

Anniversaries of Science

August 18, 1868—Solar prominences studied spectroscopically during an eclipse showed a new line which was given the name "helium" by Lockyer.

The chromosphere is full of marvels. At first, when our knowledge of spectra was very much more restricted than now, almost all the lines observed were unknown. In 1868 I saw a line in the yellow, which I found behaved very much like hydrogen, though I could prove that it was not due to hydrogen; for laboratory use the substance which gave rise to it I called helium.

—Sir Norman Lockyer: *The Chemistry of the Stars*, an address given in 1898. *Science News-Letter*, August 13, 1927

August 19, 1698—Edmund Halley, who computed the orbit of the famous comet, was commissioned captain of the *Paramour Pink*, with which he made a two-years' cruise observing the variations of terrestrial magnetism.

After Halley had made two attempts to establish a working theory respecting the distribution of terrestrial magnetism and the cause of its striking change with the lapse of years—the so-called secular variation—he must have reached the conclusion that the elusive problem of the earth's magnetism would be more profitably advanced by additional facts than by further speculation. That, paraphrasing Seneca, to avoid making a false calculation of matters, it were better to advise with Nature rather than with opinion. Accordingly we find him setting out in October, 1698, in command of a sailing ship, the *Paramour Pink*, and cruising in her under orders from the British Government, back and forth, north and south, in the Atlantic Ocean for two years, observing almost daily, sometimes several times in a day, the angle which the compass needle makes with the true north and south line—the angle known to the man of science as the magnetic declination, to the mariner and surveyor as the "variation of the compass."

—Bauer: *The Earth's Magnetism*, a lecture given in 1913. *Science News-Letter*, August 13, 1927

August 21, 1560—The appearance of a predicted solar eclipse turned Tycho Brahe toward the study of astronomy. He was not quite fourteen years old at the time.

Though it was only a small eclipse at Copenhagen, it attracted the special attention of the youthful student, who had already begun to take some interest in the astrological predictions or horoscopes which in those days formed daily topics of conversation. When he saw the eclipse take place at the predicted time, it struck him as something divine that men could know the motion of the stars so accurately that they could long before foretell their places and relative positions. He therefore lost no time in procuring a copy of the *Ephemerides of Stadius* in order to satisfy his curiosity as to astronomical matters; and not content with the meagre information he could get from this book, he very soon made up his mind to go to the fountain-head, and at the end of November in the same year he invested two Joachims-thaler in a copy of the works of Ptolemy, published at Basle in 1551. This copy is still

in existence, and may be seen in the University Library at Prague.

—Dreyer: *Tycho Brahe*.

Science News-Letter, August 13, 1927

HYGIENE

Thumb Sucking Dangerous

A baby's habit of filling in tiresome waits between meals by sucking his thumb, a pacifier or his cheek, is not so harmless a pastime as mothers generally think. If long continued, these childish habits result in protruding teeth that fail to meet properly for chewing or in other abnormalities of the mouth.

This is one of the important facts made clear in an investigation of dental development by Dr. Samuel J. Lewis and Dr. Ira A. Lehman, of Detroit. Another still more important and more hopeful fact is that if such habits are stopped the child's mouth structures often tend to right themselves and to grow toward normal again.

Until recently, dental surgeons regularly treated irregularities of the teeth and dental arches by fitting mechanical contrivances to the mouth, Dr. Lewis explains. But sometimes after the appliances were removed the teeth reverted to the original abnormalities, and then again, it had been discovered that apparent abnormalities sometimes righted themselves without mechanical interference.

To find out more about the normal growth of the mouth and teeth, the two doctors began to take measurements and make models at regular intervals of 150 children at the Merrill-Palmer Nursery School. This school is one of the well-known centers where normal child growth and development are being studied carefully from many angles.

Three years ago, Dr. Lewis began to make models of the teeth of each child once a year, starting at the age of three, with the idea of continuing for a period of at least ten years. Every six months measurements of the teeth and dental arches are also taken, so that these may be correlated with measurements of the growth of other parts of the body. None of these children has ever worn mechanical dental appliances, for the purpose of the study is to learn about natural growth.

The models so far made show that sucking and biting of finger, thumb, tongue, cheek and pacifiers all affect mouth structure, Dr. Lewis states. In one case, a twin girl, very much undersized, had teeth lacking enamel due to the mother's poor health and defective diet. The baby not only sucked her thumb but nursed from a

bottle at three and a half years of age. Models and measurements showed clearly how the baby's upper teeth protruded and how she could not get her front teeth together. Dr. Lewis told the mother that the baby must give up the thumb-sucking habit and also the bottle, and the mother promised to follow instructions. A year and a half later new models were made and the child's mouth had become normal, without the need of mechanical devices.

An investigation similar to that at the Merrill-Palmer School is being conducted at Teachers' College, in New York, Dr. Lewis states. Other institutions should also collect data on the subject, he believes, because "it is only through the combined efforts of many research workers that we will be able to reap the benefits of this important work."

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METEOROLOGY

Hottest Place On Earth

The days are here when we enjoy just thinking of the coldest spot on earth. That imaginary comfort may be enhanced by a knowledge of the exact time and location of the coldest known temperature. Verkhoyansk, Siberia, just within the Arctic Circle, experienced 90.4 degrees below zero Fahrenheit on January 15, 1885. It was unofficially reported that this same place recently broke the above record with 97.6 degrees below.

However, do not start for Verkhoyanak for your vacation, for the temperature rises to 80 degrees during the two-month summer. Miles City, Mont., holds the low record for the United States with 65 degrees below.

It may help the fellow who must enjoy the sea breeze of an electric fan to know of a hotter spot than his own chair. The Italian meteorological station of Azizia registered 136.4 degrees Fahrenheit in the shade on September 13, 1922. Azizia is in the semi-desert plain of Jefara, northern Africa. The mean annual temperature for this region is 70.8 degrees.

Before Azizia established her hottest day California's similar arid inland plain held the world's record with 134 degrees in the shade. This was at Greenland Ranch on the edge of Death Valley where the thermometer goes higher than 120 degrees every summer. Officials at the weather bureau question Azizia's record because the conditions under which the 136.4 degrees were obtained were not certainly proper.

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