

## BOOK REVIEW

MATHEWS (P. M.) AND VENKATESAN (K): A Text Book of Quantum Mechanics. Pp. 387 + xv, Tata McGraw-Hill Pub. Co. Ltd., New Delhi, 1976, Rs. 18.00.

Quantum Mechanics is an area where a large number of good texts are available and one immediately questions the need for the publication of a new text book. A publication could be justified by a new way of dealing with the subject or by a new range of topics covered or by a new approach or at least by a low cost. The book by Prof. P. M. Mathews and Mr. K. Venkatesan appears at first sight to be similar to many texts available on the subject, which makes one wonder about the need. It is only after careful repeated readings of the text that one appreciates the virtues of the book, which earn for it a rightful place.

The arrangement of the topics in the book is quite conventional. One starts with a brief survey of the inadequacy of the classical ideas and of the elementary older quantum theory. One then moves on to the ideas of wave mechanics, the postulates of quantum mechanics, exactly soluble problems, approximation techniques, scattering theory, angular momentum, time dependent problems and finally to the basic ideas of relativistic quantum mechanics. Each of the 10 chapters has a few problems, which could test the students. References are given, sometimes to the classic original papers and sometimes to recent easily available books. There are 7 short appendices covering mostly mathematical background material.

On a careful scrutiny one begins to see the clarity of thought and the precision of expression, used throughout the text. Almost every item discussed in the book is treated as completely as possible, within the limitations imposed by the length and the level of the book. A few items are introduced deliberately to highlight some aspects. One can cite the discussion of the accidental degeneracy of the Coulomb field, time reversal, Clebsch-Gordon coefficients, introduction of Green's functions and propagators, density matrix and so on as examples. In other words, a student wanting to understand Quantum Mechanics will find a considerable amount of material here, which would clarify his ideas. He will also get a reasonable

grounding of the subject, if he were to work through the details of all the material given in the book.

The level of the book is appropriate to students specialising in theoretical physics at the M.Sc. of our Universities and indeed the material has been given as lectures for over 10 years to this category of people. Other M.Sc. students could profitably consult the book for various items, though it is not easy to break up the book into areas which can be read independently and in a self-contained manner.

One did not come across any item or statement seriously in error though each author may have his own predilections and prejudices. The proof reading and editorial work are of high standard. The only serious complaint one can make is regarding the continued use of c.g.s. system of units, when the S.I. units have been universally accepted as the preferred system of units. Although earlier generations of physics students were trained on c.g.s. units, we have a duty to train the new generation to be familiar with metres and kilograms. This could be done in a later edition or reprinting.

It is finally of interest that the writing of the book has been supported by the University Grants Commission and the publication by the National Book Trust. The price is therefore a modest Rs. 18, which makes the book a good buy. The physics community must be thankful to the two organizations for making a fine book available at low cost.

E. S. RAJA GOPAL.

## Calendar of events: Conferences/Symposia at the Indian Institute of Science Campus

Name	Period	Sponsoring Department of the Institute
Seminar of Missile Panel	7-9 September 1976	Aeronautical Engineering
19th General Assembly of the International Union of Biological Sciences (INSA)	26th September to 5th October 1976	Biochemistry
CSIR Meeting on Material Sciences	12-16 October 1976	Physics
Applications of Computers for Load Despatch	11-16 October 1976	School of Automation and Electrical Engineering
Winter School in Engineering Applications on Lasers and Laser Systems	18 October to 1 November 1976	Central Instruments and Services Laboratory
Intensive Course on Design and Technology of Digital Equipment	21 November to 4 December 1976	Electrical Communication Engineering
Hybrid Simulation and Industrial Process System Design	22 November to 8 December 1976	School of Automation
Symposium on Vitamin and Carrier Function of Polyprenoids	9-11 December 1976	Biochemistry
6th All-India Symposium on Biomedical Engineering	14-16 December 1976	Biomedical Engineering Group (I.I.Sc.)
Silver Jubilee Celebrations of the Department of Chemical Engineering	20-24 December 1976	Chemical Engineering

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