactly based on their syllabus to serve as a working basis. He has drawn up a definite and complete syllabus for their Training course, as a guidance for the teachers and students, and has further taken the trouble to furnish them with a set of Question Papers in Mathematics given in the previous T. S. L. C. Examinations. He has thus made commendable efforts to prepare and direct the way for a successful course of training in Mathematics. I am quite sanguine that this handbook will be properly used in Training Schools and will secure the object of the author."

Mr. V. RAMACHANDRA AYYAR, B.A., L.T., Head Master, Sarvajana High School, Peelamedu, Coimbatore (12-12-'24) writes:—"I welcome the publication of the 'Exercises in Elementary Mathematics,' by Mr. M. D. Gopalachari, as it supplies a long-felt want of students in training classes. The book is admirably adapted to the requirements of the training school syllabus and besides contains some useful hints on the teaching of vulgar fractions, etc. The exercises are well-chosen and I am sure they will help the students who work through them to pass with high marks. I have much pleasure in recommending the book also to teachers and students in the lower forms of High Schools for the valuable exercises it contains."

Telugu Edition of the book.

Crown 8vo, about 160 pages. Price As. 10.

Approved as a Text-book for school use, vide Fort St. George Gazette, Part I-B, p. 513, dated 22-12-'25.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

XXXII—

FOURTH AND REVISED EDITION OF THE INTERMEDIATE BOOK-KEEPING

BY

K. SUBRAMANI AIYAR, B.A., L.T., F.S.A.A.,

Senior Partner of Messrs. K. S. Aiyar & Co., Bombay Secretary to the Accountancy Diploma Board, Bombay (1915 to 1923);
Principal
of Pachaiyappa's Commercial School, Madras (1886-1889); of the Govt. School of Commerce, Calicut (1895-1900);
of the Byramjee Jeejeebhoy College of Commerce (1900-1908), and of the Govt. College of Commerce, Bombay (1918-1914).

Price Rs. 3. Postage, &c. extra.

Approved for use in Commercial Classes in English Schools, by the Text-Book
Committee, United Provinces, vide No. G. 6336/XVIII-243, dated 21-3-18.

Recommended as a text-book for S. L. C. Examination of the Bombay University.

Officially recommended for class use by the Commissioner for Govt. Examinations, Madras.

By the same Author.

Sixth Edition—Price Re. 1-8-0.

THE ELEMENTS OF BOOK-KEEPING

OFFICIALLY RECOMMENDED

AS A TEXT-BOOK

FOR

The Bombay Government School Final Examination

Order No. 6451, dated Nagpur, the 31st July, 1917.

The books noted above have been sanctioned for use as Library books in the
High and Anglo-Vernacular Schools of the Central Provinces and Berar.

CONTENTS.

Part I.—The Principles of Double Entry exemplified by the Journal and the Ledger.

Chap. I. The waste-book, the journal, and the ledger; II. Closing the ledger;
III. Rent, salaries, and trade charges; IV. Personal, real, and nominal accounts;
V. Journalizing Assets and Liabilities; VI. Cheques; petty cash and bank accounts;
VII. Trial closing; VIII. Interest, discount, and bad debts; IX. House-property, furniture,
and depreciation; X. The balance and profit and loss sheets; XI. Bills; XII. Bills
Receivable; XIII. Bills Payable; XIV. Miscellaneous Ledger accounts.

Part II.—Practical Book-keeping by Double Entry exemplified by the Cash-book,
the bought and sold books, the bill books, the journal, and the ledger.

XV. The cash book; XVI. The bought, sold, and bill books; XVII. Single
entry book-keeping; XVIII. Invoices and account sales; XIX. Interest ledger;
XX. Exchange operations; XXI. Madras Govt. Elementary Examination Papers;
Bombay University School Final Examination Papers, and Bombay Joint Board School-
Leaving Examination Papers; Answers.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

4th Edition (1924) Revised according to the New Government Syllabus to
meet the requirements of New Lower Grade Examination.

COMMERCIAL PRACTICE (THEORY AND PRACTICE OF COMMERCE)

Including a knowledge of Business Methods & Correspondence

for use in Secondary Schools for the Public Examination for School-Leaving Certificate and for the
Govt. Technical Lower Grade Examination in the subject

by the late RAO SAHIB S. VAIDYANATHA AYYAR,
Headmaster, Government School of Commerce, Calicut.

Officially recommended for class use by the Commissioner for Govt. Examinations, Madras.

Price : Rs. 3-8-0.

Approved as a suitable Text-book.

(Fort St. George Gazette, 4th June 1912, page 371).

By the same author.

Seventh Edition—Revised—Just Ready.

A TEXT-BOOK OF TYPE-WRITING.

(Recommended by the Director of Public Instruction as a Text-book for the Government
Technical Examinations in Type-writing.)

Price—Rs. 3-8-0.

By the same author.

4th Edition—Revised (1925).

BOOK-KEEPING AND ACCOUNTS

With numerous Exercises and Select Examination Papers.—A Standard Work for the use of
Schools and Classes preparing for Public Examinations in the subject and for the use of
Accountants and Book-keepers in Business offices

Approved as a Suitable Text-book (Fort St. George Gazette, Oct. 21, 1913.)

Officially recommended for reference by the Commissioner for Govt. Examinations, Madras.

Price Rs. 3-8-0.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

COMMERCIAL CORRESPONDENCE

*Prepared in accordance with the Syllabus in the subject
for the Madras Secondary School-Leaving Certificate Examination
and
the Madras Government Technical Examinations*

By T. V. SUBRAMANIA AYYAR,
Commercial Instructor, Model High School, Teachers' College, Saidapet, Madras.
Dedicated to Mr. R. G. GRIEVE, M.A., F.R.G.S., F.M.U.
Ag. Director of Public Instruction.

WITH A FOREWORD

By Mr. M. K. DANDEKAR, B.A., A.S.A.A., F.M.U.,
Principal, Government Institute of Commerce, Madras.

Approved as a suitable Text-book for School use.
(*Fort St. George Gazette*, 24th July 1923, page 671).

D. Crown 16mo. 180 pages. Price Re. 1-8-0.

CONTENTS.

- CHAP. I. LETTERS AND LETTER-WRITING—Private Letters; Official Letters; Business Letters.
II. METHOD OF KEEPING CORRESPONDENCE—OUTWARD—Addressing Envelopes; Indexing; Cross Reference or Page Indexing.
III. INWARD CORRESPONDENCE.
IV. OF BANKS AND ACCOUNTS—Current Account; Pass Book; Over-drafts; Deposit Accounts.
V. NEGOTIABLE INSTRUMENTS—Endorsement; Holder and Holder in Due Course; Payment; Noting and Protesting; Capacity of a Minor; Inland and Foreign Instruments; Lost Instruments.
VI. CHEQUES—Endorsement; Presentment for Payment; Crossed Cheques; Forms of Crossing; "Not Negotiable" Cheques; Material Alterations.
VII. BILLS OF EXCHANGE—Parties to a Bill of Exchange; The Course of a Bill; Discounting a Bill; Period of a Bill; Drawee in case of need; Acceptance and Payment for Honour or Supra Protest; Protest for better security; Accommodation Bills; Bills and Forged Endorsements; Miscellaneous; Some Terms in a Bill with Explanation.
VIII. PROMISSORY NOTES—Parties to a Note; Classification of Prom. Notes; Payment; Period of Limitation; Stamp Duty.
IX. SOME FORMS USED IN BUYING AND SELLING—Indents; Marks; Invoices; Statement of Account; Account Sales; Debit and Credit Notes; Receipts.
X. TRANSPORT OF GOODS—Transport of Goods by Rail; Transport by Sea; Freight; Charter Party.
XI. CUSTOMS HOUSE FORMALITIES FOR EXPORTING.
XII. BILLS OF LADING.
XIII. CUSTOMS HOUSE FORMALITIES FOR CLEARING (IMPORTING) GOODS.
XIV. MARINE INSURANCE.
XV. COMMON COMMERCIAL TERMS AND ABBREVIATIONS USED IN CORRESPONDENCE—Commercial Terms; Abbreviations.
APPENDIX.—SPECIMEN FORMS.
SELECT QUESTIONS FROM EXAMINATION PAPERS.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

GRADUATED EXERCISES IN TYPE-WRITING

By T. V. SUBRAMANIA AYYAR,
Commercial Instructor, Government Muhammadan College, Madras;
Author of Commercial Correspondence.

Useful for both Touch and Sight Methods
Demy 8vo. 240 pages. PRICE Re. 1-8-0.

By the same author.

BOOK-KEEPING FOR BEGINNERS.

OPINIONS.

M. K. DANDEKAR, Esq., B.A., F.S.A.A. (LOND.) HON., *Principal, Govt. College of Commerce Madras* :—

"I read the Manuscript copy of 'Book-keeping for Beginners' and I was pleased to note the treatment of the subject made easy. In a few points, I differ with the author especially in the arrangement of the subject-matter. * * * * The book will be found useful for whom it is intended."

M.R.Ry. L. T. ANANTHANARAYANA SASTRY AVL., *Headmaster, Govt. School of Commerce, Calicut* :—

"* * * * Mr. T. V. Subramania Ayyar is the author of a book entitled 'Commercial Correspondence' prepared to suit the curriculum of the School Final class and it has been approved by the Text-Book Committee. He is now preparing a book on Book-keeping which is written in the same style and language as the first one and which I am sure will also be approved by the Text-Book Committee. I wish him success in his attempts to popularise Commercial Education"

Over 400 pages—bound in cloth. Price Rs. 2.

Approved as a Text-Book suitable for school use and Libraries.
vide Fort Saint George Gazette, Part I-B p. 611, dated 22-12-'26.

CONTENTS.

Chapter I. Introduction. Chapter II. Capital Account, Opening Entries. Chapter III. Order of Accounts, Trial Balance, Closing of Accounts, Profit and Loss Account, Balance Sheet. Chapter IV. The Journal. Chapter V. Bank Accounts. Chapter VI. Cash Book—Discount. Chapter VII. Some of the forms and statements used. Chapter VIII. Some more accounts: Drawing account, Trading account, Carriage account, etc. Chapter IX. Bills of Exchange. Chapter X. Imprest system and Petty cash. Chapter XI. Some more real accounts.—Capital and Revenue Receipts and Expenditure. Chapter XII. Outstanding and Suspense account, Reserve for Bad and Doubtful debts, etc. Chapter XIII. Consignment accounts—(Outward and Inward). Chapter XIV. More Subsidiary books. Chapter XV. Working from the Trial Balance. Chapter XVI. Contract account. Chapter XVII. Goodwill. Chapter XVIII. Partnership. Chapter XIX. Partnership (continued)—Dissolution and Liquidation. Chapter XX. Joint adventure account. Chapter XXI. Foreign bills. Chapter XXII. Sectional and Self-Balancing Ledgers. Chapter XXIII. Single Entry. Chapter XIV. Non-Trading Concerns. Appendix A.—Additional Exercises from various sources; Appendix B.—Questions on Theory and Principle of Book-keeping; Appendix C.—The Book-keeper's Compendium.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

BOOKS BY

Mr. P. LAKSHMI NARASU NAIDU, B.A.

Professor of Physical Science, Pachaiyappa's College, Madras.

- (1) **Intermediate Physics.** Prepared in accordance with the University Syllabus. Demy 8vo. 647 pp. with 840 diagrams and an Elaborate Index. Rs. 4.
- (2) **Intermediate Chemistry.** Prepared in accordance with the new Regulations of the Indian Universities. Demy 8vo. 550 pp. with 244 diagrams and an Elaborate Index. Rs. 3-8-0.
- (3) **Lessons in Elementary Physics.** Prepared in accordance with the Syllabuses of the Matriculation and the School Final Examinations. Second edition. Crown 8vo. 550 pp. with copious illustrations. Re. 1-4-0.
- (4) **Lessons in Elementary Chemistry.** Prepared according to the Syllabuses of the Matriculation and the School Final Examinations. Second edition. Crown 8vo. 329 pp. with copious illustrations. As. 12.
- (5) **Essence of Buddhism.** With 105 illustrations of Buddhist Art. Second edition. Revised and Enlarged. Price—Paper cover Re. 1-8-0. Cloth bound Rs. 2.

SOME OPINIONS ON THE SECOND EDITION.

The first edition was welcomed by competent critics in Asia, Europe and America as one of the most successful expositions of Sakyamuni's teachings and in its present form—practically so much rewritten and enlarged as to amount to a new book—it will long hold its own as one of the standard works on the subject. We can give it no higher praise than by saying that it is quite worthy to take rank with the books of scholars like Rhys Davids and Oldenbey.—*Hindustan Review*, May-June, 1912.

To those who wish to obtain a knowledge of the noble religion promulgated by Sakyamuni from the standpoint of the scientific scholar imbued with the spirit of modern research there is no work that we can recommend better than the *Essence of Buddhism*.....The compilation from Buddhist sources embodied in the *Essence of Buddhism* is splendid, and we sincerely trust that the book will have a very wide circulation in Buddhist and non-Buddhist countries where English is spoken. Buddhism is intended for the honest searcher of philosophic truth, and in these days of scientific scepticism when theological religion is losing its ground, a work like this is opportune. To those who wish to know the path leading to enlightened peace we cordially recommend Mr. Narasu's *Essence of Buddhism*.—*The Mahabodhi and the United Buddhist World*, July 1912.

SUBODHA RAMA CHARITHAM

A Sanskrit Poetry of Ramayana, written in a simple style

BY

SRIMATHI V. BALAMMAL

Very useful for beginners. Price—As. 6. Postage extra.

Approved by the Text-Book Committee, Madras, as suitable for School Reading,
vide Fort Saint George Gazette, 6th Aug. 1918, p. 457.

Approved by the Inspector-General of Education in Mysore, as a suitable Text-book
for the IV Standard of Sanskrit Schools in the State.

Proceedings of the D.P.I., Bombay, No. 10652, dated 6-12-17 :—

“the book ‘Subodharama Charitam,’ price six annas, is sanctioned
as a prize and library book for Secondary Schools in this Presidency.”

The D.P.I., Bengal, No. ^{8490-AC} 87/178-AC-18, dated 6th December 1918 :—

Approved as a prize and library book for use in Schools in this Presidency.

SOME OPINIONS.

MONSIEUR JULIEN VINSON, professr à l'Ecole des langues orientales vivantes, rue de
l'Université, No. 86 à Paris (France), Sept. 10th :—

“With great pleasure and enjoyment did I receive and read your most valuable work
“*Subodharama Charitam*” so elegantly written by you in the Sanskrit language and much
elegantly printed at Madras. It appears worthy of all praise and I hope it shall be used as a
text-book in the Universities examinations. If you were able to send me another copy,
I would like to present the *Asiatic Society* here with it.

We both are poets, since I wrote a few Tamil verses, but you are young, full of
hopes and joys, and I am old having experienced much trouble and sorrow. Allow me then
to wish you a long and happy life, devoted both to literary works and domestic virtue, which
certainly are the most precious jewels with which may be adorned so charming a young lady
as you.”

MR. M. COLLINS, B.A., Ph.D., Professor of Comparative Philology, Madras University
(18-11-'16) :—

I have read with interest the little book called Subodharama Charitam by Sister
V. Balammal. It gives the story of the Ramayana in a clear although extremely concise
form the whole poem consisting of only 251 slokas, if we omit the verses which stand in feli-
citous meter, at the beginning of each of the six Kandas. The story is told in a pleasing
simple style, which nevertheless displays the author's intimate acquaintance with the Sanskrit
tongue and with its intricate grammatical lore. Written as this book is by a Hindu lady
I feel that it should have a beneficial and stimulating influence as a text-book for girls' schools
in which Sanskrit is taught.

For copies apply to :—

1. SRIMATHI V. BALAMMAL, ‘Vivekashrama,’ Sullivan's Gardens Road, Mylapore, Madras.

or

2. MESSRS. SRINIVASA VARADACHARI & CO., Mount Road, Madras.

BOOKS

By Miss CORRIE GORDON, Ed.B. (Edin.)

Associate of the Froebel International Union, London; Specialist in Child Education;
President of the Association of Child Nature and Education of India; and
Lecturer, Teachers' College, Saidapet.Recommended by the Academic Council of the University of Madras
as suitable for students taking the L. T. Degree Examination.**ESSAYS ON THE CHILD AND HIS EDUCATION**

Price Re. 1-8. Postage, etc. extra.

OPINIONS.

The Hindustan Review, April 1917:—"Miss Corrie Gordon has rendered a service to the students of Kindergarten by publishing her *Essays on the Child and His Education* (Srinivasa Varadachari & Co., Madras). Though not professing to write a systematic treatise on the subject, Miss C. Gordon has managed to cover in her Essays, a very large ground. The information is well put together and will be found exceedingly useful by teachers and pupils alike. For those desirous of following up their course of studies further, she has appended a very instructive select bibliography of leading works on the subject. Altogether it is a capital little book and deserves

wide appreciation in this country for use in which it is especially intended by the writer."

Indian Education, June 1917:—"Miss Gordon deals with the child in the strict sense of the term, the young child, and her outlook is in the main that of Froebel. She has however remarks on Montessori, so the reader is brought quite up to date. The book is pleasant and readable and we know of no other better fitted to give the young teacher an insight into the general ideas and principles of the modern treatment of the young in Europe. It is suitable for school libraries and for the libraries of training institutions."

"FROM A KINDERGARTEN WINDOW"**ESSAYS ON EDUCATIONAL SUBJECTS**

FOR

TEACHERS AND STUDENTS

D.F'cap. 16mo. about 180 pages. Price Re. 1-8-0. Charges extra.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

CHILD NATURE AND EDUCATION

AN INTRODUCTION TO CHILD STUDY

Price—Rs. 2.**OPINIONS.**

The Madras Mail, Friday, October 31, 1924:

Books which deal with the problems of educational psychology from the Indian point of view are too few and we, therefore, welcome most cordially one which makes such a study and makes it well. Miss Gordon's contribution to this field is one which ought to be read carefully and digested thoroughly by all those who have to do with the education of children, whether teachers or parents.

The value of Child Study is first twofold, from the point of view of theoretical psychology, and second of education. Education along with psychology has much to learn from the science of biology which suggests to both of these sciences the unit for study, viz., a reaction which is a response to a stimulus. The mental life ought to be viewed as is the physical from this point of view. Further, biological science is showing the usefulness both as to method and content of the observation of development. The study of child-nature is in accord with the genetic method which characterises all the biological sciences. Educationally we have more to do with children than with adults in our schools and so from the practical point of view also the more that we can learn about the natures of educands the better for our work. Miss Gordon's book is thus a real contribution to our literature for it considers these questions with special reference to conditions in South India.

One of the most important of modern developments in this science is that made through the observation of individual differences. Although education is a social process and children are social in nature, yet we cannot deal with them too much in groups without doing great injustice to matters in which they are unlike. Studies made in Europe and America have their value for Indian teachers, but observations made in India, as Miss Gordon's have been, are of great value in enabling us to ascertain the similarities and differences with children of other countries, and the differences among groups and individuals here. Miss Gordon has not only given the result of her own observations but—what is even more important—she has shown teachers and others how they may observe for themselves.

The book surveys the more important problems connected with the study of child-nature. It deals with the stage of child development, with the processes of sense-perception, with play, hand-work, and fatigue, with exceptional children, both sub-normal and supra-normal, with measurements of intelligence, and with the application of the Kindergarten system to the Indian system. It is one of the books which the Academic Council on the recommendation of the Board of Studies in Teaching has declared as suitable for candidates for the L. T. degree. We hope that it may have a wide circulation as its influence is sure to be for good.

Education (Allahabad), March 1925.

The distinguished author of the book under review is one of the few enthusiasts in India who have taken to a systematic study of child-nature. The book embodies the results of close study by the author, not merely of the existing literature on the subject, but of the actual mental and physical growths of children, as witnessed by her in several schools in Britain and India where she has had the opportunity to work. Within a brief space of 200 pages, the author has contrived, in her plain, matter of fact, and at the same time, engaging style, to elucidate the various topics connected with child life such as the sense perception, play, the service of Hand in Mental Development, fatigue, exceptional children, measurement of Intelligence and the Kindergarten system; touching the various theories on these topics and supplementing them by her own views based on personal study and investigation. We would especially commend to our readers the beautiful and inspiring chapter on the Kindergarten system in which without going into technical detail, the author has surveyed the basic principles of the system and pleaded in accordance with these principles for the Indianisation of Indian education. We are sure that this little book will prove an excellent handbook for teachers as well as parents and others interested in the subject and kindle in them a deeper interest therein. It has been already recommended by the Academic Council of the Madras University as a suitable text-book for the students appearing for the L. T. Examination and we hope that other Universities will soon follow suit. We congratulate both the author and the publishers on this valuable publication and recommend every teacher to secure a copy thereof.

XXXIII—d

The Madras Christian College Magazine, January 1926.

The study of child-nature is exceedingly important for both of the sciences of Psychology and Education. Its importance for Psychology is from the genetic point of view. In the child one is able to observe in simpler forms many of the processes at work which in adult experience become so complex as to make them difficult of analysis. Its importance for Education is too obvious to need extended notice, and yet there are some who are so short-sighted as to neglect it. Here in South India there are a great number of schools in charge of teachers who do not know the elementary facts about child-nature. But with the progress of education the time will surely come when it will be considered as dangerous to employ a teacher who is ignorant of child-nature as it is to employ a man for a physician who knows nothing of anatomy and physiology. Such a book as that which Miss Gordon has written will serve a useful purpose in hastening that day by putting teachers in possession of a primer which contains the fundamentals of the subject in a readable style. It is the type of book which we would like to see translated into our South Indian vernaculars, because it not only includes the principles of the science, but states them with special reference to the needs of Indian teachers.

A personality is the outcome of forces which are both hereditary and environmental so that child study must take account of both sets of factors. Much more is to be gained by teachers through the study of children for themselves than the mere perusal of books on the subject, however authoritative they may be. The trouble with so many students of other things as well as of child-nature is the evident desire to be spoon-fed. They desire to get their information at second-hand rather than take the trouble to study for themselves. In many instances teachers have not the technique necessary to observe intelligently. Very valuable, then, is Miss Gordon's chapter on 'How to Study a Child,' particularly for those who are beginners in child study, and it is a matter of vital concern as much for the parent as for the teacher.

Certain subjects have been especially studied recently by educationists, and Miss Gordon gives useful accounts of the results of these studies. One chapter is devoted to the place of play in child life and in the educative process. It is a wholesome corrective for the old-fashioned idea that play is a superfluity. The author brings out some of the most useful services which are rendered by play, for play has direct educative value, assisting in the training of the judging and other mental processes, as well as in the spirit of fair-play and other moral qualities. The play-ground affords a splendid type of voluntary democratic organisation. Another chapter is devoted to 'The Services of the Hand in Mental Development.' Sometimes the school in emphasising the development of the mental processes has tended to neglect the fact that intelligence is sometimes motor, and that these two factors, the mental and motor, are closely related to one another. The questions of 'Exceptional Children' and 'The Measurement of Intelligence' are closely related, since it is through the latter that we get our most accurate knowledge of the former. A final chapter deals with a question on which Miss Gordon is surely competent to speak, 'The Kindergarten System and Its Application to Indian Children.' Altogether she has succeeded in writing a most useful little book, and we hope that it may have a good circulation among teachers and parents who cannot but profit by what she has written on the nature of children and how they should be educated.

REVIEWS AND PAPERS—EDUCATIONAL AND LITERARY

By GERALDINE HODGSON, B.A.

Trinity College, Dublin;

sometime Cobden Scholar of Newnham College, Cambridge.

D. Cr. 16mo. 310 pp. Rs. 2. Charges extra.

CONTENTS.

Educational.—Peter Paul Vergerius; Roger Ascham; John Colet; Fynes Moryson on European Education in the 16th Century; Milton as an Educator; John Stuart Mill as an Educator; Matthew Arnold as an Educator; The Place of Personality in Education; Dr. Creighton as an Educator.

Literary.—One of Shakespeare's Comedies; Henry Vaughan; Dryden's Inconsistency; Wordsworth; Mr. William Watson's Poems; Mr. Tabb's Poems; William and Fate—A Review; The Treasure of Humble Men; The Life of the Bees; Opinion; A Protest against Literary Rigidity.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

UNIVERSITY OF MADRAS.

Intermediate Examination, 1928.

SHAKESPEARE— <i>MERCHANT OF VENICE</i> RS. A.P. with Introduction and Notes, by J. H. Stone, M.A. (College Classics Series) ...	1	6	0
GRAY— <i>ELEGY AND OTHER POEMS</i> , with Introduction and Notes, by E. E. Kellett, M.A. ...	0	8	0
ARNOLD— <i>FORSAKEN MERCHANT AND RUGBY CHAPEL</i> , with Introduction and Notes, by E. H. Elliot, B.A. ...	0	4	0

Intermediate Examination, 1929.

SHAKESPEARE— <i>HENRY V.</i> , with Introduction and Notes, by P. H. Sturge, M.A., Principal, H. E. H. the Nizam's College, Hyderabad, late Scholar of King's College, Cambridge (College Classics Series) ...	1	6	0
WORDSWORTH— <i>SELECTIONS</i> containing <i>Laodamia</i> and <i>Ode to Intimations of Immortality</i> , with Introduction and Notes, by E. H. Elliot, B.A. ...	0	12	0
TENNYSON— <i>SELECTIONS</i> containing <i>CEANOE</i> AND OTHER POEMS, with Introduction and Notes, by the same editor ...	0	8	0
— <i>THE LOUIS EATERS</i> , with Introduction and Notes, by the same editor ...	0	4	0

B. A. Degree Examination, 1928.

SHAKESPEARE— <i>THE TEMPEST</i> , with Introduction and Notes, by E. E. Kellett, M.A. (College Classics Series) ...	1	6	0
— <i>MACBETH</i> , with Introduction and Notes, by Dr. J. Morrison, M.A. (College Classics Series) Re. 1-6-9. Slightly worm-eaten. Reduced to ...	1	0	0
MILTON— <i>PARADISE LOST</i> , Book I, with Introduction and Notes, revised by E. H. Elliot, B.A. ...	0	14	0
MATTHEW ARNOLD— <i>SCHOLAR GYPSY AND THYRSIS</i> , with Introduction and Notes, by the same editor ...	0	12	0

B. A. Degree Examination, 1929.

SHAKESPEARE— <i>MACBETH</i> , with Introduction and Notes, by Dr. J. Morrison, M.A., late Principal and Professor of English, General Assembly's Institution, Calcutta—(College Classics Series, Re. 1-6 Slightly worm-eaten. Reduced to ...	1	0	0
MILTON— <i>COMUS</i> , with Introduction, Copious Notes and Life of Milton, by Dr. S. Sathianathan, M.A., LL.B. (Cantab), Scholar of Corpus Christi College, Cambridge; formerly Professor of Logic and Moral Philosophy, Presidency College, Madras. 2nd edition. Revised and enlarged ...	0	12	0
MATTHEW ARNOLD— <i>SCHOLAR GYPSY AND THYRSIS</i> , with Introduction and Notes, by E. H. Elliot, B.A. ...	0	12	0

B. A. Honours Degree Examination, 1927 to 1930.

CHAUCER— <i>PROLOGUE</i> , with Introduction RS. A.P. and Notes, by W. J. Goodrich, M.A. ...	1	0	0
—by G. Maudox, B.A. Reduced price ...	0	4	0
— <i>KNIGHT'S TALE</i> , Part I. Lines 1 to 629, with Introduction and Notes, by E. H. Elliot, B.A. ...	1	0	0
— <i>NONNE PRESTES TALE</i> , with Introduction and Notes, by the same Editor. ...	1	2	0
SHAKESPEARE— <i>A MIDSUMMER NIGHT'S DREAM</i> , with Introduction and Notes, by Rev. K. Scott, M.A. ...	1	6	0
— <i>HENRY V.</i> , with Introduction and Notes, by P. H. Sturge, M.A. ...	1	6	0
— <i>TWELFTH NIGHT</i> , with Introduction and Notes, by M. Macmillan, M.A. ...	1	12	0
— <i>OTHELLO</i> , with Introduction and Notes, by the same Editor ...	1	6	0
MILTON— <i>PARADISE LOST</i> , Book I, with Introduction and Notes, revised by E. H. Elliot, B.A. ...	0	14	0
— <i>PARADISE LOST</i> , Book II, with Introduction and Notes, by W. Bell, M.A. ...	0	12	0
POPE— <i>RAPE OF THE LOCK</i> , with Introduction and Notes, by E. E. Kellett, M.A. ...	1	0	0
TENNYSON— <i>THE COMING OF ARTHUR</i> , Introduction and Notes only, by E. H. Elliot, B.A. ...	0	12	0
— <i>THE PASSING OF ARTHUR</i> , Introduction and Notes only, by the same editor ...	0	12	0
— <i>ULYSSES</i> and other poems, with Introduction and Notes, by the same editor ...	0	8	0
MATTHEW ARNOLD— <i>SCHOLAR GYPSY AND THYRSIS</i> , with Introduction and Notes, by the same editor ...	0	12	0
— <i>THE FORSAKEN MERCHANT AND BALDER DEAD</i> , with Introduction and Notes, by the same editor ...	0	12	0
DRYDEN— <i>PREFACE TO THE FABLES</i> , with Introduction and Notes, by P. Seshadri, M.A. ...	0	10	0
LAMB— <i>ESSAYS OF ELIA</i> (Selections) with Introduction and Notes, by J. H. Stone, M.A. ...	1	4	0
CARLYLE— <i>THE HERO AS POET</i> , with Introduction and Notes, by Rev. S. Gnana-muthu, M.A. ...	0	8	0
MATTHEW ARNOLD— <i>ESSAYS IN CRITICISM</i> , containing <i>Marcus Aurelius</i> and <i>Literary Influence of Academies</i> , with Introduction and Notes, by P. Seshadri, M.A. ...	1	0	0
ADDISON— <i>THE COVERLEY PAPERS</i> , with Introduction and Notes, by E. H. Elliot, B.A. ...	1	12	0

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

UNIVERSITY OF MADRAS—(continued)

B.A. Honours Degree Examin., 1927 to 1930—(contd.)		
COLERIDGE—THE RIME OF THE ANCIENT MARINER, with Introduction and Notes, by E. E. Kellott, M.A. ...	0 12 0	BYRON—CHILDE HAROLD'S PILGRIMAGE, RS. A.P. Canto I, with Introduction and Notes, by E. E. Kellott, M.A. ... 1 0 0
CHRISTABEL, with Introduction and Notes, by the same editor ...	0 12 0	Do do. Canto IV, with Introduction and Notes, by E. H. Elliot, B.A. ... 1 0 0
SHELLEY—ADONAI, with Introduction and Notes, by W. E. Hoare, M.A. ...	0 10 0	SWEET—A SECOND ANGLO-SAXON READER, Archaics and Dialectal, Part 2, Rs. 3-6 Reduced to ... 2 0 0
KEATS—ISABELLA, with Introduction and Notes, by E. H. Elliot, B.A. ...	0 12 0	

ANDHRA UNIVERSITY EXAMINATIONS, 1929.

Intermediate Examination in Arts and Sciences.

PART I.

SHAKESPEARE—AS YOU LIKE IT, with Introduction and Notes, by F.W. Kellott, M.A. 1 6	SHAKESPEARE—MACBETH, with Introduction and Notes, by the Rev. J. Morrison, M.A., D.D. Rs. 1-6-0 reduced to ... 1 0 (being shop-soil-d)
MATTHEW ARNOLD—RUGBY CHAPEL, with Introduction and Notes, by E. H. Elliot, B.A. ... 0 4	MILTON—PARADISE LOST, Book I, with Introduction and Notes, by T. V. Atgiasawmy Pillai, M.A., B.L. ... 0 6
GRAY—ELEGY, and other poems, with Introduction and Notes, by E.E. Kellott, M.A. 0 12	PARADISE LOST, Book I, with Introduction and Notes, revised by E. H. Elliot, B.A. ... 0 14

Other Intermediate and B.A. Books.

INTERMEDIATE GEOMETRY (Theory and Practice), by M. Satyanarayana, M.A., L.T., and K. S. Patrachariar, M.A., L.T. 4th and Revised Edition—Just ready ... 2 8 0	DEDUCTIVE LOGIC, for Intermediate Students, by Prof. G. Satyanarayana Murti, M.A. ... 2 0 0
THE STUDENT'S COMPANION TO GEOMETRY, for the Intermediate Examination of the University of Madras, by K. Deva Rao, B.A., L.T. ... 0 8 0	STUDENT'S HAND-BOOK OF PSYCHOLOGY, by the late Dr. S. Sathinadhan, M.A., L.L.B. (2nd Edition) ... 1 0 0
EXAMPLES ON TRIGONOMETRY, containing the F.A. Trigonometry Papers for 15 years, 1888 to 1902, with Solutions of all the Problems, by P. A. Subramana Aiyar, B.A., L.T. ... 0 8 0	QUESTIONS AND ANSWERS ON ELEMENTARY LOGIC, by M. Macmillan, M.A. 1 0 0
EXAMPLES ON ALGEBRA, containing F.A. Algebra Papers for 17 years, 1889 to 1905, by the same author ... 0 8 0	THE ELEMENTS OF HUMAN PHYSIOLOGY, by G. S. Ramasami Aiyar, B.A. ... 1 0 0
INTERMEDIATE CHEMISTRY, by P. Lakshmi Narasu, B.A., Professor of Physical Science, Pachaiyappa's College, Madras. 3 8 0	NOTES ON HUXLEY'S PHYSIOLOGY, by F. S. Muhammad Husain, B.A. (2nd Edition) ... 0 12 0
INTERMEDIATE PHYSICS, by the same author ... 4 0 0	B.A. EXAMINATION ENGLISH LANGUAGE, LITERATURE AND COMPOSITION PAPERS of 1881 to 1906 (both inclusive) ... 0 5 0
CHEMICAL PROBLEMS AND THEORIES, by Arudaya Krishna De ... 1 0 0	F.A. MATHEMATICS—ALGEBRA AND TRIGONOMETRY PAPERS, with Solutions and Notes from 1901—1903, by B. Hanumantha Rao, B.A. ... 0 4 0
LECTURES IN LOGIC, by Rao Bahadur S. Mangesh Rao, B.A. ... 2 8 0	MATHEMATICAL PROBLEM PAPERS by A. A. Krishnasami Aiyangar, M.A., L.T. ... 1 4 0
	TAMIL COMPOSITION, by G. Dimodara Mudaliar, B.A. ... 0 12 0

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD MADRAS.

Books at Reduced Prices.

ROBINSON—SHORT HISTORY OF ROME—RS. A.P. Rs. 2-10-0—Shop soiled. Reduced to ... 1 0 0	LESLIE STEPHEN'S SCIENCE OF ETHICS. Rs. 12. Reduced to ... 6 0 0
GREEK HISTORY, by Alice Zimmern ... 1 4 0	WILLIAM'S EVOLUTIONAL ETHICS. Rs. 9. Reduced to ... 5 0 0
ELEMENTS OF ANIMAL PHYSIOLOGY, by John Angell. Rs. 1-2-0. Reduced to ... 0 10 0	THATCHER & SCHWILL'S EUROPE IN THE MIDDLE AGES. Rs. 6-12-0. Reduced to ... 4 0 0
PHYSICS—An Elementary Text-book for University Classes, by C. G. Knott. Rs. 5-10-0. ... 3 0 0	PLOETZ EPITOME OF HISTORY—ANCIENT, MEDIÆVAL & MODERN. Rs. 5 10-0. Reduced to ... 3 8 0
HISTORICAL OUTLINES OF ENGLISH ACCIDENCE, by R. V. Richard Morris, M.A. Rs. 3 12-0. Reduced to ... 1 0 0	FAWCETT'S MANUAL OF POLITICAL ECONOMY. 7th edn. Rs. 9-0-0. Reduced to 4 0 0
OUTLINES OF THE HISTORY OF ENGLISH LITERATURE, by J. M. D. Meiklejohn, M.A. Rs. 1-2-0. Reduced to ... 0 10 0	JUDD'S—STUDENTS' LYALL, A Manual of Elementary Geology, 1896. Rs. 6 12-0. Reduced to ... 2 12 0
HUXLEY'S PHYSIOGRAPHY. Rs. 4-8-0. Reduced to ... 2 8 0	LAING'S ENGLISH LITERATURE. Rs. 1-8 0. Reduced to ... 0 12 0
TOPINARD'S ANTHROPOLOGY Rs. 2-10-0. Reduced to ... 1 12 0	RAWLINSON'S MANUAL OF ANCIENT HISTORY. 2nd edn. Rs. 10-3-0. Reduced to 5 0 0
TYLOR'S do. Rs. 5-10-0. Reduced to ... 3 0 0	

A TEACHER OF ENGLISH GRAMMAR AND COMPOSITION

BY

SIMHADRI APPAYYA.

late of the Maharajah's College, Vizianagaram.

Vol. I. Price: Rs. 1. Charges extra.

(Approved as a Text-book by the Department, May 1914.)

CONTENTS.

Part I—Orthography including Phonology. **Part II**—Etymology: Noun; Adjective: Pronoun; Verb; Adverb; Preposition; Conjunction; Interjection; Derivation. **Part III**—Syntax: The province of Syntax; Relation of words to one another; The Sentence (not Compound); The Compound Sentence. The Contracted Compound Sentence; Analysis of Sentences. **Part IV**—Special Points of Grammar: Nouns and Pronouns; Adjectives; Verbs; Adverbs and Relative Words Prepositions; Conjunctions; Parsing.

TATTVA-TRAYA

OR

APHORISMS ON THE THREE VERITIES,
SOUL, MATTER and GOD,

By

SRI PILLAI LOKACHARYA

TRANSLATED BY

the late SRI PARTHASARATHY AIYANGAR, B.A., B.L.,
High Court Vakil.

Price: Rs. 1-8-0.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

The College Classics Series of Shakespeare's Plays.

GENERAL EDITOR: F. W. KELLETT, M.A.

Henry V., by P. H. Sturge, M.A., Professor, Nizam's College, Hyderabad. Cloth Re. 1-6-0.
Tempest, by E. E. Kellett, M.A., Master, Leys School, Cambridge. Cloth Re. 1-6-0.

Midsummer-Night's Dream, by Rev. R. Scott, M.A., Professor of English, Wilson College, Bombay. Cloth Re. 1-6-0.

As You Like It, by the late F. W. Kellett, M.A. Cloth Re. 1-6-0.

King John, by Mark Hunter, M.A., Principal, Rajahmundry College. Cloth Re. 1-4-0.

Julius Caesar, by Mark Hunter, M.A., Principal, Rajahmundry College. Third Edition—Cloth Re. 1-12-0.

Merchant of Venice, by J. H. Stone, M.A., Principal and Professor, Presidency College, Madras. Cloth Re. 1-6-0.

Othello—The Moor of Venice, by Michael Macmillan, B.A., late Principal and Professor of English, Elphinstone College, Bombay. Cloth Re. 1-6-0.

Hamlet, by W. J. Goodrich, M.A., formerly Principal and Professor of English, Pachaiyappa's College, Madras, and afterwards Principal and Professor of English, Ahmedabad College, Bombay. Cloth Re. 1-10-0.

Macbeth, by Dr. J. Morrison, M.A., late Principal and Professor of English, General Assembly's Institution, Calcutta. Re. 1-6-0.

A few of the opinions of the Series are given below.

Of the College Classics Series of Shakespeare's Plays, PROFFESSOR E. DOWDEN, Trinity College, Dublin, writes —
"I must ask you for a full and generous forgiveness of my silence. When *The Tempest* came, I was much occupied with French literature, and I looked hastily into it, and kept postponing a fuller examination. The *Henry the Fifth* came when I was in America.

Now I am acquainted with both volumes of your Shakespeare Series, and I can return you genuine thank for editions, so thorough, so scholarly, and at the same time, so interesting in their treatment of literary history of the genius and work of Shakespeare and of the individual plays dealt with in each volume.

I hope the series will be widely used by students of Shakespeare."—7th January 1897.

Twelfth Night, by Michael Macmillan, M.A., D.Litt., I.E.S. (Retired) English Lecturer in the University of Birmingham; formerly Principal and Professor of English, Elphinstone College, Bombay. Cloth Re. 1-12-0.

The Madras Christian College Magazine:—"Dr. Macmillan is well-known for his scholarly editions of *Julius Caesar* and other plays, and this edition of *Twelfth Night* is worthy of his reputation. It may be cordially recommended to Indian students.

Errors of the press are few and unimportant. The notes are no mere compilation, but the work of a ripe scholar bringing his own judgment to bear on the text. Many old puzzles are treated in a fresh and interesting fashion."

The Hindustan Review:—"In their 'College Classics Series of Shakespeare's Plays,' Messrs. Srinivasa Varadachari & Co., (Madras) have recently published an excellent text of *Twelfth Night*, edited and annotated by Professor Macmillan. The introduction is exceedingly good and the notes are all that they should have been. Though primarily meant for Indian students, the series in which it appears should appeal to all lovers of the great dramatist. The get-up is very neat.

The Mysore University Magazine, February, 1918:—"Messrs. Srinivasa Varadachari & Co., of Madras, have published a new edition of *Twelfth Night*, by Mr. M. Macmillan. This edition belongs to the College Classics Series of Shakespeare's Plays. There is a full introduction, which gives a good summary of all information necessary for a thorough understanding of the play, together with a criticism. The notes are quite full and deal with all the difficulties. The editor at times shows great ingenuity in detecting a more difficult interpretation. Mr. Macmillan, who is a lecturer in Birmingham University, was formerly in the Indian Educational Service, and one of the special features of this edition is the introduction of parallels from Indian literature. This feature should be of much value to Indian students, for whom the edition is primarily intended, and for whom it may be cordially recommended.

Shakespeare—Richard II, with Introduction and Notes, by Prof. J. C. Rolfe, M.A., Mysore University. Price Re. 1-12-0.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

தமிழ்ப் பிரசுரங்கள்.

1. நந்தன் சரித்திரம்.—ஆசிரியர் T. G. சுவாமிநாத அய்யங்கார் அவர்கள், M.A. கிடை அணு 10.

Approved as a Library Book.

2. போஜ சரித்திரம்.—ஆசிரியர் K. S. ராமஸ்வாமி சாஸ்திரி அவர்கள், B.A., B.L., ஸட்டிங், தஞ்சாவூர். கிடை அணு 10.

Approved as a Text-book suitable for School use, vide Fort St. George Gazette, Part I-B, dated 19-5-1925.

3. ராஜ ராஜ சோழன் I.—ஆசிரியர் P. V. ஜகதீச ஸ்வர் அவர்கள், R. ரங்காசாரியர் அவர்களுடைய முன்னுரைபுடன் கூடியது. கிடை அணு 8.

Approved as a Text-Book suitable for School use.

4. இட்டார்க்கு இட்ட பலன்.—ஆசிரியர் மிஸ் J. பொன்னுசாமி ராவ். கிடை அணு 10.

Approved as a suitable Text-Book, vide Fort St. George Gazette, dated 24-7-23.

5. திலகவதி.—சோதரி V. பாலம்மாள் (சிந்தாமணி பத்திராதிபர்) எழுதியது. ராவ் ஸாஹெப் S. கிருஷ்ணஸ்வாமி அய்யங்கார் எழுதிய முன்னுரைபுடன் கூடியது கிடை ரூ. 1—4—0.

Approved as a Library Book.

6. தமிழ் வசன லக்ஷணம்.—G. தாமோதர முதலியார், B.A., எழுதியது. கிடை அணு 12.

Approved as a Text-Book for Schools and Colleges, vide Fort St. George Gazette, 21st October 1913.

7. இரகுவர்சம் முதல் பாகம்.—(1—6 சருக்கங்கள்) பண்டித ஸ்டீச சாஸ்திரியார் அவர்கள் எழுதியது. கிடை அணு 12.

8. இரகுவர்சம் இரண்டாம் பாகம்.—(7—12 சருக்கங்கள்) பண்டித ஸ்டீச சாஸ்திரியார் அவர்கள் எழுதியது. கிடை அணு 12.

Parts I and II are approved as suitable class-books, vide Fort St. George Gazette, Part I-B, page 478, dated 3-6-24.

9. சுகாதாரபோதினி.—(முன்னுரை பார்க்கிற்று) K. வரதாஜ ராவ் இயற்றியது. கிடை அணு 8.

Approved as a Text-book suitable for School use, vide Fort St. George Gazette, Part I-B, dated 19-5-1925.

10. மனு சரித்திரம்—சென்னை க்ரீஸ்டியன் காலேஜ் தமிழ் போதகாசிரியாரியிருந்த சூர், இரங்காசாரியார், M.A., L.T., அவர்கள் இயற்றியது. கிடை அணு 10.

11. காளிதாஸன்.—ஆசிரியர் K. S. ராமஸ்வாமி சாஸ்திரி அவர்கள், B.A., B.L., ஸட்டிங், தஞ்சாவூர். கிடை அணு 12.

Approved as a Text-book suitable for School use, vide Fort St. George Gazette, Part I-B, dated 19-11-1927.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

Fifth & Revised Edition.

A COURSE OF GENERAL MATHEMATICS FOR HIGH SCHOOLS

(WITH ADDITIONAL CHAPTERS)

Written in accordance with the recently-
revised S. S. L. C. Syllabus in
Elementary Mathematics

By V. RAGHUNATHA AIYAR, B.A., L.T.

Assistant, Teachers' College, Saidapet.

Crown 8vo. 568 pages with over 200 diagrams.

Approved as a Text-book for Schools under Public management,
vide Fort St. George Gazette, Part I-B, p. 641, dated 21-6-21.

Approved as a Text-book suitable for school use,
vide Fort St. George Gazette, Part I-B, p. 877, dated 21-9-21.

Price—Rs. 2.

CONTENTS.

Chapter I. The Four Rules; Factors and Multiples; Vulgar Fractions; Decimals.
Chapter II. Symbolic Arithmetic; Symbolic Representation; Positive and Negative quantities;
Some Identities and their Applications. Chapter III. The Simple Equation and its Applica-
tions. Chapter IV. Circles, Angles and Parallels; The Circle; Angles; Drawing perpendi-
culars with set squares; Parallels. Chapter V. Ratio and Proportion; Ratio; Proportion,
Direct and Inverse; Proportional Division. Chapter VI. Averages. Chapter VII. Percentage.
Chapter VIII. Areas of Simple Rectilinear Figures; The Rectangle; The Right-angled
Triangle; The Parallelogram; The Triangle; The Trapezium. Chapter IX. Graphs
(Introductory)—Plotting. Chapter X Simple Interest. Chapter XI. Contracted Methods.
Chapter XII. Compound Interest. Chapter XIII. The Cube and the Cuboid. Chapter XIV.
Simultaneous Equations and their applications. Chapter XV. The Straight Line Graph;
Chapter XVI. Square Root. Chapter XVII. Symmetry in Figures; Constructions.
Properties of symmetrical figures and their applications; Construction of Regular Polygons;
Construction of Tangents. Chapter XVIII. Area of the Circle, Sector and Segment.
Chapter XIX. The Right Prism, Cylinder and Cone. Chapter XX. Graphs—(continued).
Chapter XXI. Miscellaneous Examples. Chapter XXII. Discount and Exchange.
Chapter XXIII. Stocks and Shares. Chapter XXIV. Time and Distance. Chapter XXV.
Time and Distance—Graphs. Chapter XXVI. Partnership. Chapter XXVII. Problems
on Work and Time. Chapter XXVIII. Problems on Profit and Loss; Madras Secondary
School-Leaving Certificate Examination Papers. Appendix I. Tables of Money, Weights
and Measures; Answers.

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

Fourth Edition—Revised and brought up-to-date.

IMPORTANT TO INTERMEDIATE STUDENTS.

INTERMEDIATE GEOMETRY (THEORY AND PRACTICE)

Containing a detailed and exhaustive treatment of the matter for the
Intermediate Examination with special reference to the Syllabuses of
the Madras and Mysore Universities.

Crown 8vo. 360 pp. with over 130 diagrams

By M. SATYANARAYANA, M.A., L.T.

Chief Lecturer in Mathematics, Maharajah's College, Vizianagrum

AND

K. S. PATRACHARIAR, M.A., L.T.

Chief Lecturer in Mathematics, Government College, Kumbakonam.

Price: Rs. 2-8-0.

CARLYLE:

"THE ANCIENT MONK" (Past and Present—Book II)

with

NOTES, INTRODUCTION AND APPENDICES, Etc.

BY

P. R. KRISHNASWAMI, M.A.

Govt. College, Kumbakonam.

Price: Re. 1.

THE HISTORY OF EDUCATION IN THE MADRAS PRESIDENCY

By Dr. S. SATTIANADHAN, M.A., LL.M.

Board, Rs. 3.

(Published with the sanction of the Director of Public Instruction, Madras.)

"The Director welcomes the appearance of this much-needed volume, the publication of which was sanctioned in Proceedings No. 609, dated 26th January 1894. Mr. Sattianadhan has spared no pains to get at facts, and having got them, he has presented them in an orderly arrangement and in clear, well-chosen language. The book deserves to be in the hands of every one engaged in educational work in this Presidency."—*Proceedings of the Director of Public Instruction, No. 11817, dated 6th December 1894.*

"This is a most useful and valuable book and well deserves the high-praise the Director of Public Instruction has given it. The information is very complete, well-arranged and well-written."—*The Madras Mail.*

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

THE EIGHTH AND REVISED EDITION OF
ELEMENTARY MATHEMATICS, Part I
*Prepared in accordance with the Course of Study prescribed for Secondary
School-Leaving Certificates*

BY RAO BAHADUR **P. V. SESHU AIYAR, B.A., L.T., I.E.S. (retired),**
Late Principal and Professor of Mathematics, Govt. College, Kumbakonam

AND

V. VENKATASUBBAYYA, B.A., L.T.
Head Master, High School Department, Pachayappa's College, Madras.

WITH A PREFACE

BY THE HON'BLE **E. W. MIDDLEMAST, M.A.**
Professor of Mathematics and Principal, Presidency College, Madras.

CONTENTS.

Chapter I. Notation and Numeration; II. Lines, Points and Measurement of Length; III. Addition and Subtraction; IV. Multiplication; V. Division; VI. Compound Quantities; VII. Angles and their Measurement; VIII. Decimals; IX. Greatest Common Measure and Least Common Multiple; X. Vulgar Fractions; XI. Practice; Revision Papers—I Series; XII. Multiplication and Division of Decimals; XIII. Averages, Ratio, Etc.; XIV. Area; XV. Generalised Arithmetic: Equations; XVI. Triangles: Their Sides and Angles; XVII. Bisection of Lines and Angles; Miscellaneous Examples; Revision Papers—II Series; XVIII. Percentage and its Applications; XIX. Negative Numbers and Algebraic Expressions; XX. Parallel Straight Lines and Their Properties; XXI. Graphs; XXII. Proportion—Direct and Inverse; XXIII. Congruence of Triangles; XXIV. Areas of Triangles, Parallelograms and Circles; XXV. Volume; XXVI. Miscellaneous Examples; Revision Papers—III Series; Answers; Appendix. Tables of Compound Quantities.

Price Rs. 2.

Approved as a Text-book for Secondary Schools (Fort St. George Gazette, 4th June 1912, page 370).
and (The Madras Government Gazette, 15th June 1912.)

Also for Schools under Public management. Fort St. George Gazette, December 1913.

BY THE SAME AUTHORS.

PART II. Sixth and Entirely Revised Edition—1924.

“ELEMENTARY MATHEMATICS”

Prepared in accordance with the Course of Study prescribed for Secondary School-
Leaving Certificates.

Price Rs. 2.

Approved as a Text-book for Secondary Schools (Fort St. George Gazette, June 1915)

Also for Schools under Public management. (Fort St. George Gazette, July 1917.)

SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

Printed and published by Srinivasa Varadachari & Co., No. 4, Mount Road, Madras—25.11.1927.