MEASURING TIME

THE CALENDAR

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There are so many things that we take for granted and the calendar is just one of those things. Have you ever considered what it would be like to live without a calendar? How would we schedule meetings and other important events if we had no calendar or diary? Imagine a time when there was no calendar to consult.

Nature as timekeeper

Even earliest man needed a means of telling time, be it as simple as the difference between night and day.

When the sun rose in the morning, he would leave the shelter of the cave and spend the day hunting and gathering food. When the shadows lengthened, he would know that it was time to return to his cave, safe from the wild animals that hunted in the dark. Sunset brought darkness and it was time to sleep.

As these primitive men gathered together in tribes, a certain level of organisation is implied. Planning ahead required that they had some method for doing so. They looked at the night sky and observed that the moon had the ability to change shape. Sometimes it was a bright orb, at other times just a sliver and at other times not visible at all. These changes were uniform and predictable, repeating the cycle from one new moon to the next new moon. Early man used this predictable cycle of the moon to plan future events.

The changing of the seasons also aided early man to keep track of time. Budding of trees and flowers heralded a time of abundance ahead, while the falling of leaves warned that food would soon become scarce.

History of the calendar

Around 4000 BCE, in the land between the rivers, Tigris and Euphrates, a civilisation had developed. They lived in houses in cities surrounded by high walls. They were deeply religious and identified the gods with the sun, the moon and the stars and worshipped them in their temples.

Their priests studied the movement of the stars. They observed that at certain times the sun appeared to travel northwards and that the days were longer and warmer, while during other months, the sun travelled southwards and the days grew shorter and colder. They identified twelve constellations of stars - the zodiac. The time that it took for the sun to pass from any given point around the heavens to the same point was divided into twelfths. They also noted that it took approximately 30 days for the moon to pass through all its phases. The year was divided into 12 months, each consisting of 30 days. They devised a week consisting of seven days, to coincide with the seven heavenly bodies that they identified with seven great gods. Days and nights were divided into twelve hours each, which in turn were divided into 60 minutes. They came to realise that a 360-day year was five days short and so they corrected this by doubling the month of Adar once in every six years.

The calendar remained unchanged until the time of Julius Caesar, who revised the calendar. The first, third, fifth, seventh, ninth and eleventh months were all given thirty-one days. With the exception of February, the remaining months had thirty days. February would only have thirty days every fourth year. When Emperor Augustus revised the calendar, he decided that his month, August, should be as long as that of July named for Julius Caesar. He 'stole' a day from February and added one to August. He changed September and November to thirty-day months and made October and December thirty-one day months.

This calendar remained in use until the year 1582 CE when Pope Gregory XII changed the calendar, so that the last year of a century should be a leap year only when its number could be divided evenly by 400. The Gregorian calendar is the calendar that we still used today.

But this is not the only calendar in use today.

The Islamic calendar

The Islamic calendar is a purely lunar calendar. It contains twelve months that are based on the motion of the moon and has 354.36 days. Each month starts when the lunar crescent is seen after a new moon. This depends on factors such as the weather and the location of the observer. Some Muslims depend on a local sighting of the moon, while others depend on a sighting by authorities somewhere in the Muslim world.

The Jewish calendar

The Jewish calendar is used for religious purposes by Jews all over the world and is the official calendar of Israel. The calendar is a combined solar/lunar calendar. The years coincide with the tropical year and the months coincide with the synodic months. An ordinary, non-leap year has 353-354-355 days and comprises twelve months. A leap year has 383-384-385 days and comprises 13 months. What is also interesting is that a Jewish day does not begin at midnight, but at sunrise.

The Chinese calendar

The Chinese use the Gregorian calendar for civil purposes, but use the Chinese calendar

for determining festivals. The Chinese calendar is based on exact astronomical observations of the longitude of the sun and the phases of the moon. It has some similarities to that of the Jewish calendar - an ordinary year has 12 months, while a leap year has 13 months. Unlike other calendars, the Chinese do not count years in an infinite sequence, instead, years have names that are repeated every 60 years. The Chinese lunar calendar names each of the twelve years after an animal. For example, 2006 is the year of the dog.

From what we have read above, one could be forgiven for thinking that the introduction and development of the calendar was limited to the Middle East and Europe. This is not the case.

The Aztec calendar

Across the vast Atlantic Ocean, the Aztecs and Maya also developed their own calendar. In 1760 the Sun Stone (Aztec calendar) was discovered buried in the main square of Mexico City. Weighing close to 25 tons, with a diameter of 12 feet and three feet thick, the stone has both mythological and astronomical significance.

The Aztec calendar recorded two different aspects of time:

The tonalpohualli (counting of days)
Arranged in a 260-day cycle, the tonalpohualli was used by the priests to determine lucky days for the sowing of crops, building houses and going to war.

The xiuhpohualli (counting of years)
Used a 365-day solar count. It was divided into 18 periods, each containing 20 days. There were five days that were not counted. These were the transition days between the old and the New Year. This was a time of festivals and was when the priests would perform sacrifices, including human sacrifices.

Every 52 years the tonalpohualli and xiuhpohualli calendars would align. This was known as a Mesoamerican century and was celebrated with a 12-day festival. All lights and fires were extinguished at the beginning of the festival. At midnight on the 12th night, a human sacrifice was made and the fires and lamps would be lit.

The Mayan calendar

The Maya developed a sophisticated calendar. Three different calendar systems were used, known as the tzolkin (sacred calendar), the haab (civil calendar) and the long count system.

The tzolkin has a 260-day cycle and the haab has a cycle of 365 days. Combined, these produced a cycle of 18 980 days, which was known as the calendar round.

Speciality calendars

Calendars are often used by organisations to draw attention to the work they do. Some of our favourite cartoon strip characters show up on their own calendars. Then again there are calendars, which have become collector's items, such as the Pirelli calendars, or the 1952 and 1953 Marilyn Monroe calendars.

The Moments in Time Project calendar
The calendar uses images and prose to portray South African cancer patients, from various backgrounds, each afflicted with one or other type of cancer. The calendar is used to foster awareness and to raise funds. The funds raised from the sale of the 2007 calendar will be used to assist needy cancer patients.

Calendar Girls - Rylstone and District Women's Institute
In 1999, women of the Rylstone and District Women's Institute decided to pose nude for their annual calendar to raise money to help fight leukaemia. The models ranged in age from 45 to 65. Terry Logan, the husband of Lynda Logan, one of the Women's Institute members, took the photographs for the calendar.

Madam and Eve calendar
The Madam & Eve web site displays a calendar page each month, which can be downloaded and used as your desktop.

Anne Geddes calendar
I had to include this one. There are so many people who just love the photographs taken by Anne Geddes. She will be offering two distinct calendar themes for 2007. You can try your local bookshop or try ordering online from *www.amazon.com*.

Advent calendars
Christmas is just around the corner and you might want to put up an Advent calendar for the kids.

The first Advent calendar can be traced back to the nineteenth century. Today's Advent calendar usually has little windows that can be opened. Enclosed is either a picture or sometimes little charms or chocolates.

There is so much to read about calendars on the Web. I have listed just a few of the web sites, which I found interesting.

Warning: Please be aware that the Marilyn Monroe and Pirelli sites contain nude studies.

Web sites

www.12x30.net/linked.html

www.infoplease.com/ipa/A0002061.html

http://webexhibits.org/calendars/year.html

www.digi-labs/calendars.htm

www.new-year.co.uk/chinese/calendar.htm

www.ndl.go.jp/koyomi/e/history/02_index1.html

www.world-mysteries.com/sar_3.htm

www.theosophy-nw.org/theosnw/world/america/am-arana.htm

www.momentsintime.co.za

www.chasingthefrog.com/reelfaces/calendargirls.php

www.sellmer-verlag.de/history.htm

www.smmp.com/Advent/Advent.htm

http://en.wikipedia.org/wiki/Advent_calendar

www.marilynfineart.com/calendars.html

www.pirellical.com/thecal/pop_welcome_en.html

www.madamandeve.co.za

www.amazon.com (Search = Anne Geddes calendar)

www.andrea-schroeder.com/AGeddes63.html