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# SCIENCE NEWS LETTER

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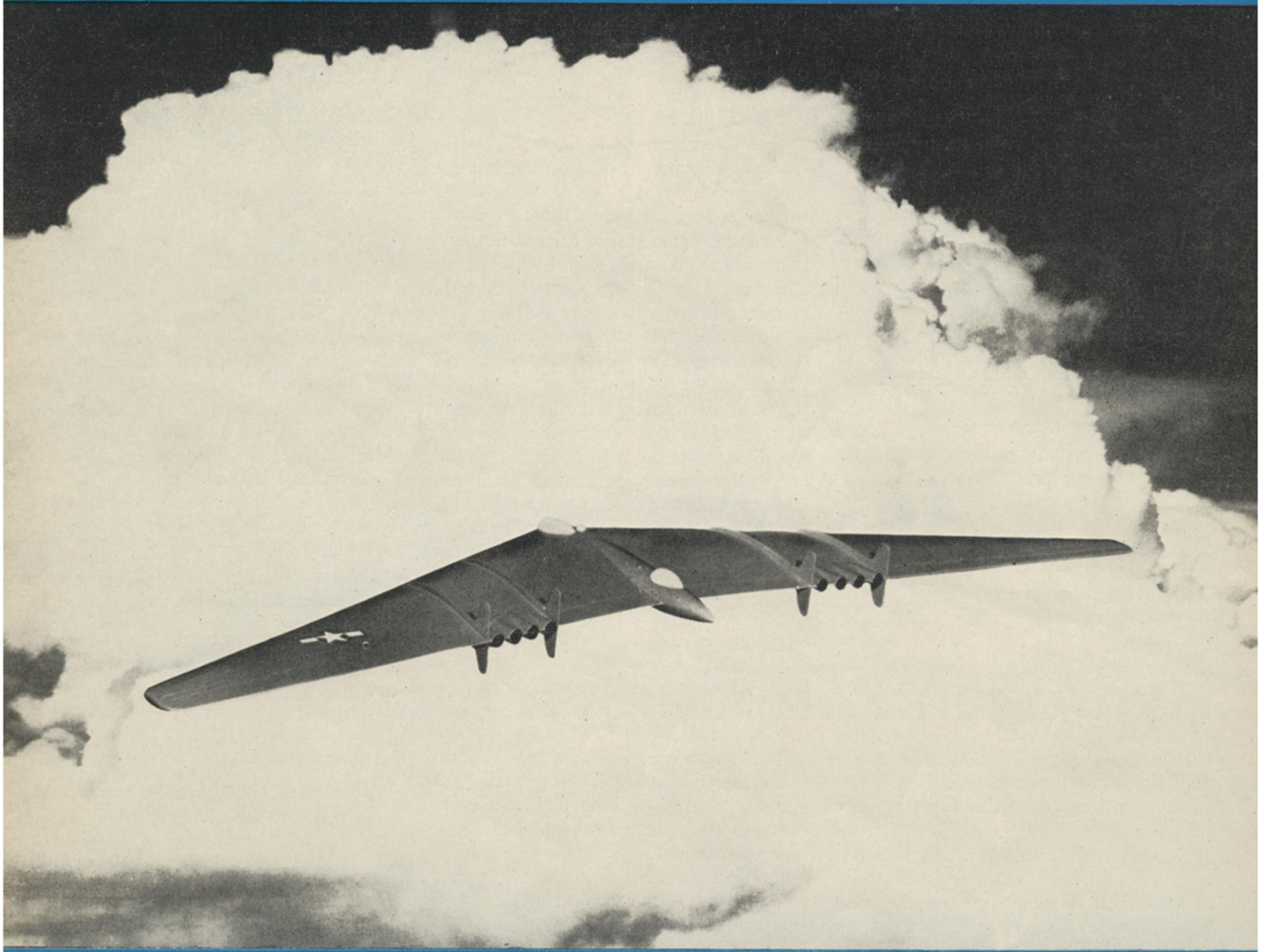

**Flying-Wing**

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# SCIENCE SINCE 1500


## *By* H. T. PLEDGE

***Librarian, Science Museum of London***


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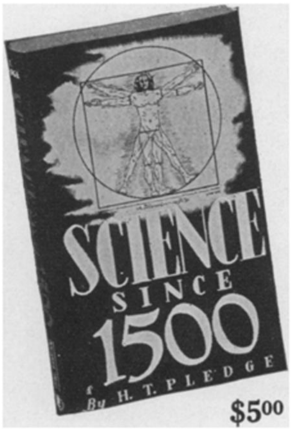
# "A THOROUGH-GOING HISTORY OF SCIENCE"




**"The author takes the subject and the reader in his stride on a journey which must be ranked as a very able performance, indeed. The illustrations are excellent, the bibliography is unusually helpfully arranged, and the indices are full and satisfactory."**

***—M. F. Ashley Montagu, The New York Times***

**"H. T. Pledge, of the Science Museum, London, has given a remarkably complete account of mathematics, physics, chemistry, and biology in his period, based on careful scholarship, and he has included some original features. He has not overlooked the question of the social relation of science, which is now converting the history of science from a minor into a major subject. A standard book in all libraries, and in particular it will be a perfect science prize for educational institutions."**

***—The Manchester Guardian***

## FROM THE TABLE OF CONTENTS (*Continued*)

**MAINLY ORGANIC CHEMISTRY—Experimental science again. End of the anarchy of the fifties in chemistry; groups of elements, homologous series; Avogadro's hypothesis; periodic law. Organic: crystals again, stereoisomerism; biochemistry and chemical industry; aromatics; typical constitutions. Notes on apparatus, especially chemical.**

**SURFACES AND IONS—Physical chemistry: balanced actions and thermodynamics. Electrochemistry; Raoult, osmosis; ionic dissociation theory, gas analogy. Colloids and surface chemistry. Catalysts and enzymes: surfaces again.**

**CYTOLOGY AND GENETICS—Cell division and union with the aid of new microtechnique; Weissmann. Ancient experiments in breeding; the part played by religious houses; pre-Mendel and Mendel; the gene; heredity and environment; the gene-complex; relation to evolution.**

**GROWTH AND UNITY OF THE INDIVIDUAL I—Embryology; cytological and evolutionary; experimental; technique of tissue culture; "rate genes." Nerves; neurons, integrative action; adrenaline and acetylcholine, importance of ultra-sensitive instruments; electrochemical models for nerve and muscle.**

**GROWTH AND UNITY OF THE INDIVIDUAL II—Internal secretion; dependence of our knowledge on antiseptic and other operative advances; the integration of the individual; plant hormones. Deficiency diseases; metabolic thermodynamics; vitamins. Some biochemical points: vitamins, pigments, respiration, and photosynthesis.**

**ECOLOGY—Pigments continued (vision); comparative biochemistry; the interrelations of life, that is, ecology. Its chief ideas and economic relations; soil science; parasitism, fluctuations, their mathematics and relations to evolution.**

**MODERN EXPERIMENTAL PHYSICS—Vacuum pumps and tubes; electrons; radioactivity; the planetary atom; atomic number; isotopes; projectile physics and new ultimate particles.**

**QUANTUM THEORY—Statistical and radiational theories and their erroneous result. Interferometers; line spectra, and no explanation. Quanta; Bohr; correspondence principle; matrices and wave-mechanics; probability and uncertainty; the relativistic equation.**

**RELATIVITY AND COSMOLOGY—The interferometer and special relativity. General relativity; efforts to geometrise electromagnetism. Astrophysics: Laplace's hypothesis and the alternatives; the spectroscope and spectral classifications; the galaxy; stellar evolution. Cosmological consequences of general relativity; Einstein and de Sitter; Milne and Eddington.**

**REAL MATERIALS I AND II—Subjects of Chapters XIV and XV revived by fresh elements from physics: crystals (once more) and X-rays; from valency to lattice and (with quanta) to the architecture of the solid state. Surfaces again; oriented films. Fibres and proteins; "templates." From ideal to real materials; real gases and electrolytes; reaction kinetics, activation, chains, reactions at surfaces; real liquids, vortices, boundary layers, in relation to the weather, ships and aeroplanes; real solids, geophysics.**

**CONCLUDING DISCUSSION • BIBLIOGRAPHICAL NOTE • SUBJECT INDEX • NAME INDEX.**

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