

and twenty-nine days. Three months were intercalated every eight, or seven every nineteen years.

The month was divided into three decades. Their day began at sunset, like other nations such as the Jews and Mahometans, whose division of time was governed by the revolution of the moon. Until the year B. C. 45, the Roman mode of computing time was very unsettled, and imperfect. In the year B. C. 45, Julius Cæsar established a settled method of computation by the adoption of the solar year, with an intercalary day once in four years. The Roman month was divided into three portions, the Calends, the Nones, and the Ides. They reckoned also by weeks of eight days. The Roman day began at sunrise (and was of variable length,) but afterwards at midnight.

The Christians availed themselves of the Julian calendar, but at the same time borrowed from the Jews the division of the year into weeks, and named their days after the saints. The council of Nicæa decided that the feast of Easter should fall always on the first Sunday after the full moon, following the spring equinox. In the middle ages, the beginning of the year varied in different nations, some reckoning from the 1st of January, others from the 1st of March, the Annunciation of the Blessed virgin, Easter, Christmas, &c., nor was it until the end of the 17th century, that the 1st of January was adopted (by an ordinance of Pope Innocent XII) as the invariable commencement. The Julian calendar, according to which every year had an excess of 11, 14, 30, was amended by Gregory XIII; ten days (the aggregate amount of the excess) being left out in the year 1582, an arrangement by which the 15th of October was made immediately to follow the 4th, it being settled that in future three days should be left out in every 400 years. His Gregorian calendar was gradually adopted by the Protestants in the 18th century; but the Russians and Greeks still reckon their time according to the Julian, which now numbers twelve days less than our amended calendar.

The Mahomedans alone reckon their time exclusively by the moon, and have an intercalary day eleven times in thirty years. They reckon the day from sunset. Their week contains seven days.

The Republican calendar of the French may be compared to a meteor, which shines for a short time and then disap-

pears. Their year began on the 22nd September, and had twelve months of thirty days, the names of which were intended to indicate the various phases of nature. These names were, Vendémiaire, Brumaire, Frimaire Nivose, Ventose, Pluviose, Germinal, Florial, Prarial, Messidor, Themidor, Fructidor. There were also five, and in leap-year six supplementary days. The months were subdivided into three decades, the days of which were distinguished by numerals and contained ten hours of 100 minutes each.

LIGHTNING RODS.

Sometimes lightning, instead of passing from cloud to cloud, discharges itself into the earth, and then strikes objects that comes in its route, as houses, trees, animals, and sometimes man. As electricity always selects in its passage, the best conductors, Dr. Franklin first suggested the idea of protecting houses by means of lightning rods. If these are properly constructed the lightning will always take its passage through them in preference to any part of the house, and thus they will afford complete protection to the family. There are three or four conditions in the construction of a lightning rod which are essential to insure complete protection. The rod must not be less than three-fourths of an inch in diameter—it must be continuous throughout, and not interrupted by loose joints—it must terminate above in one or more sharp points of some metal, as silver, or gold, or platinum, not liable to rust—it must enter the ground to the depth of permanent moisture, which will be different in different soils, but usually not less than six feet. A rod thus constructed will generally protect a space * * * every way from it of thirty feet.

It is usually best to apply the rod to the chimney of the house; or if there are several chimnies, it is best to select one as central as possible. The kitchen chimney, being usually the only one in which fires are maintained during the season of thunder storms, requires to be specially protected, since a column of smoke rising from a chimney is apt to determine the course of the lightning in that direction. If therefore the lightning rod is attached to some other chimney of the house, either a branch should proceed from it up the kitchen chimney, or this should have a separate rod. As lightning, in its passage from a cloud to the earth, selects tall pointed objects, it often strikes trees, and it is therefore, never safe to take shelter under trees during a thunder storm. Persons struck down by lightning are sometimes recovered by dashing on them repeated buckets of water.—*Professor Olmsted.*

Perfect virtue is to do unwitnessed what we should be capable of doing before the whole world.—*La Roche-foucauld.*

GEMS OF WISDOM.—Few men are so utterly reprobate, so imbruted by their vices, as not to have some lucid, or at least quiet and sober intervals; and in such moments few can stand up unshaken against the appeal to their own experience,—what have been the wages of sin? What has the devil done for you? What sort of master have you found him? Then let us, in besetting detail, and by a series of questions that ask not loud, and are secure against any false answer, urge home the proof of the position, that to be vicious is to be wretched; adding the fearful corollary, that if even in the body vice is found to be misery, what must it not be in the world to come?—where nothing of vice remains but its guilt and misery.—*Coleridge.*

There is a vast value in genuine biography. It is good to have real views of what life is, and what Christian life may be. It is good to familiarize ourselves with the history of those whom God has pronounced the salt of the earth. We cannot help contracting good from such associations. How a human spirit contrived to get its life accomplished in this confused world—what a man like us, and yet no common man, felt, did, suffered—how he fought, and how he conquered,—if we could only get a clear possession and firm grasp of that, we should have got almost all that is worth having in truth, with the technicalities stripped off, for what is the use of truth, except to teach man how to live?—*Robertson.*

MATHEMATICAL CORNER.

The questions asked in this corner will be answered in the next issue of the *Educationalist*.

1st. State the proportion according to which the degrees of Longitude decrease.

2nd. How do you find the difference of latitude, departure, course, and distance, with compound or traverse courses?

3rd. How do you construct a chart for any part of the globe, on Mercator's projection?

4th. How many cases are there in spherical trigonometry?

5th. State Lord Napier's five circular parts by which the sixteen cases in right-angled spherical trigonometry are performed.

6th. How far can a sailor see, standing at the top mast of a ship, 144 feet high.

7th. What is the present value of an annuity of £65, during the joint lives and life of the survivor, of a man aged 45, and his wife aged 35.

The above questions are not speculative, but such as occur in the transactions of every day.