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A COMMON-SENSE CALENDAR

OUR present Calendar is merely a rough tool. We can readily calculate dates inside of each month, and with some figuring we can reckon a month or two ahead. But when we are called upon to connect the proper week-day with some date more than two months ahead or behind, scarcely one of us can perform the operation without reference to a calendar. Current-year calendars are generally accessible, but it is no easy matter to ferret out old dates. It is even more difficult to determine dates in future years. In short, our measuring scale for dates is faulty. Like the Roman numerals it is unsuited for any but the simplest problems.

Who, for example, can find out for himself on what day of the week he was born? On what day of the week was the Declaration of Independence signed, or the Battle of Waterloo fought?

If your lease expires October 1 (or May 1), and you have to move, in what part of the week will this happen? If you have a regular engagement the first Monday of each month, will it conflict with another engagement on the third of next month or the month after? What months this year have five Sundays? How many annoying mistakes have you made during your life in such calculations?

If a ninety-day note or a three-month note is to be paid, on what day of the week is it due? Some quarters are longer than others, making the exact reckoning of interest difficult. Weekly periods of earnings in one year are not exactly comparable with the corresponding periods in other years. Holidays, like interest days, fall on different week-days in different years—sometimes very awkwardly.

The lopsidedness of our calendar is due to the Emperor Augustus, who insisted that his month should contain as many days as the month of Julius Cæsar. As a matter of his-

THE NEW ERA CALENDAR

January				*July*		
		April				*October*
Sun.	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.
[Y]	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*

February			*August*			
		May				*November*
Sun.	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.
*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

March			*September*			
		June				*December*
Sun.	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.
*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	[L]	*	*	*	*	*

THE MONTHLESS OR EXTRA DAYS

[Y]—THE YEAR-DAY precedes January 1 every year.

Rule: Divide number of year by 7; if the remainder is 0, the Year-Day is Year-Saturday; if the remainder is 1, Year-Sunday, etc. (Example: In 1904 Year-Day is "Year-Saturday.")

1919—Year-Sunday
1920—Year-Monday
1921—Year-Tuesday
1922—Year-Wednesday
1923—Year-Thursday
1924—Year-Friday

[L]—THE LEAP-DAY precedes July 1 every fourth year (excepting the years 1700, 1800, 1900, 2100, 2200, etc.).

Rule: Divide number of year by 28; if remainder is 0, the Leap-Day is Leap-Saturday; if remainder is 4, it is Leap-Sunday; if 8, Leap-Monday, etc. But there are no Leap-Days in years divisible by 100 and not by 400. (Example: There is no Leap-Day in 1900; in 1904 Leap-Day is "Leap-Saturday.")

1920—Leap-Wednesday
1924—Leap-Thursday
1928—Leap-Friday
1932—Leap-Saturday

tory this is interesting. But is it fitting that the modern world should be put to serious inconvenience, merely to commemorate the glories of the Augustan age?

Several suggestions have recently been made for a reformed Calendar. The "New Era Calendar" is original, I believe, in one particular. It proposes to take the first day of the year (the Year-Day) and the extra day in Leap Year (Leap-Day) out of the regular order of week-days and make them up into *weeks of their own.* In this Calendar, Year-Day belongs to no month at all; it comes in between December 31 and January 1. In years exactly divisible by 7, the Year-Day is Year-Saturday, the next year it is Year-Sunday, etc. Leap-Day comes between June 31 and July 1 once in 4 years (except in century years). In years divisible by 28 it is Leap-Saturday, 4 years later it is Leap-Sunday, etc.

Thus in 1919 the first day of the year is Year-Sunday, in 1920 it is Year-Monday, and so on—though the thirty-first of December is Sunday every year and the first of January is always Monday. The extra leap-year day in 1920 will be Leap-Wednesday, in 1924 Leap-Thursday, and so on. But June 31 is always Sunday and July 1 is always Monday.

Attempts to standarize the calendar so that each date would always fall on the same week-day have hitherto met with considerable opposition from church authorities and devout persons of many different creeds. They insist on scriptural grounds that the seventh day must always be set apart as a day of rest and religious observance. The present scheme provides for this exactly. There are 52 Sundays (and Saturdays) in each year, with one additional Sunday (and Saturday) once in seven years, and one more Sunday (and Saturday) once in seven leap years. This seems to meet fully the requirements of the church and of scripture.

In other respects the New Era Calendar copies an earlier Swiss[1] proposal. It is simple.

[1] By L. A. Grosclaude, of Geneva. Virtually the same scheme has been worked out (perhaps independently) by several persons of different nationalities. Camille Flammarion proposed something

The table given here is good for *any year*. Two months of 30 days are followed by one month of 31 days, making 13 weeks in each quarter. January, April, July and October are *exactly alike*. The first day of these four months is Monday—it is the same in every year. The first day of February, May, August and November is always Wednesday, and the first day of March, June, September and December is always Friday.

Each quarter has exactly 91 days; the monthless days (Year-Day and Leap-Day), being holidays, may be left out of account in reckoning interest, rents, wages, etc. Birthdays, wedding anniversaries, holidays and other notable dates fall on the same day of the week every year. Election Day is always November 7; Inauguration Day is always Monday. A college or school which opens on (say) the third Tuesday in September would always open September 19. These are but a few of the many ways in which reckoning is simplified.

Any person of ordinary intelligence can readily find the day of the week for any date in any year according to this Calendar. In a few minutes one can learn to associate Monday, Wednesday and Friday with the proper months, and the rest is easy. Even a schoolchild could answer without difficulty such questions as were asked at the outset, though they effectually baffle most of us under the present system. The Gregorian Calendar has fourteen different yearly arrangements; each of these involves a table of twelve months. The New Era Calendar calls for only *one table of three months*. If we consider the table of extra days as doubling the complexity of our scheme, the New Era Calendar is still twenty-five times simpler than the Gregorian.

Among the reconstructions which will undoubtedly follow the war, would it not be worth while to adopt a common-sense Calendar?

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rather similar in 1884, but Monsieur Grosclaude seems to have been given the first definite formulation. (See *Journal suisse d'horlogerie*, 1900, *24* pp. 378–9, and table on p. 356; also note in *Revue scientifigue*, 1900, 4°s. *13*, p. 766, where the present writer first saw it.) Flammarion repeated his proposal in 1901 (*La Revue, 37*, pp. 233–246). Alexander Philip proposed virtually the same plan in 1814. ("Reform of the Calendar," London: Kegan Paul, pp. 127.)

Several different schemes have also been suggested; *e. g.*, 13 months of 28 days each; and the matter was once discussed by an international commission. See also a number of communications in SCIENCE, 1910, *32*. The writer is unable to find that the idea of grouping the year-days into "year-weeks" has ever been suggested before.

CHEMICAL LITERATURE AND ITS USE

BUNSEN says, there are two distinct classes of men, those who work to enlarge the boundaries of knowledge, and those who apply that knowledge to practical uses. If we agree with a recent declaration that "chemistry is the intelligence department of industry," the modern chemist and particularly the chemical engineer, who is called on to answer all questions for every industry as well as know his own subject, needs to be aware of all possible sources of information.

Thus, a first-class chemist (including here the chemical engineer) must know and be able to use not books, only, but the periodical literature, journals, publications of societies and governments. He requires, then, a reading knowledge of German, with French if possible, and sufficient practise in English to enable him to make, both orally and in writing, a concise, clear report of work accomplished or planned, this being in addition to technical skill gained by training, and a liking for his work.

Specific training in this use of literature becomes a real problem where there are a number of students engaged individually in more or less advanced stages of research work, as seniors and graduate students.

Such training is given to a certain extent under various names, in a number of American technical schools and universities. Seniors are directed to find first what has been done on any problem assigned them. Even sophomores realize that the class texts are not the only books, while some join the American