

Anniversaries of Science

November 18, 1883.—Standard time substituted for local time in the United States and Canada.

Under the zone system, the same time is adopted over the whole of the region on the earth comprised between two meridians of longitude . . . the time corresponding to that of the central meridian of the zone. At the boundaries of the zone the time changes abruptly by one hour. . . . Thus the same time is used over a wide area, but this time never differs by more than 30 minutes from local time.

—Jones: *General Astronomy*.

The march of time is so important in human affairs that very great attention has always been given to it. By general consent, the unit of time is the day. Yet here trouble begins. If we should define the day as the time elapsing between the successive instants when the sun stands in the central north and south line of the heavens, which we call the meridian, an accurate clock would soon show that the days so defined are unequal. . . . Despite the inequality of apparent days, as measured by the sun's place in the sky, we must prefer solar time to stellar time because all our concerns are controlled by sunlight. It would be highly inconvenient to have to shift the hours of all business steadily throughout the year to make them suit the sun's position.

—Abbot: *The Earth and the Stars*.

November 20, 1852.—Last appearance of Biela's comet, which had a period of between six and seven years. It seems to have broken up into the Andromid meteors, which have the same orbit and the same period of recurrence that it had.

Biela's comet, discovered February 27, 1826, had a period of between six and seven years. It also was traced back into the eighteenth century. It returned several times, as predicted, but in 1845, after presenting first a pear-shaped form, it divided into two comets which gradually separated, thus perhaps showing in miniature the history of the earth and moon. On the return in 1852 the double form was recognizable, but the companions were over 1,200,000 miles apart. Both vanished shortly after their discovery, and have never been seen since.

—Abbot: *The Earth and the Stars*.

November 24, 1859.—Publication of Darwin's *Origin of Species*. The whole edition of 1,250 copies was exhausted the same day.

I am fully convinced that species are not immutable; but that those belonging to what are called the same genera are lineal descendants of some other and generally extinct species, in the same manner as the acknowledged varieties of any one species are the descendants of that species. Furthermore, I am convinced that Natural Selection has been the most important, but not the exclusive, means of modification. . . .

Whatever the cause may be of each slight difference between the offspring and their parents—and a cause for each must exist—we have reason to believe that it is the

steady accumulation of beneficial differences which has given rise to all the more important modifications of structure in relation to the habits of each species.

—Darwin: *Origin of Species*.

Science News-Letter, November 13, 1926

ASTRONOMY

Two Comets In One Day

Discovery of a new comet the same day as the rediscovery of an old one by the man who originally found it was the astronomical record hung up by European astronomers on Friday, November 5, according to Dr. Harlow Shapley. Dr. Shapley is director of the Harvard College Observatory at Cambridge, Mass., which acts as a clearing house for news of astronomical discoveries.

The new comet was picked up by Dr. J. Comas-Sola, director of the Fabra Observatory at Barcelona, Spain, and, following the usual practice, will become known to astronomers as Comas-Sola's comet. When discovered, early in the morning of Friday, November 5, by Spanish time, and Thursday evening according to American time, it was in the constellation of Cetus, the Whale, which can be seen in the southeastern sky about 9:00 p.m. Its exact position at that time, expressed in the astronomical equivalent of latitude and longitude, was 2 hours 56 minutes 36 seconds right ascension, and 6 degrees 31 minutes north declination. It was moving to the southwest, but as it is of the 12th magnitude, a good sized telescope is now required to see it.

Neujmin's comet was the celestial visitor which returned, and was picked up, also on Friday morning, by Dr. G. Neujmin, at the observatory at Simeis, Russia. Dr. Neujmin originally found this comet on February 24, 1916, and calculated that its orbit would bring it back every five and a half years. On November 16, 1920, he photographed a strange celestial object which is believed to have been his comet, but as sufficient observations to accurately determine its orbit were not obtained, this is not certain.

When rediscovered on this trip, Neujmin's comet was in the constellation of Leo, the Lion, near the handle of the familiar "Sickle," which can now be seen in the eastern sky for a few hours before sunrise. Its position was 10 hours 10 minutes 56 seconds right ascension and 18 degrees 29 minutes north declination. It is even fainter than Comas-Sola's comet, as it was of the 14th magnitude. It is not expected to become very much brighter.

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Memory Rime

The Value of Pi

This is a variation on the memory rime published in the *SCIENCE NEWS-LETTER* (October 9) for remembering the value of Pi to 30 places of decimals. The number of letters in each word is the same as the corresponding digit in the value of Pi:

Sir, I send a rhyme excelling
3 1 4 1 5 9

In sacred truth and rigid spelling
2 6 5 3 5 9

Numerical sprites elucidate
9 7 9

For me, the lesson's dull weight.
3 2 3 8 4 6

If Nature gain,
2 6 4

Not you complain
3 3 8

Tho Dr. Johnson fulminate.
3 2 7 9

—Denham Larrett: *The Story of Mathematics*.

A French sentence for remembering the value to ten places has been suggested by the Rev. F. A. Tondorf, S.J., of Georgetown University:

Que j'aime à faire apprendre le nombre
3 1 4 1 5 9 2 6

utile aux sages.
5 3 5

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MEDICINE

Smallpox This Year

Smallpox had more than its average potent killing power in 18 states and several of the Canadian provinces in the first half of this year. If the same proportion of deaths had occurred throughout the country that prevailed in the single state of Arizona, 7,700 lives would have been lost of the total 20,561 cases that occurred in this country in the six-month period.

From surveys of Metropolitan Life Insurance statistics it is evident that the large numbers of unvaccinated persons both here and in Canada provide ample material for a smallpox situation that may at any time lead to catastrophe. Prevention of the disease by vaccination and revaccination is declared to be of vital importance to both countries.

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The Greek philosopher, Aristotle, taught that the world was composed of four elements—earth, air, fire and water—and that the sun and other heavenly bodies were made of a fifth element more perfect than the substances found in our world.