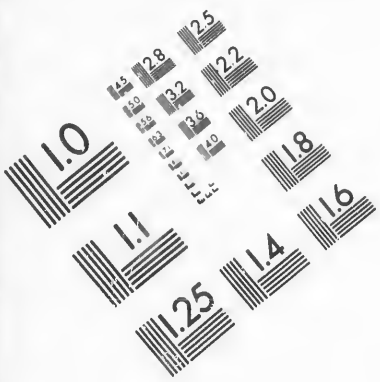

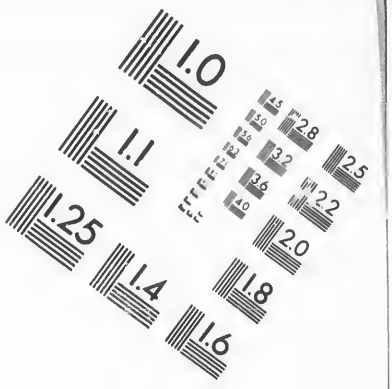

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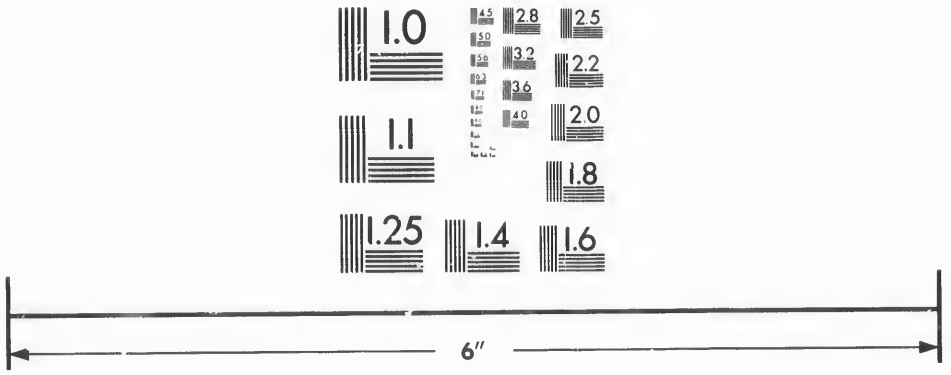

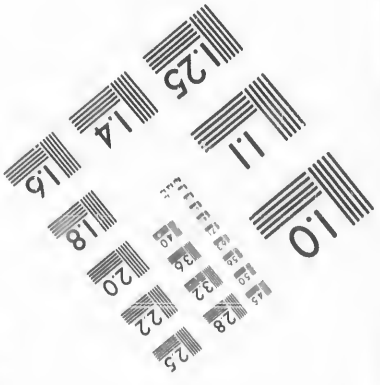

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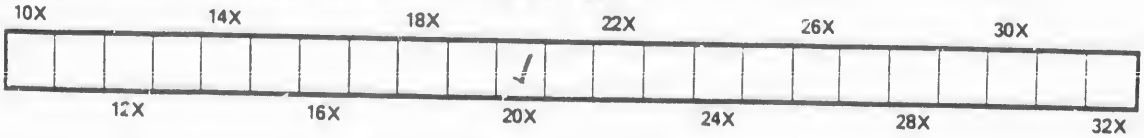

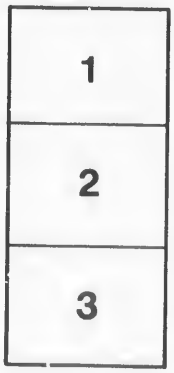

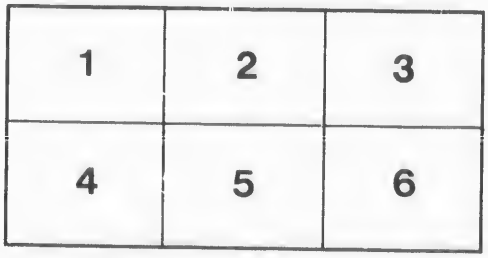

THE REFORMATION

AND

SIMPLIFICATION OF THE CALENDAR

BY DR. A. D. WATSON.

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The Reformation and Simplification of the Calendar.

BY DR. A. D. WATSON.

The calendar as a register of time divisions and periods is more or less conveniently adjusted to synchronize with certain regularly recurring natural phenomena, dependent upon the relations of our Earth to the other celestial bodies. Our own calendar, in particular, is the result of an effort to adjust the various divisions of the civil year to an exact relation with the natural or solar year. The methods which have been adopted by the different nations of the ancient and modern world are very numerous and interesting. As this paper is intended to be practical, no systematic reference will be made to calendars other than our own, excepting for the better understanding of the subject in its bearing on the system of time divisions now in use in our own and other civilized lands. The calendars of our own times are not the product of an exact scientific method. They are rather the latest, we trust it is not the final stage, in the evolution of a practical method by which time periods are adjusted and registered. While the imperfections of our present calendar render further changes necessary, the reformations of the past encourage us to hope that such improvements will be made as will enable us to enjoy the use of a perfected system.

The diversity of calendars now in use is largely of religious origin, depending upon the varying degrees of significance attached to the changes of the Moon. The Mohammedan calendar will serve to illustrate the purely lunar year, which in this case contains 12 months invariably, but as one lunation occurs in 29·5305868055 days, the months are alternately of 29 and 30 days' duration, and to each of 11 in every period of 30 years, one day is added, in order to include the time by which one lunation exceeds 29·5 days. The year is thus purely lunar, and consists ordinarily of 354 days, consequently the beginning of the year, traverses all the seasons in about 32·5 years.

The modern Jewish calendar is luni-solar, for while the months and years are lunar, the number of months in the year is varied so as to make the average year solar. Thus in every Metonic Cycle, which consists of 19 years or 235 lunations, 7 years are made embolismic, the month VeAdar, or second Adar being added at the middle of the year, which with them begins in the autumn. The Jews have also a device for arranging the time for the occurrence of their religious festivals, by adding a day occasionally to their second month, just as we do in leap years. In other years they subtract a day from their third month for the same purpose. Their ordinary year consists, therefore, of 354 days, and their embolismic year of 384 days, but either of these may be increased or diminished by one day. Our own system affords an example of a purely solar calendar. In it the lunar phenomena are entirely ignored as agents for determining the duration and composition of the year.

The Roman calendar is that which forms the basis of our own, indeed many of the peculiarities of our calendar, can be understood only in the light which a study of the Roman calendar affords. Although most of the evils which mar the calendar now in use are chargeable to the Romans, we are happy in having discarded their system of naming the days of the months, for we are thereby relieved of the clumsy method of numbering the days backwards from the Nones, Ides and Calends.

The history of the Roman calendar begins with Romulus, under whom the Roman year consisted of ten months, which were named Martius, Aprilis, Maius, Junius, Quintilis, Sextilis, September, October, November and December. The months of the Roman calendar have never since been so conveniently named, for this approximately ordinal method was corrupted in the very next reign, when Januarius was added at the beginning of the year and Februarius at its close. Although the numbers of the months hitherto used became inapplicable to them without a readjustment, they were nevertheless retained, and are mostly in use in our own times. In the calendar of Romulus the year consisted of 304 days, Martius, Maius, Quintilis and October having 31 days each, and each of the other months 30 days. It is said that days were introduced without names in order to complete the solar year. Numa's reformation has been already referred to, and consisted of the introduction of two new months, one at the commencement the other at the

close of the year. Februarius remained the last month of the year until 452 B.C., when it was changed to its present position by the Decemviri. The year in Numa's calendar at first consisted of 12 months of 29 and 30 days alternately, corresponding nearly with 12 lunations, but the year thus constituted contained 354 days, and as even numbers were considered unpropitious, another day was added to make the number odd. A further change was made in the same reign by introducing an extra month of 22 and 23 days alternately, into every second year. This 13th month was intercalated between the 23rd and 24th of Februarius, the last month of the year. This change made the year approximately solar, as it now averaged 366¼ days. A little later, when advancing knowledge proved such a year to be too long, the intercalary month was omitted in every 24th year, after which the average civil year corresponded very nearly with the solar. This clumsy system was thrown into confusion in the succeeding centuries by the intrigues of priests and politicians, and excepting the change in the position of Februarius, enacted by the Decemviri, there appears to have been no serious reforming movement until the very last days of the Republic. But the corruptions of the calendar could not escape the eagle eye of the great Julian reformer. Calling to his aid the astronomer Sosigenes, he proceeded first to correct the errors of the past, and then to provide as far as possible against their recurrence. The former of these tasks required heroic treatment. So great had been the departure from Numa's methods, that it was necessary, in order to restore the vernal equinox to its position as fixed by Numa, to add two months to the year 707, A.U.C., which was the 47th before the Christian era. The year thus lengthened contained 15 months, or 455 days, and is known as "the last year of confusion." The average year was thenceforth to be maintained at 365¼ days by giving the odd months, *i.e.*, the 1st, 3rd, 5th, 7th, 9th and 11th, 31 days each, and the others, excepting Februarius, 30 each. Februarius was to contain 29 days, excepting every 4th year, when it had 30 days. The extra day was inserted by repeating the sexto-calendas or 25th day of Februarius, which thus became a bissextile month and made the year bissextile. The first interference with the Julian calendar occurred under the first Emperor Augustus. Quintilis had been named Julius after the great Triumvir, Sextilis was, therefore, changed to Augustus in honour of his colleague and successor. But Julius being seventh and Augustus eighth, the month of Julius had one day

more than that of Augustus, in accordance with the method of Julius Cæsar already referred to. This was not to be tolerated by the dignity of Augustus, therefore, Februarius was once more depleted of a day to be added to the month which bore the Augustan name. This change moved the sexto-calendas back in Februarius to the 24th, and brought three months of 31 days each into one quarter. The latter of these results was partially remedied by taking the 31st day from September and November and adding it to October and December. Thus was the length of the months arranged in a manner which, though extremely inconvenient and irregular, has prevailed ever since. It is necessary only to mention the more recent reformation by Gregory; how the Julian year being about $11\frac{1}{4}$ minutes longer than the true solar year, civil time began to lag behind the Sun; how Gregory in 1582 resolved to omit 10 days from October of that year and thus overtake solar time; how he directed that thenceforth three leap year days were to be omitted from every four centuries; how the countries of Europe, one after another, adopted the new style (England only in 1752, when January 1st was restored as the beginning of the year instead of March 25th), till now only Russia and Greece maintain the Julian calendar. The Gregorian calendar year is only 26 seconds longer than the solar year. Such a disparity will amount to only one day in over 3,323 years, therefore, if the year 3,324 (when the divergence will amount to about half a day), were made a common instead of a leap year, and the same rule were adopted with all multiples of that year, the divergence thereafter would never amount to much more than half a day. Such a method would maintain an almost perfect harmony between the civil and solar years, for all future time.

It is a matter of dispute as to whether the reformation of Gregory was productive of any advantages commensurate with the great inconveniences which have followed its adoption in such irregular fashion by the different states of Europe. However this may be, it seems a pity that while so much effort has been made to harmonize the civil with the solar year, so little attention has been given to the adjustment of the various subdivisions of the civil year upon any convenient or rational basis.

A more recent effort to reform the calendar was made by the first French Republic. The reform was, however, more interesting than meritorious, having little of originality but much of change from the

system which it was intended to replace. The day was divided by a decimal system, similar to that which is said to have been used in China 2,000 years ago. The year was divided into 12 months of 30 days each after the method of the ancient Egyptians, five supplementary days being added to complete the ordinary year. A 366th day was added to the year "whenever the position of the equinoxes required it." The month was divided into three periods of 10 days each, and the tenth day was set apart for rest. A period of four years was adopted and called a Franciad, corresponding with the Greek Olympiad. Most of these changes appear to have been due to a spirit of revolt against existing institutions, rather than to any true desire for reform. This calendar perished with the first Republic.

Whereas the day and year are clearly based on the motions of the Earth, the month doubtless had its origin in the Moon's changes, for we find that in almost all countries 29 or 30 days were made either singly or alternately the length of the month, and this corresponds very nearly with 29·530586805 days, which is the average period of one synodic lunar revolution. But while the day, the month, and the year, are the only time divisions which have any astronomical significance, the week of seven days cannot be ignored in any calendar adapted to modern use. Such a period has its sanction in a far higher realm than that of astronomical motions, namely, its convenience and usefulness to humanity. Not only the Sabbath but the whole week has apparently been "made for man."

Many theories have been advanced to explain the origin of the week. It is claimed by some that it derived its origin from the fact that it is approximately one-fourth of the period occupied by one lunation. This is doubtful, especially as there has never been any attempt made to vary the length of the several weeks of a month, by intercalation or otherwise, in order to make four weeks exactly correspond with one month, a result which could have been accomplished with far greater advantage than many so-called reforms have secured by a greater expenditure of ingenuity and with equally important disadvantages. Others are convinced that the week is accounted for by a series of facts in connection with ancient Astronomy and Astrology. The facts are these: There were seven so-called planets known to the ancients. These were named in the old Egyptian papyri in the follow-

ing order:—Saturn, Jupiter, Mars, the Sun, Venus, Mercury, the Moon. The day was divided into 24 hours, each of which was consecrated to a particular planet. Each day received the name of that planet which presided over its first hour, thus, if the first hour was consecrated to Saturn, that day was called Saturn's day (Saturday); then, as the hours were devoted to the planets in their respective order, the 8th, 15th and 22nd hours were, like the 1st, under the protection of Saturn. It follows that the 23rd and 24th hours would on Saturn's day be devoted to Jupiter and Mars respectively, and consequently the 1st hour of the following day would be under the protection of the Sun, and was, therefore, named Sunday; similarly, the Moon's day followed (Monday), then Mars' day (French Mardi), then Mercury's day (Fr. Mercredi),

A very numerous class of persons maintain that we have the true origin of the week accounted for in the writings attributed to Moses. These as a rule will accept no substitute theory or any additional light, as they regard the record in Genesis as complete and satisfactory. It is, perhaps, not a sufficiently practical theme to warrant any contention.

The order of days in the Roman week follows that of the Egyptians, but the 1st day is Sunday instead of Saturday. It is said that the beginning of the week was changed to Sunday by the Hebrews, because of their abomination of everything Egyptian. However this may be, we know that Saturday was the holy day of the Hebrews, though accounted by them the 7th day of the week. Modern nations generally follow the Hebrews in reckoning Sunday the 1st day of the week. As to the names of the days, the Roman countries use the Egyptian and Roman titles; the Teutonic nations have discarded most of the planetary names, while the Hebrews still designate the days of the week by number. Concerning the divisions of the day it may be added, that Hipparchus reckoned them from midnight to midnight, but Ptolemy from noon to noon, and unfortunately modern astronomers have followed Ptolemy. In the civil calendar of modern Europe the day commences and ends at midnight, and thus is avoided the necessity of using double dates for events which occur between sunrise and sunset.

In constructing the calendar *de novo*, it would be observed, that the week has an exact measure in the day, being arbitrarily composed of an integral number of days; but of the day, the lunar month, and the solar year, the only time divisions which have any astronomical sanction, not one of them has any integral relation to either of the others. It follows,

therefore, that without the adoption of the device of intercalation, no practical calendar can be constructed. The objects to be sought are the maximum of uniformity, symmetry and convenience. Our calendar is perhaps in no point so conspicuous as in the absence of all these qualities; besides, it gives no substantial advantages to offset the great irregularities which have been so gratuitously introduced. Of the time divisions just named, the day is already adjusted to all the others, and may, therefore, for the present be dismissed, excepting as a constituent of the other time divisions. The week has never been adjusted either to the month or to the year or its quarters. The month has been adjusted to the year, but in a most unsatisfactory manner, the months varying at present from 28 to 31 days in duration. It therefore appears that inasmuch as the day and the year are invariable and are already arranged by the Gregorian calendar, the week and the month only remain to be adjusted. But we have already concluded that the week must not be disturbed, hence any important change is precluded in any time division other than the month. It is very fortunate that this is the case, for the month has its origin in the phenomena of the night, and the Moon may be ignored far more conveniently than the Sun.

It is very clear that a Gregorian year cannot be secured without intercalation, we must, therefore, be prepared to accept the inevitable. At the same time we must secure what uniformity we can with the least possible inconvenience. It may be accepted as a principle that no change must be made unless it is warranted by clearly preponderating advantages.

Let us first examine the ordinary year of 365 days. We find the only measures of 365 to be 5 and 73, and therefore it is clearly a very inconvenient number of days to deal with, for a week of 5 days, or a month of 73 days which does not consist of a whole number of weeks, is out of the question. Let us lay aside another day with our Leap Year Day to be dealt with hereafter. We have 364 days left. Now the measures of 364 are 2, 4, 7, 13, 14, 28, 52, 91 and 182. Taking these factors into consideration and neglecting the smaller measures, we find that 28 is divisible by 2, 4, 7 and 14; 52 is divisible by 2, 4, 13 and 26; 91 is divisible by 7 and 13. The year of 364 days is, therefore, divisible into 2 half years or 4 quarters, or 13 months or 52 weeks, each of these quarters being exactly divisible into 13 weeks, and each month containing exactly four weeks. Such a year involves a change

in the length and number of the months, and the quarters are equalized and contain exactly 91 days each, instead of varying as at present from 90 to 92 days. There appears to be no valid objection to a month of 28 days. We do not adhere to any lunar period in our present calendar, besides the period of an actual lunar revolution about the Earth is 27·32166 days, and the month of 28 days does not greatly differ from such a period. It is admitted that such a consideration is of no practical advantage, but is stated in order to show that a month of 28 days has at least no disadvantages when compared with our present month period. Moreover, when we remember that 29½ days is the approximate period of a synodic lunar revolution, and is as much less than 31 days as it is greater than 28, we find that a month of 28 days has more astronomical sanction than one of 31 days. Besides we have already one month of 28 days, and if the months were all uniformly of that length, there would then be a constant relation between the length of the month and the period of the Moon's changes, and this would certainly be a decided advantage, though perhaps not a sufficient one of itself to warrant such a change as we propose. We shall, however, be able to point to far greater advantages as we proceed. Every observer has noted the convenience of finding that at the close of February in every common year the days of the week are not disturbed in their relation to the days of the month; thus, if February 1st fall on Sunday, then March 1st will also occur on that day; if February 28th fall on Saturday, March 28th will be Saturday also. Even so much is very convenient, but if we can introduce our 365th and in leap years our 366th day, which we have thus far ignored, into the year, in such a way as not to disturb the symmetry of its parts, the convenience of the present February-March arrangement will prevail throughout the whole year. Nothing is simpler than the accomplishment of such a condition. At present the beginning of the year traverses the whole week in 6 years, likewise the beginnings of successive months traverse the week with the utmost irregularity, owing to the various lengths of the different months. It follows that it is almost impossible to know on what week-day any future date will fall, excepting by labourious calculation or by reference to a printed calendar. Now we have found that omitting one day from the ordinary year the 364 days that remain are divisible into exactly 52 weeks of seven days each, into 13 months of 28 days, or 4 weeks each, and also into 4 quarters of 91 days, or 13 weeks each. We should thus have a year

symmetrical in every part, but how shall we introduce the remaining day without destroying the symmetry of the other subdivisions of the year, for this extra day and also Leap Year Day must have a place in the calendar and in the year? The problem is solved easily enough, for it is not necessary or desirable to introduce this extra-symmetrical day into any of the other subdivisions of the year. All the requisite conditions may be met by making this extra day the 1st day of the year and calling it simply New Year's Day, keeping it as a holiday, and making the following day, Sunday, the 1st day of the 1st month, the 2nd day of the year. The 366th or Leap Year Day might be appropriately and symmetrically added at the close of the year, excluded like New Year's Day, from the week, the month, and the quarter, and named simply Leap Year Day. It would thus immediately precede New Year's Day and would follow Saturday 28th of 13th month. The following draught of the calendar, reformed and simplified as herein proposed, would serve to illustrate clearly the description here given :—

New Year's Day, 1st day of the year (1st day of the 1st month being the 2nd day of the year).

Month	S	M	T	W	T	F	S
	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
I	15	16	17	18	19	20	21
	22	23	24	25	26	27	28

* * * * * * * * * * * * * *

(Here follow the months 2 to 12, but being uniform they are omitted without loss of clearness).

Month	S	M	T	W	T	F	S
	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
13	15	16	17	18	19	20	21
	22	23	24	25	26	27	28

Leap Year Day—in leap years only, last day in the year.

I am aware that a year of 13 months has been suggested before, but the disposition which I have made of New Year's Day and Leap Year Day removes every objection which has hitherto been urged against such a change and gives a quarter of exactly 13 weeks.

Leap Year Day might also be made a holiday with very happy results, as it would occur like New Year's Day in the holiday season, and, being

placed at the end of the year, the half years would each contain an equal number of days even when these extra days are included. Thus, in leap years, New Year's Day and Leap Year Day would be symmetrical, though not included in other subdivisions of the year, and each half year would contain 183 days, whereas in the present leap year the first half of the year contains 182 and the other half 184 days. In common years the first half has only 181 and the second 184 days.

The change suggested could be made most conveniently when the beginning of the year in our calendar falls on Saturday. This would occur in the years 1898 and 1910. Saturday, January 1st, 1898, would be named New Year's Day, 1898, without any disturbance of our present usage, and Sunday, January 2nd, would become 1st of 1st month, 1898. December 31st would be 28th of 13th month, 1898. In 1904, our next leap year, Saturday 28th of 13th month, would be followed by Leap Year Day, 1904, then by New Year's Day and 1st of 1st month, 1905. The introduction of an additional month would involve no serious disturbance which would not be outweighed by many advantages. The tendency in these days is to number the months, and this tendency should be fostered, not only because that method requires less writing, as it certainly does, but because it is much more convenient and in harmony with modern methods. Although the mythic names now in use are supposed by some to have some strange poetic or sentimental fascination, the new method suggested has already been adopted with fine effect in the world of poetry. If the old names should for a time be retained, either alone or with the numbers, as designations of the months, then the new month should be regarded as being introduced between June and July, for in such a position it would displace the other names more symmetrically than if it were introduced in any other part of the year. This shortening the winter months and increasing the number of months in warm weather would make the summer appear longer and the winter shorter. This effect would, I admit, have only the value of an appearance, but that is sometimes considerable. The new month would in such a case need a name, and though that is a very unimportant matter, the Saxon peoples might appropriately term it *Rosemonth*, as that name would be appropriate to the season. But the system by which the months are numbered is vastly more convenient and desirable, and violates none of the canons of present popular usage, besides, all computations of time involving more than one month would by its adoption be reduced to simplicity itself.

In carefully reviewing the proposed system it will be seen that it makes a week instead of a day the unit of the calendar, and consequently the unit of civil time. The result is that all the chief divisions of the year have the week as an exact measure, begin with its first day and end with its close. The fact that the month is not an exact measure of the quarter is of no moment, as in business the quarter is seldom named without stating the number of weeks involved. The week being without any other sanction than that of its adaptation to human interests, is very appropriately named the unit of civil time, and should therefore be the chief measure of all the prominent divisions of the year.

In estimating the favorable and unfavorable features of the reform proposed in this paper, we notice among the

ADVANTAGES.

(1) The convenience of having months of equal lengths. To have every month end on the 28th day as certainly as it begins on the 1st is a reform the value of which is clear without any comment. (2) There is likewise an advantage in having the month, the quarter, and the half year, consist invariably of a uniform number of weeks, the quarter consisting, as proposed, of 13 weeks instead of varying as at present from 12 weeks and 6 days, to 13 weeks and 1 day. (3) The symmetry which is given to every division of the year and which is perfected in leap years, when Leap Year Day at the close of the year balances New Year's Day at its commencement. (4) The week, the month, the quarter, and the half year, all commence with the first day of the week. The advantage of such a feature will be more readily suggested by contrasting the present year 1896 of our present calendar, in which the months begin in order on the following days:—January on Wednesday; February on Saturday; March on Sunday; April on Wednesday; May on Friday; June on Monday; July on Wednesday; August on Saturday; September on Tuesday; October on Thursday; November on Sunday, and December on Tuesday. In the proposed simplified calendar Sunday would replace all the others for this and every year as the initial day of the month. (5) Each particular day of the week would occur constantly upon the same days of the month, and this is true of all days and months, and in consequence of the disposition made of New Year's Day and Leap Year Day, it is likewise true of all years, the week not being displaced at the

end of the year. Thus Sunday would fall on the 1st, 8th, 15th and 22nd of every month, and similarly with every other day. And this is true in every month and in every year. (6) If any date be mentioned, whether past, present or future, the day of the week on which it would fall would be immediately known, without any calculation and without referring to a printed calendar, as each particular day of the week would soon associate itself inseparably with its coincident month dates. Thus Sunday, with the dates 1st, 8th, 15th and 22nd; Friday, with 6th, 13th, 20th and 27th. If the days of the week were also numbered as they were by the ancient Hebrews, then the numbers of the days in the first week of each month would always indicate the day of the month. It is doubtful, however, whether this change would be generally approved. (7) It would be almost impossible to forget either the day of the week or of the month, for one of them would in almost all cases be known, and would immediately suggest the other. Thus, if it be known that the day is Monday, then the date must be either the 2nd, 9th, 16th or 23rd, and the question as to which of these days would be settled, for we never get so much as seven days out in our reckoning. (8) Printed calendars would henceforth be ornamental, never necessary. (9) Dominical letters could be dispensed with, as they have no relation to a year whose week-day is constant. (10) The solar cycle would also be of no further use, for, like the Dominical letter, it has no possible relation to a year of which the second day is always Sunday. (11) The system of epacts would be greatly simplified, for the changes of the Moon would vary constantly throughout the year, instead of irregularly, as at present. New Moon would occur a day and a half later in every month than in the month immediately preceding. Thus, in the year 1900 new Moon would occur on or about the 1st day of the year, the golden number of that year being 1. Then, after the lapse of 10 or 13 months of the proposed calendar, the new Moon would appear on or near the 15th day of the month and similarly for other months; for if it be remembered in any year, on what day of the first month of that year the new Moon appeared, it may be immediately known when it would occur in any succeeding month, especially when the months are numbered. (12) The convenience of computation would be greatly enhanced in all processes which involve the element of time, the ease with which the lapse of days may be computed being self-evident; thus, if it be desired to know how many days elapse from the 13th of 3rd month to the 26th of 10th

month, the problem at once takes shape as follows: $7x28+13$. By our present method, the problem would take the following form. How many days from the 11th of March to the 6th of October? A comparison of the work involved shows how great a saving of time would be effected. All financial offices would thus be relieved of much drudgery in the computation of rents, interest, discounts, etc.; indeed, no intelligent person of all Earth's millions could fail to reap the happy results of such a change in the very first year of its universal adoption. (13) It would, perhaps, not be one of the least advantages of the proposed simplification that the lines so well known to all as a relief in times of doubt and perplexity, which run as follows—

"Thirty days hath September,
April, June and November," etc.,

would cease to be one of the chief of English classics; its doggerel days would be numbered. (14) Intercalation would be limited to the last day of the year instead of being introduced into the second month, as at present.

It will be urged that there are

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to be pointed out in the proposed changes, and there should be no disposition to shirk the issue of such a claim.

(1) One alleged disadvantage will be named as referring to the fact of change itself. Any disturbance of existing institutions will be resented by the more conservative class as unwarrantable. It can be said in answer to this objection that change in itself is not objectionable. It is only when change brings with it such inconvenience as to render it unwarrantable that it is to be avoided. Indeed, there are many facts lying on the surface of physical science which tend to show that change is desirable, and this is especially true where the change is an improvement. (2) The disturbance of statistical work in the almanac may be urged, but it may be said in reply that there would be no change of this kind which a school-boy could not efficiently manage. Besides, if the change be made as proposed at the close of the century, the new calendar era would be easily remembered by all, and thus no great confusion would result. (3) Others would object that the new system would displace the dates of anniversaries. This is true, and there is a sense in which those

born in any month after its 28th day would have no more birthdays, but this would be easily arranged, for every day would still have its place which would be readily ascertained. Thus, in our ordinary year the equinoxes occur on or about the 80th and 264th days of the year, and these, according to the proposed system, would be on the 23rd of 3rd month and 11th of 10th month in every year. Usually, however, there would be no necessity for any change, and those who attach importance to anniversaries, usually have leisure for such calculations. (4) Another class of persons will urge as an objection that this plan involves the displacement of Sunday, and while we all regard that day, there will be few, I think, and they chiefly of the uninformed, who will regard the displacement of Sunday by New Year's Day as a very serious matter. It is always claimed by discerning minds, as it was by the Founder of Christianity Himself, that the reason for the institution of the seventh day rest is found in the necessities of man's nature; hence, if these necessities are satisfied as well or better by the new system than by the old, the objection is answered. I have, however, recommended the adoption of the proposed calendar in a year which begins on Saturday, in order that persons who have conscientious objections to the displacement of the week, may enjoy the conveniences of the new calendar for a whole year before any displacement of days occurs, when probably their scruples will have vanished. (5) Akin to the last two points is the claim that it would interfere with the dates of the ecclesiastical festivals. In answer to this objection it may be said that just as the Church has in the past adjusted its calendar independently of the civil register, not even Pope Gregory himself hesitating to change dates in the latter, so will they continue to do so, without any interference with the popular convenience. Indeed, the Hebrew race has done this in Christian lands from time immemorial.

And now I believe all the objections which have occurred to me have been noted. It remains with those interested in such matters—and who is not interested?—to say whether we shall adopt a simple, symmetrical and convenient system, such as is herein proposed, or continue to use a complex, confused and confusing system, which had its origin in a superstitious age, and developed under influences which were innocent, to a large extent, of scientific motives.