

EVOLUTION OF CALENDAR A ROMANCE OF MAN.

WASHINGTON, Oct. 18.—The evolution of the calendar, from the days when man could count only from day to day, through the time when the lunar month was reckoned as a "year," to the present time of an almost universally used time-counting system, is a romance of the history of man.

Piecing together the few known facts of the calendar's life story, scientists have found different interpretations and uses for well-known facts and remains of early life. For instance, according to Moses B. Cotsworth, writing in a recent publication of the Pan American Union, the well-known Egyptian pyramids were not erected by early monarchs of that realm as monuments to their greatness nor as tombs for their bodies; but were huge sun dials with the aid of which the yearly precession of the equinoxes was discovered and the calendar devised.

The pyramids were constructed by mathematicians and astronomers, Mr. Cotsworth holds. The size, height and slopes of each being determined to aid astronomy. Each of the piles in lower Egypt was built at a different period, until the last was found to be the more nearly perfect for studying the sun and stars on the meridian of Egypt. Not until each was abandoned for a better he claims, was a pyramid given over to the uses of a royal tomb.

The pyramidal form, in conjunction with the obelisk, was devised to cast a shadow of sufficient sharpness to be measured and analyzed day by day. The wonderful Washington monument, at Washington, D. C., which shadow measurements found to be constructed perfectly from base to peak, while following the form of the Egyptian obelisk, is too high, he found to cast a shadow useful for solar measurements. The blending of the sun's rays around the top, at that distance, blurs the shadow. However, he declared, the shadow was used for certain measurements which prove that September 23 and not the 21st is the day of the fall equinox.

The pyramid was the result of the Egyptians' efforts to get a sufficiently long shadow to measure the months and years more accurately, and along its sides the early astronomer gazed to mark the movements of the stars and planets.

Stonehenge, an ancient monolithic ruin in England, attributed to the Druids, was another mechanical means of determining solar and lunar movements, it was said, as was the purpose also of several other similar ancient stone constructions in various parts of the world.

The primary reason for the calendar in early days was the need of knowing when to sow and reap, how to handle cattle and to determine other propitious days. All peoples, it is supposed, used the periods of the moon as their longest time space, but this was varied and unequal through the year. Noah, it was said, adopted the early Egyptian calendar of a five-month year, 30 days to the month and three ten-day weeks, as a better way to ration the tribal supplies.

Bundles of small sticks were the first known means of actually keeping track of the passage of days, and even today some American Indians keep five bundles of 30 sticks, pulling out one stick each day. The last bundle is repeated in each half year to ever things up, and the middle bundle is split in two equal groups to determine the approach of mid-summer and mid-winter days. In the Fiji Islands the "moon stick" was used, on which a notch marked the waning of each moon.

The Hebrews evolved a six month year when Jacob set out stakes from a central position in a line to the horizon to mark where the sun rose and set on the longest, shortest and median day of the year. The extreme ages given to early Bible worthies were attributed to counting "moons" as years and later five and six months as full years.

One of the means used by the early priests, to impress the masses, it was explained, was the secrecy attending the determining of the seasons and years. Sacred rods used to measure the shadows by which the time of years was determined, were jealously guarded, and when, on the set date, the priests measured out on the ground the lengths of the shadows, the ceremony was accompanied by great show.

Today, in Borneo, expert calendar makers among the Dyaks have secret measuring poles. They travel over the country setting up measuring rods and setting in the ground pegs at certain distances by the secret rods. They tell the farmers to plant, cultivate or reap when the pole's shadow touches certain pegs in the middle of the day. At the end of the harvest they return and gather the tithes of the crops which are their fees.

So accurate were the measurements of the early Egyptian astronomers, according to the writer, that they were able to determine to the third decimal point the exact length of the year, which they set at 365.242 days. The famous Egyptian Sphinx is neither a monument nor a tomb, Mr. Cotsworth declares, but was designed and built primarily as another astronomical instrument by which the sunrise and setting points of spring, summer and winter were fixed. That measurement was not so accurate as the observation of the noon day shadow, so was abandoned in favor of the latter.

According to Mr. Cotsworth's theory, the early Egyptians were faced with the need of maintaining and increasing their population to ward off invasion by the Assyrians on the north and the Ethiopians on the south. To do so they had to increase their food supplies. As no more tillable land was available it was up to them to increase the yield of their lands by intensive and careful farming. It was then necessary to know just exactly when to sow and when to reap, and such intensive crops could only be developed by locating the precise points in the seasons.

Precise knowledge depended upon study of the sun, and as the Egyptian

had neither telescope nor sun glass observation of shadows was developed. To have better shadows the pyramid was gradually evolved as a huge sun dial, and the need was fulfilled. Three crops of certain grains are still harvested in Egypt. In Central and South America the Aztecs, Mayas and other early civilizations also devised calendars, such as the Aztec calendar stone now in the museum at Mexico City. Being so much closer to the equator than the Egyptians, the latter's form of pyramid observatory was impossible because an increased angle of slope would be necessary and this was impossible to build then. Their open step pyramids, then, were only capable of determining the year's length to the 365th day and not the fraction of the 366th.

POISONED COFFEE OF HER FATHER-IN-LAW

Mrs. Meda Hodell, 20 Years Old, Charged With Murder Of Her 64-Year-Old Father-in-Law, David Hodell.

WHITE CLOUD, Mich., Oct. 19.—The State was believed today to be near the close of its case against Mrs. Meda Hodell, 20 years old, who is on trial for the alleged murder of her 64-year-old father-in-law, David Hodell. The high point in the prosecution, it was intimated, was reached yesterday with the introduction of a signed statement which state police officers identified as a voluntary confession by the young woman.

The alleged confession relates that Hodell was "sick and miserable" and requested his daughter-in-law to "put him out of the way." "And so I did it," Mrs. Hodell was quoted as saying, "because I thought it better for him and better for us if he were 'over there'."

The statement further says that poison was placed in Hodell's coffee. Mrs. Hodell listened to the reading of the statement without emotion. Her attorneys contend she confessed under duress. Prosecution witnesses have denied the charge.

It developed yesterday that chance remarks by relatives of Mrs. Hodell led to the investigation that resulted in her being charged with the slaying of her father-in-law, as well as her husband, Ronnie Hodell.

Officers were engaged with the mystery surrounding her husband's death, it was said, when one of the defendant's brothers asked a state policeman if his sister had told him "that she poisoned the old man."

The new angle was followed up and developed a stronger case, it was said, than could be made of the death of the younger Hodell. The woman will face a charge of slaying her husband after the present case is disposed of, while her mother, Mrs. Alice Dudgeon, and her brothers, Leo and Herman Dudgeon, are charged with complicity.

HAMPTON ROADS, Va., Oct. 19.—The President's yacht Mayflower today brought the members of the national advisory committee for aeronautics to Langley field for their annual meeting, and will take them back to Washington tonight. The party included Commander Jerome C. Junsaker, in charge of the design section of the naval bureau of aeronautics, who was appointed to membership on the committee several days ago to succeed Rear Admiral D. W. Taylor, former chief instructor of the navy, upon his retirement from active duty.

Others in the party were Dr. Chas. D. Walcott, secretary of the Smithsonian Institution, chairman of the committee; Dr. Samuel W. Stratton, former director of the bureau of standards; Dr. Joseph S. Tmes, of Baltimore, chairman of the executive committee; Major General M. M. Patrick, chief of the army air service; Rear Admiral W. A. Moffett, chief of the naval bureau of aeronautics; Rear Admiral Taylor; Prof. C. P. Marvin, of the Weather Bureau; Dr. John F. Hayford, of Northwestern University; Dr. Michael I. Pupin, of Columbia University; Orville Wright, of Dayton, Ohio; George W. Lewis, executive officer, and J. F. Victory, assistant secretary.

LOS ANGELES, Oct. 19.—A life for a life, it was learned at the district attorney's office today, will be the demand of the state at the trial of Mrs. Clara Phillips for the murder of Mrs. Alberta Tremaine Meadows, 20-year-old widow, which will open in the superior court here tomorrow.

Mrs. Phillips is accused of having beaten Mrs. Meadows to death with a hammer July 12 last, in an isolated part of the city. It is believed here insanity will be the chief basis of the defense. Attorneys for both the state and defense have examined Mrs. Phillips.

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