

# ANNIVERSARIES OF SCIENCE

**November 5, 1581.**—Galileo Galilei matriculated at the University of Pisa for the study of medicine. It was there, in that same year, that the swinging lamp started his study of the pendulum.

In 1581, this youth of seventeen stood in the Cathedral of Pisa. Close at hand, a lamp suspended by a long chain swung lazily in the air currents. There was nothing unusual in such a sight. Millions of other eyes had seen other suspended objects going through exactly this motion and had not given the sight a second thought. At this moment, however, a great discovery of far-reaching application . . . hung waiting in the air. Young Galileo took notice. The lamp swung to and fro, to and fro. Sometimes it moved but slightly. Again, as a stronger breeze blew through the great drafty structure, it swung in a considerable arc, but always—and this was the point which impressed itself upon the Italian lad—the swing was accomplished in exactly the same time. . . . In order to make sure of this fact, Galileo is said to have timed the swinging lamp by counting the beating of his pulse.

—Brearley: *Time Telling through the Ages.*

**November 7, 1631.**—First planetary transit ever observed. Pierre Gassendi saw the passage of Mercury across the sun.

Because of the great inclination of the orbit of Mercury, it is seen in a transit across the face of the sun not more than thirteen times in a hundred years. This transit may only be seen in a telescope. If it so happens that it travels across the center of the sun, the journey consumes about eight hours, although the little black dot is skimming across the big, bright disk at the rate of 100,000 miles an hour. The next five transits will occur on November 8, 1927; November 10, 1937, November 12, 1940; May 13, 1953, and November 6, 1960.

—Grondal: *The Music of the Spheres.*

**November 10, 1887.**—The first of Hertz' papers establishing the similarity between light and electric waves was presented before the Berlin Academy of Sciences.

In 1873 Maxwell, who was a prominent physicist, highly trained in the use of mathematical tools, announced that light was an electrical phenomenon and traveled as an electromagnetic wave. He further stated the possibility of there being other electromagnetic waves which would not produce the effect of light but would travel just as light waves travel.

In 1887 Hertz verified this prophecy of Maxwell and announced the discovery of electromagnetic waves. Hertz studied their properties or characteristics. He showed how they could be produced, how they traveled through the walls of buildings and were not affected by obstacles which would completely obstruct the passage of light, and also how they could be detected, since they do not affect the eyes as does light.

—Mills: *The Realities of Modern Science.*

**November 10, 1911.**—J. W. Nicholson communicated to the Royal Astronomical Society his deduction that four bright lines in the spectrum of gaseous nebulae might be due to an element unknown on earth. He named the hypothetical element Nebulium, and thought its atom to be made up of four negative electrons revolving about the nucleus.

The dream of the alchemist was to transmute one element into another, with the prime object of producing gold. Such transmutation has been actually accomplished within the last few years, but the process is invariably one of disintegration—the more complex elements being broken up into simpler constituents. Much remains to be done in this same direction; and here the stars and nebulae, which show the spectra of the elements under a great variety of conditions, should help to point the way. The progressive changes in spectra, from the exclusive indications of the simple elements hydrogen, helium, nitrogen, possibly carbon, and the terrestrially unknown gas nebulium in the gaseous nebulae, to the long list of familiar substances, including several chemical compounds, in the red stars, may prove to be fundamentally significant when adequately studied from the standpoint of the investigator of atomic structure.

—Hale: *The New Heavens.*

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## MEDICINE

### New Leprosy Cure

The oil of a well known Brazilian tree has been found effective in the treatment of leprosy and not as painful for the patient as chaulmoogra oil, which has been used for centuries in leprosy cases in the Orient.

Dr. Antenor Machado, who has made a study of this new product, finds that it resembles chaulmoogra oil in many respects but that its acids have fewer methyl radicals which, he believes, are the chemical groups that have made chaulmoogra oil so dreaded as a medicine. The new oil has been used quite extensively of late in the treatment of leprosy, and the results have been eminently satisfactory, Dr. Machado says.

The tree from which the oil is obtained is known commonly as the sapucainha, and in botanical language as *Carpotrochea brasiliensis*. An extract made from it has long been used as a household remedy for skin diseases.

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His sword and razor were usually buried with the Iron Age warrior in early Europe.

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## AGRICULTURE

### Hog Cholera Epidemic

Serious outbreaks of hog cholera in the corn belt have been reported to the Department of Agriculture since the latter part of September. The epidemic has assumed such proportions throughout the whole central west, that all the field forces of Federal and State veterinarians have been called out to cope with the situation. Every precaution in the way of disinfection and quarantine to offset insufficient supplies of serum is being exercised to hold the epizootic in check.

The economic loss is being felt the most in the sections where the crops have failed due to recent droughts or storms and the farmers are depending in consequence on the proceeds of the sale of porkers to tide them over the winter.

The epidemic in the central west assumed such serious proportions that the U. S. Department of Agriculture issued notice to its inspectors to release preventive serum untested to immunize what hogs have not already succumbed.

Practically all hog cholera serum made in the United States is manufactured under government supervision and is not sent out under normal circumstances until it has been submitted to a period of rigorous testing requiring about three weeks. In the face of the serious epizootic raging in the corn belt this period was shortened to eleven days until the gravity of the situation forced officials in the Bureau of Animal Industry to dispense with the tests altogether in order to save precious time.

The magnitude of the present epidemic which is the worst the country has known in the last 12 or 15 years is attributed by the Department of Agriculture to the low ebb of the disease in recent years. Swine farmers have fallen out of the custom of immunizing their hogs with the preventive serum and since the demand was slight manufacturers have kept only small stocks on hand. The result has been large herds of susceptible animals through which the exceedingly contagious disease has swept.

Scarcity of immune pigs whose blood is a necessary constituent of the much desired serum is one handicap under which manufacturers are laboring. The new regulation, however, will make available at once enough serum to treat approximately 700,000 hogs and will continue effective as long as the emergency is considered to exist.

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