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Illustrated Popular Lectures
MAN - NATURE - SCIENCE.



PHOTO

RUSSELL, LONDON.

FREDERICK ADDEY, B.Sc.

*Fellow, The Royal Astronomical Society.
Membre, Société Astronomique de France.*

*Fellow, The Royal Microscopical Society.
Member, Institution of Electrical Engineers.*

Mr. ADDEY is a lecturer of wide experience who possesses, to a remarkable degree, the power of imparting to his audience his own enthusiasm for the wonders of Nature and Science. He lifts his hearers out of themselves and carries them to realms of realities that transcend the bounds of human imagination and in comparison with which Fiction seems stale and flat.

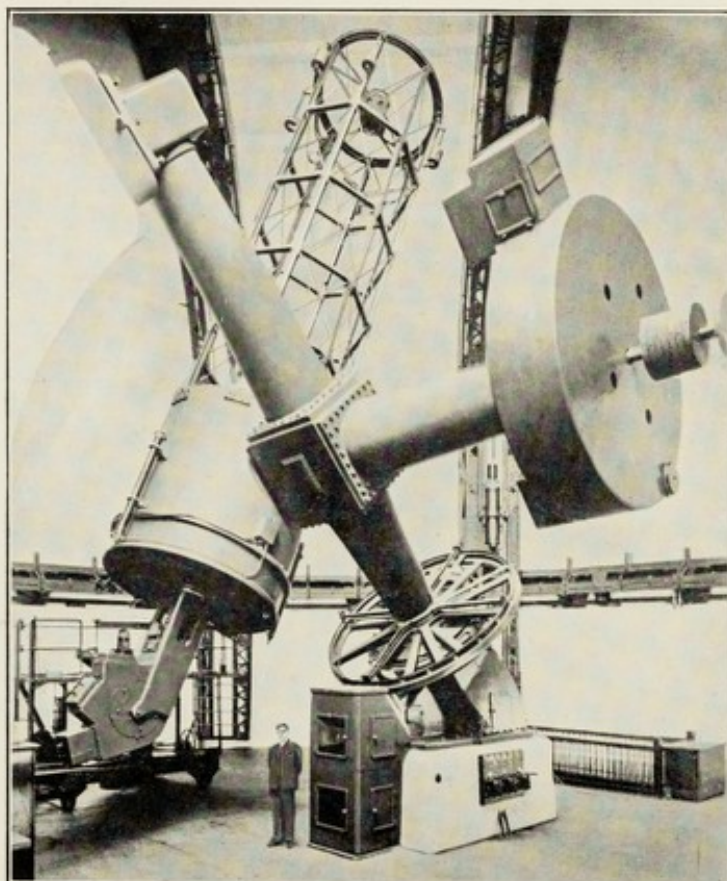
BIOGRAPHIES OF SCIENCE : *Three Lectures.*

1. Man's Outlook on the Universe.
2. The Founders of Modern Astronomy.
3. The Founders of Modern Biology.

These vivid stories of man's progress in knowledge of the Universe, and of the struggles and persecutions endured by the Pioneers in Science, are of surpassing human interest.

1. MAN'S OUTLOOK ON THE UNIVERSE.

One of the most remarkable achievements of the twentieth century has been the tremendous widening of our knowledge of the extent and structure of the Universe. From the early gropings of the Egyptians, Chaldeans and Greeks, who imagined the earth to be the centre, our knowledge of the Universe has grown until, with the aid of the giant telescopes of to-day, we are now able to sound the depths of space, to measure the enormous distances and sizes of the stars, the terrific speeds at which they are moving, how hot they are and how they are born, pass their lives of millions of years and die. The spectacle thus revealed to us is supremely fascinating and awe-inspiring.



72 inch Reflector—Dominion Astrophysic Observatory. Victoria B.C.

2. THE FOUNDERS OF MODERN ASTRONOMY.

An account of the dramatic lives and adventures of Copernicus, who proved that the earth and the planets move round the sun; of Tycho Brahé and Kepler, who discovered the laws governing their motion; of Galileo, who invented and was the first to use the telescope; and of Newton, who crowned the whole by his discovery of the law of gravitation—the most fundamental scientific discovery. To these men we owe not only our present ordered knowledge of the material world, with all the increased resources of civilisation to which it has given birth, but also, owing to the battles which they fought against the ignorance and prejudices of their day, a very great measure of the intellectual freedom which we now enjoy.

3. THE FOUNDERS OF MODERN BIOLOGY.

The romantic story of the lives and work of the men to whom we owe our knowledge of living things. This lecture tells of the beginnings of man's study of plants and animals, of his early efforts to understand their structure and to arrange them into natural groups, and of his investigations into the remains of living things of past ages left as fossils in the rocks. Of how ideas began to grow of a relationship between the world of the present and of the past, of the work of Lyell, Scrope, Huxley, Wallace and Darwin in fostering these ideas, and of the revolution in thought brought about by the publication of Darwin's "Origin of Species."

EACH LECTURE IS COMPLETE IN ITSELF, AND IS BEAUTIFULLY ILLUSTRATED.

ACTIVITIES OF SCIENCE : *Four Lectures.*

4. The Telescope and its Revelations.
5. Our National Observatory at Greenwich.
6. Time—Its Flight, Pursuit and Capture.
7. Radio-Telegraphy and Television.

4. THE TELESCOPE AND ITS REVELATIONS.

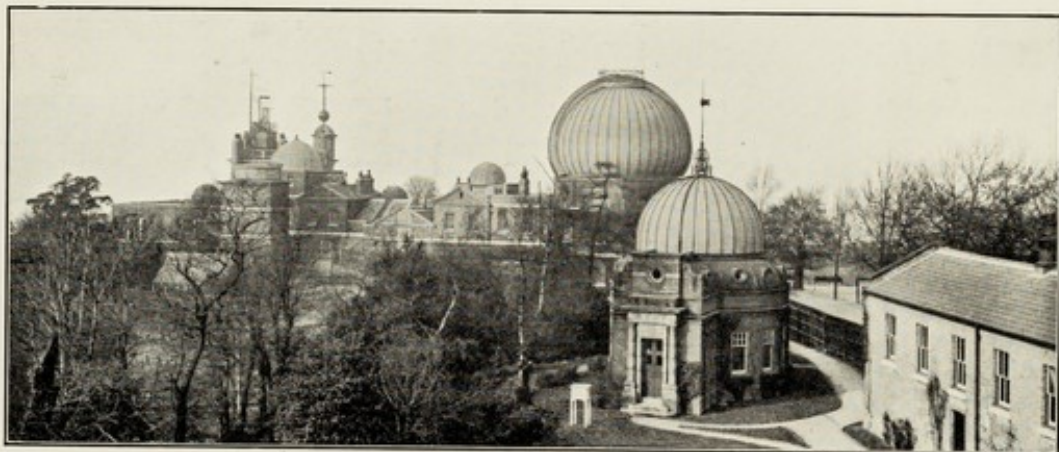
The stars have always exercised a fascination for man. Even to the unaided eye the heavens present a spectacle of wonderful beauty, but with the aid of the telescope the wonder and beauty of the spectacle are increased to an incredible extent.

In this lecture an account is first given of the development of the telescope, followed by descriptions of some of the marvels it has revealed to us, including the great flames of the sun, the wild scenery of the moon, Jupiter and its family of moons, the rings of Saturn, double and multiple stars, the star clusters and the Milky Way, and finally the spiral nebulae, separate universes of stars sunk in the depths of space, the whole illustrated by many magnificent photographs taken with the largest telescopes in the world.

5. OUR NATIONAL OBSERVATORY AT GREENWICH.

Our national Observatory at Greenwich was founded by King Charles II in 1676 to furnish seamen with accurate information of the positions of the moon and stars, to assist them in finding their way across the trackless ocean. As astronomy has developed, however, the activities of the Observatory have expanded with it, till to-day the work done in the magnificent establishment to which the original observatory has grown comprises, in addition to the special work for seamen, the study of the sun, measurements of the distances, temperatures and speeds of the stars, and of the movements of double stars, and observations of the oscillations of the poles of the earth and of the changes in the earth's magnetism.

The lecture tells the romance of the development of the Observatory and explains the work done there to-day.



The National Observatory at Greenwich.

6. TIME—ITS FLIGHT, PURSUIT AND CAPTURE.

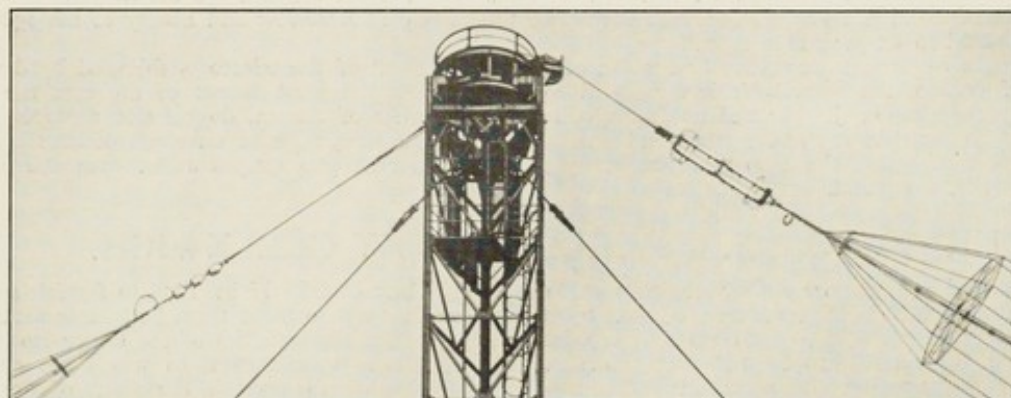
Most of us take the correctness of our public clocks and of the wireless time-signals for granted. But behind the scenes is a most wonderful and complex organisation for giving us the right time. The fundamental clock is the earth itself, turning on its axis, with the stars as figures on the dial. By observations on the stars the standard clocks at the large astronomical observatories are kept exactly right with the earth. Then, at certain times of the day, these clocks send electric currents over special telegraph wires which automatically correct clocks over the whole kingdom, drop time balls and fire time guns, and, at wireless stations, send out signals for all the world to hear. How this is done is fully described in the lecture.

EACH LECTURE IS COMPLETE IN ITSELF, AND IS BEAUTIFULLY ILLUSTRATED.

ACTIVITIES OF SCIENCE—continued.

7. RADIO TELEGRAPHY AND TELEVISION.

Although everybody to-day is interested in wireless broadcasting yet comparatively few people have any idea of the long process of development by which modern wireless telegraphy and telephony have reached their present standard of perfection. In this lecture Mr. ADDEY, who has been professionally connected with wireless telegraphy for nearly thirty years, explains the nature of electric waves, describes the work of the pioneers of the science, and traces its gradual development from the time when messages could be sent over no more than a few hundred yards, to world-wide telegraphy and telephony, the transmission of pictures and television, which are among the astounding achievements of to-day.



Top of one of the 800 ft. high giant Masts at the G.P.O. Station near Rugby, fitted with internal lift for Engineers.

STUDIES IN NATURAL HISTORY : Two Lectures.

8. THE MICROSCOPE AND ITS REVELATIONS.

The telescope reveals to us the wonderful universe of great things and enormous distances. But at the other end of the scale is another not less wonderful universe—the world of little things—which is revealed to us by the microscope. In this lecture we are introduced to the lowly plants and animals by which we are surrounded, some of extraordinary beauty, while others constitute the germs of terrible diseases. The wonderful delicacy of structure revealed by the microscope in the bodies of the higher plants and animals is also described, the whole being illustrated by a series of beautiful slides, most of them actual photographs taken through the microscope.



Water Flea, greatly magnified.

9. THE PINE TREE—A PLANT BIOGRAPHY.

No matter how common a plant may be, there is a world of interest to be obtained by getting really acquainted with it. In this lecture the story is told of the life of this common denizen of our forests, how the tree develops from the seed, how it grows, the contrivances by which it breathes, obtains its food and protects itself from harmful influences, the wonders of the structure of its branches and leaves, and how ultimately it produces seeds to continue its species.

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THE LECTURE LEAGUE, SEAFORTH, LIVERPOOL.

Telegrams and Cables : "Lecturanto, Liverpool," England.