

SCIENCE

VOL. LXXI

FRIDAY, APRIL 4, 1930

No. 1840

| | | | |
|--|-----|---|------------------------|
| <i>Theoretical Mechanics in Engineering Schools: PROFESSOR WILLIAM HOVGAARD</i> | 347 | <i>Detecting Acid-fast Bacteria in the Soil: PROFESSOR CARL A. FREY</i> | 365 |
| <i>Plant Quarantine: PROFESSOR E. O. ESSIG</i> | 350 | <i>Special Articles:</i> | |
| <i>Obituary:</i> | | <i>Susceptibility of White Mice to the Virus of Yellow Fever: DR. MAX THEILER. An Interpretation of Mass Conjugation in Paramecium: PROFESSOR A. WILLEY and C. LHERISSON. Is There a Neuromotor Apparatus in Diplodinium ecaudatum? DR. CHAS. W. REES</i> | |
| <i>Recent Deaths; Memorials</i> | 353 | | 367 |
| <i>Scientific Events:</i> | | <i>Science News</i> | x |
| <i>The Centenary of the British Association for the Advancement of Science; Reforestation in New York State; The Pearl-oyster Resources of the Hawaiian Islands; The Field Columbian Museum; The Tucson Meeting of the Southwestern Division of the American Association</i> | 354 | SCIENCE: A Weekly Journal devoted to the Advancement of Science, edited by J. McKEEN CATTELL and published every Friday by | |
| <i>Scientific Notes and News</i> | 357 | THE SCIENCE PRESS | |
| <i>Discussion:</i> | | New York City: Grand Central Terminal | |
| <i>Our Contemporary Research "Aces": DR. W. H. MANWARING. σ: PROFESSOR EDWIN G. BORING. Pedography: DR. GUY-HAROLD SMITH. Overhead: PROFESSOR T. D. A. COCKERELL</i> | 361 | Lancaster, Pa. | Garrison, N. Y. |
| <i>Quotations:</i> | | Annual Subscription, \$6.00 | Single Copies, 15 Cts. |
| <i>The New Planet</i> | 364 | SCIENCE is the official organ of the American Association for the Advancement of Science. Information regarding membership in the Association may be secured from the office of the permanent secretary, in the Smithsonian Institution Building, Washington, D. C. | |
| <i>Scientific Apparatus and Laboratory Methods:</i> | | | |
| <i>A Convenient Method of Reducing Desiccation in Slant Cultures: C. E. BURNSIDE. A Method for</i> | | | |

THEORETICAL MECHANICS IN ENGINEERING SCHOOLS

By Professor WILLIAM HOVGAARD

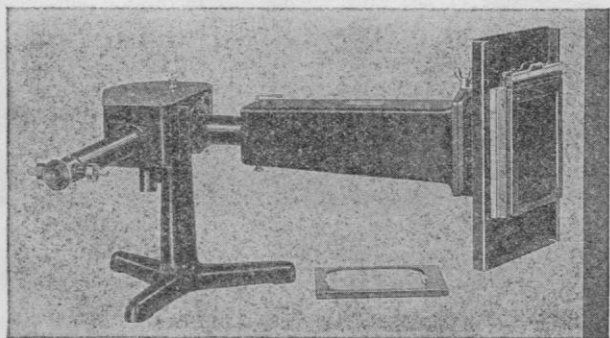
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As indicated by the title, it is proposed to deal with theoretical mechanics chiefly from the engineer's point of view, but in modern engineering colleges it is impossible to draw a sharply defined line between the education of engineers and physicists. The modern engineers of advanced scientific standing, notably research engineers of all professions, are required to be physicists as well as engineers. Moreover, a high-grade technical school seems to afford the best environment for the education of physicists, while physics forms one of the most important disciplines in the education of engineers. We shall therefore on several occasions refer to the requirements of the physicists.

Mechanics is commonly subdivided into two parts, theoretical and applied, but it is proposed here to deal in particular with the former, which bears a close relationship to mathematics and, in its widest

sense, forms the main body of what is usually called applied mathematics. Often the two parts of mechanics, the theoretical and the applied, are dealt with and taught together, but it will be here attempted to distinguish rather sharply between them, although it is not always easy to do so.

The name applied mechanics is misleading and confusing. As commonly understood this science deals only with the application of theoretical mechanics to structural and mechanical engineering, but it might with equal right be said to deal with other branches of engineering where theoretical mechanics in the modern and wider sense is applied to the same extent. We shall not, however, try to widen the meaning of the term applied mechanics beyond common usage, but rather extract that which does not belong to it, for as taught at present it comprises much of an abstract nature which properly belongs under theo-



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