THE

AMERICAN ALMANAC

AND

REPOSITORY OF USEFUL KNOWLEDGE

FOR THE YEAR

1830.

PART I.
CALENDAR, AND NATURAL PHENOMENA FOR THE YEAR.

PART II.
INFORMATION CONNECTED WITH THE CALENDAR,
AND EXPLANATIONS OF
CELESTIAL CHANGES AND ASTRONOMICAL PHENOMENA.

PART III.
MISCELLANEOUS DIRECTIONS, HINTS, AND REMARKS.

PART IV.
STATISTICAL AND GENERAL INFORMATION CONCERNING
Foreign Countries.

PART V.
STATISTICAL AND OTHER INTELLIGENCE RESPECTING
The United States.

BOSTON:
PUBLISHED BY GRAY AND BOWEN.

NEW YORK:
BY G. AND C. AND H. CARVILL.

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FOR THE YEAR

1830,

COMPRISING

A CALENDAR FOR THE YEAR; ASTRONOMICAL INFORMATION;
MISCELLANEOUS DIRECTIONS, HINTS, AND REMARKS;
AND STATISTICAL AND OTHER PARTICULARS
RESPECTING FOREIGN COUNTRIES AND
THE UNITED STATES.

VOL. I.

BOSTON:
PUBLISHED BY GRAY AND BOWEN.

NEW YORK:
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DISTRICT OF MASSACHUSETTS, TO WIT.

District Clerk's Office.

Be it remembered, that on the first day of December, A. D. 1829, and in the fifty-fourth year of the Independence of the United States of America, Gray & Bowen, of the said district, have deposited in this office the title of a book, the right whereof they claim as proprietors, in the words following, *to wit:*

"The American Almanac and Repository of Useful Knowledge for the year 1830, comprising a Calendar for the Year; Astronomical Information; Miscellaneous Directions, Hints, and Remarks; and Statistical and other Particulars respecting Foreign Countries and the United States.—Vol. I."

In conformity to the act of the Congress of the United States, entitled "An act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies during the times therein mentioned;" and also to an act, entitled "An act supplementary to an act, entitled 'An act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned,' and extending the benefits thereof to the arts of designing, engraving, and etching historical and other prints."

JNO. W. DAVIS,
Clerk of the District of Massachusetts.

CAMBRIDGE:

E. W. METCALF AND COMPANY,
Printers to the University.

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PART V.—STATISTICAL AND OTHER INTELLIGENCE RESPECTING THE UNITED STATES.

Contents.

PRELIMINARY OBSERVATIONS.

THE main object of this work is *utility*. It has been the aim of its conductors to collect within the smallest compass the greatest amount of useful and practical information on those topics, in which the community is generally interested. The work is divided into Five Parts, and its plan and purposes will best be seen by a brief analysis of each of these.

The FIRST PART is devoted to the *Calendar*, embracing, in addition to the particulars usually inserted in Almanacs, a large mass of important facts in relation to the celestial movements, and tables for nautical and astronomical purposes. The Eclipses and Occultations have been calculated with extraordinary care, and much valuable information will be found connected with the subject of Tides. The Tide Table is followed by a table of the Latitude and Longitude of the principal places in the United States. To suit the calendar pages to every part of the Union, the rising and setting of the Sun and Moon have been calculated for some of the chief cities in different parts. A column in each month is also devoted to useful remarks, and another to remarkable events. Further explanations of this part of the work will be found prefixed to the Calendar.

The SECOND PART contains information, communicated in a simple and intelligible form, respecting the celestial changes and most common astronomical appearances. An account of Almanacs is followed by an explanation of the division of time into Days, Weeks, Months, and Years; the Holydays of the Church; the variety of the Seasons; the Signs of the Zodiac; Astrology; the Moon's Phases, and Eclipses; Tides; Spots on the Sun; the Rotation of the Planets; the Orbits of the Planets; and much information on other kindred topics, designed to elucidate and adapt them to the understanding of persons of all degrees of knowledge.

In PART THIRD are contained miscellaneous articles and directions of general usefulness; a selection from Washington's Agricultural Notes and Journal; Franklin's Poor Richard

Revived; advice on the Use of Fruit; an Essay on the advantages of Fresh Air in promoting health and comfort; another on Clothing; and Facts concerning Intemperance.

The FOURTH PART embraces a selection of statistical matters relating to foreign countries, and particularly a curious and full table of the Statistics of the World. In compiling this part, as well as the others, regard has been had not only to the temporary but permanent value of the facts selected. There will be found tables of the Population, Families, Houses, Land, Canals, and Roads of Great Britain; an essay on the Increase of the Inhabitants of Europe; on the comparative force of France and England; the number of books printed in France; the value of money in different countries in Europe, reduced to American currency; the Revenues, Expenditures, Trade, Finance, Commerce, Currency, and Manufactures of Great Britain. All these statements are brought down to the latest dates.

The FIFTH PART occupies a much larger portion of the work, than any of the others, and has the same design in regard to the United States, which the fourth part has in reference to foreign countries. As introductory to the main subjects, a short view is taken of the Colonial Statistics, which is followed by a selection of particulars illustrating the Statistics of the Revolution, such as the Expense of the War, amount of Continental Money issued, Loans in France, Troops employed, Presidents of the Old Congress, Adoption of the State Constitutions, and Signers of the Declaration of Independence. Then follow statistical tables and statements respecting the United States since the foundation of the government, and at present; such as a record of the elections of Presidents; lists of civil officers, Heads of Departments, American Ministers abroad, Foreign Ministers in this country, Judges, Representatives; also the Receipts and Expenditures of the Government, the Public Debt, the Bank of the United States, Commerce, Public Lands, Indians, Post Office, Coinage, Patents, Military Posts, Vessels of War, Navy Yards, Militia, Internal Improvements, Population, Colleges, Religious Denominations, Meteorology. After this come the statistics of *each State*, as far as the facts could be collected, comprising an account of the public revenues, banks, schools, civil officers and their salaries, internal improvements, militia, modes of taxation, prisons, and whatever else relates to the practical administration of government, the organization of local communities, and the moral and physical progress of society. At the close is a Chronicle of the Events of the past year.

Such is the outline of our plan, as executed in the present attempt. We confess that our wishes have been but partially realized, especially in regard to the individual states. As little pains are taken in several of the states to collect statistical facts, and less to arrange and present them to the public in a tangible form, it is extremely difficult to carry this head to any degree of completeness. Our enterprise was undertaken, also, at too late a period in the year to enable us to procure intelligence from remote states. In some instances, however, the deficiency must be ascribed rather to the remissness of our correspondents, than to any want of effort on our part. What we have published, will be enough to indicate the extent of our plan, and the manner in which it may be filled out. It is presumed, that the states, for their own convenience, will gradually adopt regulations for collecting and embodying particulars of this sort, and then the task of condensing and combining them into a single work will be comparatively easy.

Should the success of the present volume warrant the continuance of an annual series, we may venture to promise essential improvements as we proceed. It will be seen, that a great deal of matter in this volume is of a permanent character, suited for reference at any future day, as well as for use in the passing year. *Facts* are unchangeable in their nature, and, when once recorded, their value is never lost. The method of tabular views, for communicating certain kinds of knowledge, has immense advantages over any other, in presenting, at a single glance of the eye, a mass of information, that would be expanded over many pages if exhibited in any other form. In every part of the volume, our chief aim has been to condense the information into as small a space possible, and at the same time to convey it in so methodical and clear a manner, that it might be easily received by all classes of readers.

The purpose of this work will allow the admission of many facts besides those of a strictly statistical character. The permanent features of geography may be here exhibited from time to time in tabular and compressed forms; such as the extent of different territories and divisions of the earth, the length of rivers, height of mountains, magnitude of seas, lakes, and islands, and all other particulars naturally embraced in comparative geography. The same may be said of chronological records, not merely as denoting the order of a series of events, but as grouping those of a similar kind under particular heads. In this way may be presented the dates at which the sovereigns of different countries were crowned, and the length of their

reigns; the dates and places of memorable battles, the number of men engaged, and loss on each side; the dates of the treaties between nations; and other incidents analogous in their character. These remarks may even be extended to the regions of history and biography. A mass of facts thus collected from year to year, not only will have some interest at the moment, but will at length become a useful storehouse for future recurrence.

A brief outline of our political progress may also be easily introduced, such as a summary of the proceedings of Congress and of the legislature of the several states for each year, so far as they give rise to any new results either in the promulgation of laws, or the establishment of institutions, or aiding schemes of improvement. All the particulars of this sort, when divested of their extraneous accompaniments, may be brought together within a narrow compass. Notice may also be taken of charitable and religious societies, and associations for promoting the objects of humanity, morals, knowledge, and social order. A comparison of the extent of such efforts might communicate correct views of their effects, and serve as a guide in future undertakings of a like nature.

But in all this we have again to confess, that we are only hinting at what may be done, within the scope of our plan, and what we hope will be done, but not what we have actually accomplished or attempted in the present volume.

The astronomical part, we believe, will be found more full and accurate, than any thing of a similar kind which has appeared in the United States. It is intended to answer all the essential purposes of a nautical almanac, in addition to the usual calculations of an almanac and ephemeris. Should the work be continued, great care will be devoted to this part, and new matter will annually be given illustrating in a simple manner the practical topics in the science of astronomy.

We have to acknowledge our obligation to the *Companion to the British Almanac* for many of the particulars, contained in the fourth part of the present work, relating to foreign countries.

EXPLANATION OF THE CALENDAR.

The rising and setting of the Sun and Moon are given for five places in the United States, situated in different latitudes; the Almanac is thus adapted to the inhabitants of every part of the country, as these particulars depend simply on the latitude, and are wholly independent of the longitude.

The column headed *Boston, &c.* will answer for all places north of latitude 41° 32′, that is, British Continental North America, Maine, New Hampshire, Vermont, Massachusetts, and Michigan; all but the southern extremity of New York and Rhode Island, the northern half of Connecticut, the northern third of Pennsylvania, the Connecticut Reserve in Ohio, and the northern extremities of Illinois and Indiana.

The column headed *New York, &c.* is intended for places situated between latitude 41° 32′ and 39° 48′, that is, the southern extremities of New York and Rhode Island, all but the northern third of Pennsylvania, all but the southern extremity of New Jersey, the central parts of Ohio, Illinois, and Indiana, and the northern third of Missouri.

The column headed *Washington, &c.* may be used between latitude 39° 48′ and 35° 52′, that is, throughout Maryland, Virginia, Delaware, the District of Columbia, and Kentucky, the northern half of Tennessee, the southern extremity of New Jersey, the southern third of Ohio and Indiana; the southern half of Illinois, all but the northern third of Missouri, and the northern third of North Carolina and Arkansas.

The column headed *Charleston, &c.* is suited to places between latitude 35° 52′ and 31° 24′, namely, South Carolina, all but the southern extremity of Georgia, Alabama, and Mississippi, all but the northern third of North Carolina and Arkansas; the southern half of Tennessee; the northern half of Louisiana.

The column headed *New Orleans, &c.* is adapted to places south of latitude 31° 24′, that is, all Florida and Texas, the southern half of Louisiana, and the southern extremities of Georgia, Alabama, and Mississippi.

The setting of the Moon is given from new moon to full, and the rising from full moon to new; the letters M. A. *m. a.*, to be found in these columns and in other parts of the Almanac, are used to denote *Morning* and *Afternoon.*

The time of the Phases of the Moon is computed for the meridian of Washington, but may be readily reduced to that for any other meridian, by adding or subtracting the difference of the longitude according as the same is east or west of that city. The time of the moon's southing is computed for the *same* meridian. The variation, however, even in a remote part of the United States, will be inconsiderable.

The time of High Water is corrected for the difference of the Right Ascension of the Sun and Moon, and the distance of the Moon from the Earth. The small corrections depending on their declinations and our distance from the Sun, have been neglected as unimportant; indeed it has been ascertained from a series of several hundred observations, that the corrections we have introduced will, in calm weather, give the time of high water within *fifteen* minutes, and, generally, much nearer. The difference between the time of high water at New York, Charleston, and Boston, was derived from the best authorities; but perhaps it has not been ascertained with the degree of accuracy that is to be desired. If our authorities are correct, the time of high water along the coast of Maine, New Hampshire, and Massachusetts, as far as Nantucket, is nearly the same as at *Boston.* Moreover, when it is high water in *New York,* it is nearly so in Long

Island Sound, along the coast of New Jersey, Delaware, Maryland, Virginia, and North Carolina, as far as Cape Lookout, (with the exception of Sandy Hook and the entrance of Chesapeake Bay;) whilst along the coast of the southern part of North Carolina, of South Carolina, Georgia, and Florida, at Sandy Hook and the entrance of the Chesapeake, the time agrees very nearly with that in the column for *Charleston;* when greater accuracy is desired, reference should be had to the Tide Table on the 15th page. The time of the tide immediately preceding the southing of the moon, only, having been given, it should be corrected by the addition of half the difference when the time of the other tide is required.

The Planets are placed in the order in which they pass the meridian on the *first* day of each month, and their declinations are computed for the moment of their passage over the meridian of Washington.

The places of the four new planets are not given, we believe, in any English or French Almanac.

All the calculations in this Almanac, with the exception of the Occultations and the eclipses of Jupiter's Satellites, are expressed in *apparent* time; but in our large cities the *mean* time is more generally used. Apparent time, however, is readily converted into mean, by applying the equation of time, according to the direction at the head of the column; and mean into apparent, by applying the same equation with the contrary sign.

The longitude, latitude, declination, semidiameter, and horizontal parallax of the Sun and Moon, the Moon's distance from the Sun, the equation of time, and the obliquity of the Ecliptic, being intended rather for the navigator and astronomer than the public generally, are adapted to *apparent* time for the meridian of Greenwich, whence we reckon our longitude.

By comparing the Sun's longitude and his distance from the Moon as here given, with that in the Nautical Almanac, they will be found to differ, by a quantity varying from *two* to *eleven* seconds. This difference, according to Bessel, is the error of Delambre's tables of the Sun, used in the computation of the Nautical Almanac.

The lunar distances are placed in a manner, which, it is hoped, will be found convenient for the formation of differences.

The Sun's declination, being copied from the Nautical Almanac, is not strictly correct; but the error never exceeds three seconds, and is, for the most part, less than half that quantity; if greater accuracy is desired, the declination, as well as the right ascension can be readily computed from his longitude and latitude and the obliquity of the ecliptic.

The longitude and latitude of the Moon being given for intervals of twenty-four hours, the proportional of their variation in that term, for any intermediate time, will not be strictly accurate; but must be corrected for the differences of the second, third, and fourth orders, when great accuracy is required. These corrections may be computed by the following formulæ, R being the 2d, 3d, or 4th difference, and x the time from the *first* interval.

Of *second* differences $\frac{R}{2} \times \overline{2 - x}$

Of *third* " $\frac{R}{6} \times \overline{x^3 - 3x^2 + 2x}$

Of *fourth* " $\frac{R}{24} \times \overline{x^4 - 6x^3 + 11x^2 - 6x}$.

In these formulæ, it will be noticed, that when the *second* or *fourth* differences are positive, the correction is negative, and *vice versâ;* but that the correction for the *third* difference has the sign of that difference. If, for example, the longitude of the moon at midnight on the first of January were required, it will be found that the above formulæ give as the correc-

tion of half her motion between the first and second, + 8″.6; hence her longitude at that time is 9° 46′ 7″.6.

The Occultations (pages 4, 5, 6,) were computed with the greatest strictness, and so very nearly accurate are the Lunar Tables, that these interesting phenomena can be predicted with the certainty that they will take place almost at the precise moment. Indeed, that of Aldebaran, on the 18th of September last, actually happened at Boston, at the very second; that of the 21st of August within *three* seconds, and that of the 12th of November within *ten*, although the last took place near the edge of the moon, and in a position to be most affected by an error in her tabular longitude.

We cannot refrain from expressing to M. Encke, our great obligation for the assistance we have received from his Astronomical Year-Book for 1830. "This work" (says Mr. Baily, first Vice-President of the London Astronomical Society,) "should be hailed as the harbinger of a general improvement in the mode of arranging and forming the ephemerides of different nations. M. Encke, disdaining the trammels of former and less enlightened times, and relying on his own excellent judgment and abilities, has nobly and boldly struck out a new path for himself, which, there can be no doubt, will soon be followed by every nation pretending to encourage the science of Astronomy."

Although it is mortifying to reflect that this country cannot, or will not, attempt to attain eminence in this and other scientific pursuits, yet we should be grateful for information, wherever it can be found, and hope we may be able, eventually, to emulate the splendid example that has thus been set us.

To the English Nautical Almanac we are indebted for some of the elements here published. This work, though not to be compared with that of which we have just spoken, is, we apprehend, harshly mentioned by Mr. Baily, when he calls it "an unnecessary expense" and "a disgrace to the nation;" although it must be confessed to be singular, that, for a period of nearly thirty years after the discovery of four new planets, not the least notice should be taken of any one of them, and that the longitude of the Sun and his distance from the Moon (so important in the determination of terrestrial longitude) should still be computed from Delambre's tables, even after their errors had been pointed out, and the amount of them in 1829 actually calculated, in the Supplement to the Almanac for that year. Perhaps, however, it may be thought, that Americans have not the least right to complain of the defective state of the English Nautical Almanac, when they, so far from having ever attempted to produce a better, have done little to advance the noble science of Astronomy.

Although great care has been taken to avoid errors, a few escaped notice until the opportunity for correcting them had passed; perfect accuracy, it would seem, cannot be attained, since even in the Berlin Year-Book, computed and edited, as it was, by the greatest astronomers, a considerable number of typographical errors is to be met with. Moreover, the time of the passage over the meridian of *all* the planets, as therein given, is for the most part incorrect; that of Mercury and Venus being one day too late, when they south *before* noon, and that of all the others being correct, only, when they south about midnight.

The year 1831 will be distinguished for astronomical phenomena worthy of the attention of our astronomers. Besides the eclipse of the Sun on the 12th of February, which will be very large throughout the United States, and *annular* in some part of Louisiana, Mississippi, Alabama, Georgia, North Carolina, Virginia, and Massachusetts, there will be *eight* visible occultations of Aldebaran, three of Jupiter, three of Saturn, two of Regulus, one of Venus, and one of Uranus, as well as of a great number of the smaller stars.

THE

AMERICAN ALMANAC

FOR

1830.

PART I.

CALENDAR, AND NATURAL PHENOMENA FOR THE YEAR.

THE PLANETS, &c.

☉ The Sun.	⯰ Vesta.	♄ Saturn.
⊕ The Earth.	⚵ Juno.	♅ Herschel or Uranus.
☽ ● ○ ☾ The Moon.	⚴ Pallas.	☌ Conjunction.
☿ Mercury.	⚳ Ceres.	□ Quadrature.
♀ Venus.	♃ Jupiter.	☍ Opposition.
♂ Mars.		

Dominical Letter - - -	C	Solar Cycle - - -	19
Lunar Cycle, or Golden Number	7	Roman Indiction - - -	3
Epact - - - - - -	6	Julian Period - -	6543

EMBER DAYS.

March 3d, 5th, and 6th.	September 15th, 17th, and 18th.
June 2d, 4th, and 5th.	December 15th, 17th, and 18th.

MOVEABLE FEASTS IN 1830.

Septuagesima Sunday, Feb. 7.	Low Sunday, April 18.
Quinq. or Shrove Sunday, Feb. 21.	Rogation Sunday, May 16.
Ash Wed. or 1st day of Lent, Feb. 24.	Asc. Day, Holy Thurs. May 20.
Mid-Lent Sunday, March 21.	Whit Sunday, May 30.
Palm Sunday, April 4.	Trinity Sunday, June 6.
Easter Day, April 11.	Advent Sunday, Nov. 28.

SIGNS OF THE ZODIAC,

With the time of the Sun's entrance into, and continuance in, each of them.

		Sun enters.	Continues. d. h. m.
Spring Signs.	1. ♈ (Aries.)	March 20, 9h. 24m. A.	30 12 29
	2. ♉ (Taurus.)	April 20, 9h. 53m. M.	31 0 18
	3. ♊ (Gemini.)	May 21, 10h. 11m. M.	31 8 31
Sun in the Spring Signs,			92 21 18

		Sun enters.	Continues.
Summer Signs.	4. ♋ (Cancer.)	June 21, 6h. 42m. A.	31 10 43
	5. ♌ (Leo.)	July 23, 5h. 30m. M.	31 6 29
	6. ♍ (Virgo.)	August 23, 11h. 59m. M.	30 20 44
Sun in the Summer Signs,			93 14 1
Sun *north* of the Equator, or interval between the beginning of Spring and of Autumn,			186 11 19
Autumn Signs.	7. ♎ (Libra.)	Sept. 23, 8h. 43m. M.	30 8 16
	8. ♏ (Scorpio.)	October 23, 4h. 59m. A.	29 20 30
	9. ♐ (Sagittarius.)	November 22, 1h. 29m. A.	29 12 31
Sun in the Autumnal Signs,			89 17 17
Winter Signs.	10. ♑ (Capricornus.)	Dec. 1829, 21, 8h. 11m. A.	29 10 22
	11. ♒ (Aquarius.)	Jan. 1830, 20, 6h. 33m. M.	29 14 40
	12. ♓ (Pisces.)	Feb. " 18, 9h. 13m. A.	30 0 11
Sun in the Winter Signs,			89 1 13
Sun *south* of the Equator,			178 18 30
Sun *north* of the Equator,			186 11 19
Length of the tropical year, commencing at the winter solstice, 1829, and ending at the winter solstice, 1830,			365 5 49

ECLIPSES OF THE SUN AND MOON IN 1830;

Those of the Moon happen on the 9th of March and 2d of Sept. and will be visible in part; those of the Sun will be altogether invisible, in the United States.

I. *February* 22 and 23, the Sun eclipsed.

Beginning of the general eclipse (or the penumbra of the moon first touches the earth), in Lat. 46° 9′ North, and Long. 46° 24′ East from Greenwich, Feb. 22, at 10h. 29m, A., apparent time at Washington.

Greatest obscuration (3° 42′) in Lat. 71° 19′ N., Long. 48° 58′ E., at 11h. 42m. A.

End of the general eclipse, (or the penumbra leaves the earth), in Lat. 75° 2′ N., Long. 137° 57′ E., Feb. 23, at 0h. 56m. M.

Visible to a great part of the northwest of Asia, and to the eastern portion of European Russia. The western line of contact passes through the circle of Long. of about 32 E.; so that at St. Petersburg there will be no eclipse. At *Kasan* the eclipse will begin at sunrise, Feb. 23, at 7h. 1m. M. apparent time at Kasan, and will end at 8h. 23m. M.

Digits eclipsed, 2° 54′.

At *Moscow* the Sun will rise eclipsed. The end will take place Feb. 23, 7h. 29m. M. apparent time at Moscow. Digits eclipsed, 2° 18′.

II. *March* 9, the Moon eclipsed.

Beginning of the general eclipse	6h. 28m.	M. app. time at	Washington.
Beginning of total darkness . .	7 31	"	"
Middle of the eclipse . .	8 24	"	"
End of total darkness . . .	9 18	"	"
End of the general eclipse .	10 19	"	"

At *New Orleans.*

Beginning of the eclipse . .	5h. 35m.	M. app. time at	New Orleans.
Moon sets eclipsed . .	6 9	"	"

The geographical positions of the places to which the Moon will be vertical at the time of the above phases, will be found in the following table; by means of which it will be very easy to determine where the eclipse will be visible.

Lat.	4°	46′	North,	Long.	185°	6′ East.
"	4	37	"	"	169	51 "
"	4	29	"	"	157	3 "
"	4	20	"	"	144	5 "
"	4	11	"	"	129	0 "

III. *March* 24, the Sun eclipsed.

Beginning of the general eclipse, in Lat. 73° 41′ S., Long. 258° 59′ E., 7h. 55m. M., apparent time at Washington.

Greatest obscuration (6° 12′ digits) in Lat. 72° 0′ S., Long. 47° 45′ E., 9h. 24m. M.

End of the general eclipse, in Lat. 37° 24′ S., Long. 28° 40′ E., 10h. 54m. M.

This eclipse will be visible in the South, Atlantic and Frozen Oceans.

At the *Cape of Good Hope.*

Beginning of the eclipse at . . 4h. 20m. A. app. time at the Cape.
End . . . . . 5 12 " "
Digits eclipsed, 1° 12′.

IV. *August* 18, the Sun eclipsed.

Beginning of the general eclipse, in Lat. 56° 21′ S., Long. 58° 43′ W., 6h. 10m. M. app. time at Washington.

Greatest obscuration (1° 30′) in Lat. 70° 48′ S., Long. 81° 5′ W., 7h. 2m. M.

End of the general eclipse, in Lat. 76° 24′ S., Long. 2° 6′ W., 7h. 54m. M.

Visible in the South Frozen Ocean.

V. *September* 2, the Moon totally eclipsed.

	Boston.	N. York.	Wash'n.	Charles'n.	N. Orleans
	h. m.	h. m.	h. m.	h. m.	h. m.
Beginning of the general eclipse	4 5¾a.	3 54 a.	3 42¼a.	3 30¾ a.	2 49½ a.
Beginning of total darkness .	5 3½	4 51¾	4 40	4 28½	3 47¼
Middle of the eclipse . .	5 53¾	5 42	5 30¼	5 18¾	4 37½
Moon rises eclipsed . .	6 30	6 28	6 26	6 23	6 22
End of total darkness . .	6 44	6 32¼	6 20½	6 9	5 27¾
End of the general eclipse .	7 41¾	7 30	7 18¼	7 6¾	6 25½

At Boston and New York the Moon will rise *totally* eclipsed. At the above times the Moon will be in the zenith of the following places.

Lat.	8°	20′	South.	Long.	46° 28′	East.
"	8	4	"	"	32 30	"
"	7	50	"	"	20 21	"
"	7	36	"	"	8 12	"
"	7	20	"	"	5 26	West.

VI. *September* 16, the Sun eclipsed.

Beginning of the general eclipse, in Lat. 75° 59′ N., Long. 70° 28′ E., 7h. 30m. A., app. time at Washington.

Greatest obscuration (4° 42′) in Lat. 72° 4′ N., Long. 116° 27′ W., at 9h. 6m. A.

End of the general eclipse, in Lat. 40° 39′ N., Long. 144° 58′ W., 10h. 41m. A.

This eclipse will be visible in the northwest part of North America, and in the northeast part of Asia.

The solar eclipses this year happen at such a distance from the moon's node, that not one of them will be total in any part of the earth.

Solar eclipses have been, of late years, very rare in the United States; only two having taken place since 1823; but in the next eight years no less than five will be visible; all of which will be very large, and *three central.*

During the remainder of the present century, *twenty-eight* will be visible at Boston, of which the following are those whose magnitude will exceed 6 digits.

1831	Feb. 12.	digits	eclipsed	11°	26′	on the South	Limb.
1834	Nov. 30.	"	"	10	28	" "	"
1836	May 15.	"	"	8	6	" "	"
1838	Sept. 18.	"	"	10	51	" "	"
1846	April 25.	"	"	6	41	" "	"
1854	May 26.	"	"	11	21	Annular.	
1860	July 18.	"	"	6	13	on the North	Limb.
1865	Oct. 19.	"	"	8	16	" South	"
1869	Aug. 7.	"	"	10	11	" "	"
1875	Sept. 29.	"	"	11	25	Annular.	
1878	July 29.	"	"	7	21	on the South	Limb.
1885	March 16.	"	"	6	28	" North	"
1892	Oct. 20.	"	"	8	12	" South	"
1900	May 28.	"	"	11	1	" "	"

The eclipse of Feb. 1831 will be *annular* in the northern part of Virginia, in the island of Nantucket, and in Halifax, Nova Scotia.

The eclipse of Nov. 30, 1834, will be *total* in Charleston and Beaufort, S. C. and vicinity.

The eclipse of May 15, 1836, will be *annular* in the West Indies, and in the city of Edinburgh, G. B.

The eclipse of Sept. 18, 1838, will be *annular* in the western part of Connecticut, New York, New Jersey, Pennsylvania, Maryland, Delaware, Virginia, and part of North Carolina, and *central* at Washington.

The eclipse of May 26, 1854, will be *annular* in Boston, and part of New Hampshire and Maine.

The eclipse of Oct. 19, 1865, will be *annular* at Wilmington, N. C. and in Charleston, S. C. and their vicinity.

The eclipse of August 7, 1869, will be *total* at Wilmington, N. C. and in part of Virginia.

The eclipse of Sept. 29, 1875, will be *annular* at Boston, part of New Hampshire, and part of Maine.

The eclipse of May 28, 1900, will be *total* in Virginia, a little south of Norfolk.

The last total eclipse of the Sun at Boston happened on the 16th of June, 1806.

The last total eclipse in any part of the United States (at Cape Roman, Florida), on the 9th of December, 1825.

OCCULTATION OF STARS BY THE MOON IN 1830,

Visible at Boston, and other parts of the United States; the Phases of which are expressed in mean solar *time for the meridian for Boston.*

January 5. Occultation of Aldebaran.

Immersion	10h.	14m.	51s.	.0	A.	11′ 19″ South of the centre
Emersion	11	12	0	.4		11 13 of the Moon.

Jan 16. Occultation of ϑ ♍.			
Star rises eclipsed .	Jan. 15, 11h. 38m. 0s. A.	2′ 51″	South of the centre.
Emersion . .	Jan. 16, 0 28 8 M.		
February 10. Occultation of τ ♌.			
Immersion	2h. 36m. 10s. M.	3′ 51″	North of the centre.
Emersion	3 56 33	5 40	
March 6. Occultation of ξ ♌.			
Immersion	10h. 4m. 36s. A.	3′ 6″	South of the centre.
Emersion	11 30 27	1′ 39″	
March 12th and 13th. Occultation of κ ♍.			
Immersion .	March 12, 11h. 33m. 32s. A.	9′ 51″	South of the centre.
Emersion .	" 13, 0 35 59 M.	8 0	
March 28. Occultation of Aldebaran.			
Immersion	5h. 6m. 12s. A.	4′ 59″	North of the centre.
Emersion	6 19 32	5 23	
April 7. Occultation of ϑ ♍.			
Immersion	8h. 39m. 47s. A.	7′ 51″	South of the centre.
Emersion	9 48 10	6 34	
May 2. Occultation of τ ♌.			
Immersion	9h. 46m. 59s. A.	1′ 48″	South of the centre.
Emersion	11 10 8	0 1	
May 22. Occultation of Aldebaran.			
Immersion	1h. 19m. 49s. A.	5′ 43″	South of the centre.
Emersion	2 30 53	5 51	
June 2. Occultation of κ ♍.			
Immersion	6h. 46m. 21s. A.	11′ 54″	South of the centre.
Emersion	7 41 10	9 58	
July 6. Occultation of d ♐.			
Immersion	3h. 8m. 22s. M.	12′ 18″	South of the centre.
Emersion	3 48 27	13 20	
July 10. Occultation of λ ♒.			
Immersion	0h. 15m. 28s. M.	15′ 15″	North of the centre.
Emersion	0 34 20	15 40	
July 16. Occultation of Aldebaran.			
Immersion	5h. 34m. 0s. M.	13′ 9″	North of the centre.
Emersion	6 21 18	10 33	
August 12. Occultation of γ ♉.			
Immersion	4h. 37m. 10s. M.	0′ 21″	South of the centre.
Emersion	5 53 6	3 51	
August 29. Occultation of d. ♐.			
Immersion	7h. 54m. 6s. A.	11′ 35″	South of the centre.
Emersion	8 53 35	10 50	
September 3. Occultation of φ ♒.			
Immersion	2h. 38m. 59s. M.	4′ 9″	South of the centre.
Emersion	3 43 55	4 59	
October 4. Occultation of f ♉.			
Immersion	9h. 44m. 58s. A.	15′ 0″	South of the centre.
Emersion	10 6 40	15 51	

October 27 & 28. Occultation of φ ♒.

Immersion .	Oct. 27, 11h.	58m.	46s. A.	{	0′	43″	} South of the
Emersion . .	28, 1	2	39 M.	{	1	2	} centre.

November 2. Occultation of γ ♉.

Immersion . . .	5h.	36m.	50s. M.	{	15′	53″	} South of the
Emersion . . .	5	59	27	{	15	10	} centre.

November 19. Occultation of d. ♐.

Immersion . . .	7h.	36m.	2s. A.	{	2′	43″	} North of the
Star sets eclipsed . .	8	1		{			} centre.

November 29. Occultation of Aldebaran.

Immersion . . .	9h.	6m.	59s. A.	{	5′	33″	} North of the
Emersion . . .	10	15	4	{	1	34	} centre.

December 27. Occultation of γ ♉.

Immersion . . .	3h.	24m.	45s. M.	{	11′	31″	} South of the
Emersion . . .	4	6	39	{	9	23	} centre.

The importance of occultations of stars by the moon, in the determination of terrestrial longitude, (the latitude being always very easily ascertained,) has long been known. The longitude deduced from the observed immersion or emersion of a star will be as near the truth, as the result of hundreds of lunar distances, or of a large number of transits of the moon and a star; *but when the lunar tables are relied on*, the longitude, even thus obtained, is liable to some uncertainty, on account of the small error which is sometimes found in them.

For the determination of the longitude, those occultations are most suitable, in which the stars disappear or reappear near the centre of the moon, as the time of either of their phenomena taking place is then less affected by an error (should there be any) in her tabular longitude or latitude; particularly in the latter; the longitude, however, deduced from a corresponding observation of the *same* occultation, made in one of the observatories of Europe, or in any other place, whose geographical position is well determined, will be free not only from error on this account, but from every other but that of observation.

Of the seven occultations of Aldebaran which will be visible this year in some parts of the United States, four (those of Jan. 5, May 22, July 16, and Nov. 29,) will likewise be visible in Europe. An opportunity is thus presented, of ascertaining with very great precision the longitude of many of our cities and points on our coast, at present inaccurately known, which may not again occur for several years.

On another account, the subject of occultations has at all times been an interesting and important one, both to the practical and theoretical astronomer; *viz.* that they frequently present some remarkable phenomena with respect to light, when the edge of the moon comes in contact with the star about to be occulted, the star sometimes appearing to be *projected on the disc of the moon.* This circumstance has lately been very particularly attended to, and numerous instances given by the Astronomical Society of London, who suppose that this appearance is more frequent, (or at least more frequently recorded,) as to Aldebaran, than in the case of any other star, accompanied, however, with anomalies for which it is difficult to account.*

It is therefore hoped that our astronomers will be induced to look out for the occultations of this star, not only with a view to ascertain the longitude of the place of observation, but to determine whether it does not appear projected on the face of the moon; in doing this, particular attention should be paid to the following circumstances.

* See a paper read before the Astronomical Society of London, by Mr. South, the Vice President, Jan. 1829.

1. Whether the star undergoes any change of light, of colour, or of motion, on its immediate approach to the edge of the moon.

2. Whether it appears to be projected on the moon's disc, and if so for how long a time.

3. Whether the dark limb of the moon be distinctly visible, and well defined, at the time of the phenomenon.

4. Whether the star, on its emersion, appears on the moon's disc, or emerges quite clear of the moon's border.

In the occultation of this star, at Boston, August 21 & 22, 1829, the star, at the immersion, did not appear to undergo any change of light, or to be projected on the moon, but was so tremulous, that there was an uncertainty of two seconds in the time of its disappearance; but its emersion was instantaneous.

The elements of the eclipses and of the occultations (with the exception of the places of the stars) were computed from the Berlin *Astronomisches Jahrbuck* for 1830, edited by the celebrated Encke, a work far superior, both as to matter and arrangement, to any thing of the kind hitherto published.

Appulses of the Moon to Stars in 1830, *calculated for Boston*; *all or nearly all of which will be Occultations in some part of the United States.*

Feb. 1, 9h. 50m. A.	app. ♂	☽ & γ ♉.	star 7′	apparently	south of ☽.
April 11, 0h. 12m. M.		☽ & γ ♎.	8		north
April 19, 5h. 6m. M.		☽ & λ ♒.	4½		south
May 27, 7h. 11m. A.		☽ & ξ ♌.	7		south
July 1, 8h. 40m. A.		☽ & γ ♎.	6¾		north
July 15, 2h. 24m. M.		☽ & f ♉.	7		south
Aug. 12, 1h. 49m. A.		☽ & α ♉.	3		north
Oct. 5, 0h. 29m. M.		☽ & α ♉.	1⅓		north
Oct. 14, 4h. 16m. M.		☽ & β ♍.	1⅔		south
Nov. 23, 11h. 29m. A.		☽ & λ ♒.	4½		north

Elements of the preceding Eclipses and Occultations.

Apparent time at Greenwich.

♂ or ♉	Feb. 22. h m. s.	March 9. h. m. s.	March 24. h. m. s.	Aug. 17. h. m. s.	Sept. 2. h. m. s.	Sept. 16. h. m. s.
	16 36 8	1 30 56	2 44 26	23 53 19	10 37 44	14 28 11
	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
☉ & ☽'s long.	334 7 24		3 28 42	144 58 19		173 39 58
☽'s long.		168 31 13			339 53 30	
☽'s h. m. in lon.	37 4.8	29 51.7	37 58.5	31 50.2	36 11.6	30 24.1
☉'s h. m. in lon.	2 30.9	2 29.7	2 28.5	2 24.5	2 25.4	2 26.6
☽'s lat.	n. 1 23 17	s. 4 26	s. 77 37	s. 83 47	n. 2 13	n. 73 9
☽'s h. m. in lat.	— 3 18.3	n. 2 46.1	+ 3 24.2	— 2 49.7	s. 3 21	+ 2 43.8
☽'s equat. par.	60 32.7	54 15.7	61 18.2	55 59.4	59 52.1	54 43.2
☉'s hor. par.	8.7	8.7	8.6	8.5	8.5	8.6
☽'s S. D.	16 29.8	14 47.2	16 42.4	15 15.4	16 18.8	14 54.6
☉'s S. D.	16 11.0	16 7.5	16 3.4	15 50.3	15 53.6	15 57.1
	h. m. s.		h. m. s.	h. m. s.		h. m. s.
☉'s A. R.	22 24 2.4		0 12 45.7	9 49 1.7		11 36 44.5
H. M. in A. R.	9.5	m. s.	9.1	9.3	m. s.	9.0
Equat. of time.	+ 13 45.2	+ 10 50.5	+ 6 29.5	+ 3 40.6	— 0 30.6	— 5 19.1
H. M. of equat.	dec. 0.3	dec. 0.7	dec. 0.8	dec. 0.5	inc. 0.8	inc. 0.9

ELEMENTS OF THE OCCULTATIONS.

	Jan. 5, 15h.	Jan. 15, 17h. 30m	Feb. 9, 20h.	March 6, 15h.
Long. of	α ♉.	☉ ♍.	τ ♌.	ξ ♌.
	67° 25′ 3.7″	195° 51′ 49.4′	169° 8′ 34.3″	139° 17′ 2.1″
Lat. of	α ♉.	☉ ♍.	τ ♌.	ξ ♌.
	s. 5 28 47.2	n. 1° 45′ 12.4″	s. 0° 33′ 18.3″	s. 3° 9′ 41.7″
Long. of ☽.	67 30 56.7	195 30 9.7	169 13 55.3	139 1 49.0
H. M.	34 34.0	29 30.6	29 56.0	30 41.8
Lat. of ☽.	s. 4 53 43.5	n. 2 8 42.3	s. 0 1 5.1	s. 2 40 35.8
H. M.	+ 44.2	+ 2 24.1	— 2 44.6	— 2 27.0
☽'s Eq. Par.	58 17.25	54 12.3	54 23.6	55 2.0
H. Motion.	— 0.90	+ 0.2	— 0.7	— 1.0
☽'s Hor. S. D.	15 53.25	14 46.1	14 49.7	15 0.0
H. Motion.	.25	0.0	— 0.2	— 0.3
	h. m. s.	h. m. s.	h. m. s.	h. m. s.
⊙'s A. R.	19 6 43.5	19 50 35.0	21 34 10.7	23 8 46.9
H. M.	11.0	10.7	9.9	9.3
Equat. of time.	+ 5 57.9	+ 9 59.2	+ 14 34.9	+ 11 27.2
H. M.	inc. 1.1	inc. 0.9	0.0	dec. 0.6

	March 12, 17h.	March 28, 10h.	April 7, 13h.	May 2, 14h. 30m.
Long of	ϰ ♍.	α ♉.	☉ ♍.	τ ♌.
	212° 7′ 34.5″	67° 24′ 47.0″	195° 52′ 15.3″	169° 8′ 38.4″
Lat. of	ϰ ♍.	α ♉.	☉ ♍.	τ ♌.
	n. 2° 55′ 14.0″	s. 5° 28′ 47.5″	n. 1° 45′ 12.4″	s. 0° 33′ 18.9″
Long. of ☽.	211 40 55.5	67 34 8.9	194 46 18.1	168 49 34.3
H. M.	29 34.5	35 32.7	29 31.1	29 39.5
Lat. of ☽.	n. 3 34 29.5	s. 5 9 44.2	n. 2 15 36.4	n. 0 4 1.1
H. M.	+ 2 0.6	+ 39.5	+ 2 25.7	+ 2 39.8
☽'s Eq. Par.	54 2.4	59 10.4	53 55.0	54 16.3
H. Motion.	+ 0.3	— 2.2	0 0	— 0.7
☽'s Hor. S. D.	14 43.4	16 7.2	14 42.0	14 47.3
H. Motion.	+ 0.1	— 0.6	0.0	— 0.2
	h. m. s.	h. m. s.	h. m. s.	h. m. s.
⊙'s A. R.	23 31 10.4	0 28 23.7	1 5 15.2	2 38 43.2
H. M.	9.2	9.1	9.1	9.6
Equat. of time.	+ 9 51.8	+ 5 10.1	+ 2 7.0	— 3 12.6
H. M.	dec. 0.7	dec. 0.8	dec. 0.7	inc. 0.3

	May 22, 6h.	June 2, 12h.	July 5, 20h.	July 9, 17h.
Long. of	α ♉.	ϰ ♍.	d ♐.	λ ♒.
	67° 24′ 43.4″	212° 7′ 43.6″	285° 59′ 12.9″	339° 12′ 38.7″
Lat. of	α ♉.	ϰ ♍.	d ♐.	λ ♒.
	s. 5° 28′ 45.5″	n. 2° 55′ 15.3″	n. 3° 16′ 53.5″	s. 0° 22′ 54.1″
Long. of ☽.	67 18 51.4	211 34 47.0	286 30 31.2	338 56 13.3
H. M.	37 1.0	29 43.0	32 51.6	34 36.9
Lat. of ☽.	s. 4 58 14.3	n. 3 37 51.0	n. 4 10 49.3	n. 0 13 57.5
H. M.	+ 29.0	+ 1 48.1	— 1 39.2	— 3 5.8
☽'s Equat. Par.	60 18,1	54 4.6	56 48.9	58 37.5
H. M.	— 1.4	+ 0.4	+ 1.4	+ 0.8
☽'s Hor. S. D.	16 25.9	14 45.5	15 29.0	15 58.5
H. M.	— 0.4	+ 0.1	+ 0.4	+ 0.2
	h. m. s.	h. m s.	h. m. s.	h. m. s.
⊙'s A. R.	3 55 43.0	4 41 22 1	6 59 24.7	7 15 18.2
H. M.	10.0	10.3	10.3	10.2
Equat. of time.	— 3 40.2	— 2 22.6	+ 4 13.7	+ 4 50.4
H. M.	dec. 0.4	dec. 0.4	inc. 0.4	inc. 0.4

	July 15, 22h.	Aug. 11, 22h.	Aug. 29, 13h.	Sept. 2, 20h.
Long. of	α ♉.	γ ♉.	d ♐.	φ ♒.
	67° 24′ 57.2″	63° 25′ 56.2″	285° 59′ 12.9″	344° 46′ 44.3″
Lat. of	α ♉.	γ ♉.	d ♐.	φ ♒.
	s. 5° 28′ 44.4″	s. 5° 44′ 57.6″	n. 3° 16′ 54.4″	s. 1° 2′ 16.3″
Long. of ☽.	66 39 53.8	63 17 8.7	285 58 59.9	345 33 40.4
H. M.	35 33.0	35 4.5	32 41.1	36 24.6
Lat. of ☽.	s. 5 6 39.7	s. 5 12 34.1	n. 4 17 55.4	s. 0 29 13.7
H. M.	+ 15.5	+ 23.9	— 1 45.3	+ 3 21.4
☽'s Equat. Par.	59 6.2	58 48.6	56 51.3	60 3.5
H. M.	— 0.6	— 0.9	+ 2.1	+ 1.1
☽'s Hor. S. D.	16 6.4	16 1.6	15 29.6	16 22.0
H. M.	— 0.2	— 0.2	+ 0.6	+ 0.3
	h. m. s.	h. m. s.	h. m. s.	h. m. s.
☉'s A. R.	7 40 32.9	9 26 12.3	10 31 33.6	10 47 8.9
H. M.	10.1	9.5	9.1	9.1
Equat. of time.	+ 5 36.4	+ 4 48.9	+ 0 41.7	— 0 38.0
H. M.	inc. 0.3	dec. 0.4	dec. 0.7	inc. 0.8

	Oct. 4, 15h.	Oct. 5, 18h.	Oct. 27, 17h.	Nov. 1, 23h.
Long. of	f ♉.	α ♉.	φ ♒.	γ ♉.
	51° 13′ 45.0″	67° 25′ 31.7″	344° 46′ 42.1″	63° 26′ 25.6″
Lat. of	f ♉.	α ♉.	φ ♒.	γ ♉.
	s. 5° 55′ 56.9″	s. 5° 28′ 44.4″	s. 1° 2′ 16.5″	s. 5° 44′ 58.9″
Long. of ☽.	50 46 50.8	67 23 24.2	345 18 32 6	64 21 23.0
H. M.	37 19.7	36 26.2	35 41.8	37 50.7
Lat. of ☽.	s. 4 55 10.6	s. 5 12 1.5	s. 0 34 49.6	s. 5 3 15.5
H. M.	+ 1 6.3	+ 8.6	+ 3 10.1	+ 14.8
☽'s Equat. Par.	60 42.0	60 0.5	59 29.6	60 59.4
H. M.	— 1.2	— 1.8	+ 2.3	— 1.3
☽'s Hor. S. D.	16 32.4	16 21.1	16 12.7	16 37.2
H. M.	— 0.3	— 0.5	+ 0.6	— 0.4
	h. m. s.	h. m. s.	h. m. s.	h. m. s.
☉'s A. R.	12 41 44.3	12 45 50.4	14 8 4.2	14 28 30.8
H. M,	9.1	9.1	9.6	9.8
Equat. of time.	— 11 21.1	— 11 41.2	— 16 1.0	— 16 16.2
H. M.	inc. 0.8	inc. 0.7	inc. 0.2	0.0

	Nov. 19, 12h.	Nov. 29, 15h.	Dec. 26, 20h.
Long. of	d ♐.	α ♉.	γ ♉.
	285° 58′ 55.1″	67° 25′ 47.0″	63° 26′ 31.7″
Lat. of	d ♐.	α ♉.	γ ♉.
	n. 3° 16′ 54.3″	s. 5° 28′ 45.9″	s. 5° 44′ 59.8″
Long. of ☽.	286 8 6.0	67 21 37.0	64 0 44.4
H. M.	30 54.8	38 3.6	37 15.5″
Lat. of ☽.	n. 3 51 8.0	s. 4 59 53.4	s. 5 4 32.3
H. M.	+ 1 44.7	— 5.7	— 5.5
☽'s Equat. Par.	55 15.4	61 4.1	60 27.6
H. M.	+ 1.2	— 0.6	+ 0.1
☽'s Hor. S. D.	15 3.4	16 38.5	16 28.5
H. M.	+ 0.3	— 0.2	0.0
	h. m. s.	h. m. s.	h. m. s.
☉'s A. R.	15 39 36.9	16 22 33.4	18 22 22.2
H. M.	10.4	10.8	11.1
Equat. of time.	— 14 20.0	— 11 19.2	+ 1 11 4
H. M.	dec. 0.6	dec. 0.9	inc. 1.2

In the computation of the preceding eclipses of the sun and occultations, the ellipticity of the earth was assumed to be one three-hundredth, and the semidiameter of the sun was diminished $3\frac{1}{2}''$ for irradiation, and that of the moon $2''$ for inflexion, according to the theory of Dusejour.

The elements are given in *apparent* time for the meridian of Greenwich, reckoned according to the manner of astronomers from noon to noon. When *apparent* is to be converted into *mean* time, the equation of time must be applied with the sign prefixed to it, but when *mean* time is to be reduced to *apparent*, the sign of the equation must be reversed.

No sign is prefixed to the hourly motion of the moon in longitude, or of the sun in right ascension (A R), as they are always additive.

In the computation of an eclipse of the sun, or of an occultation, for any place, the latitude of the place and the moon's equatorial parallax must be *reduced* for the ellipticity of the earth, which is generally supposed to be one three-hundredth; these reductions will be found in the 38th table of the "New American Practical Navigator," or they may be computed by the following formulæ.

Let L be the latitude and R the reduction of the latitude, then log. cotang. $(L - R) = 0{,}0029001 +$ log. cotang. L. The reduction of equatorial parallax, (57′ for example,) may be found thus, $5.7'' - 5.7''$ cos. 2 L.

ECLIPSES OF THE SATELLITES OF JUPITER IN 1830,

Visible in the United States; the phases of which are expressed in mean *solar time for the meridian of Washington (5h. 7m. 42s. west of Greenwich), reckoned, according to the manner of Astronomers, from noon to noon.*

	d.	h.	m.	s.	Sat.			d.	h.	m.	s.	Sat.	
Jan.	15	17	49	47	1	Im.	May	12	13	2	30	1	Im.
"	17	16	59	41	2	"	"	14	12	33	21	3	"
"	31	16	5	21	1	"	"	14	15	41	12	3	Em.
Feb.	7	17	58	51	1	"	"	18	12	50	43	2	Im.
"	17	15	52	15	3	Em.	"	19	14	56	20	1	"
"	18	16	40	40	2	Im.	"	21	16	31	41	3	"
"	23	16	14	4	1	"	"	25	15	24	28	2	"
"	24	16	52	27	3	"	"	26	16	50	15	1	"
"	24	19	51	16	3	Em.	"	28	11	18	48	1	"
March	2	18	7	29	1	Im.	"	31	12	40	46	4	"
"	11	14	29	15	1	"	"	31	14	59	3	4	Em.
"	18	16	22	38	1	"	June	4	13	12	52	1	Im.
"	22	16	18	23	2	"	"	11	15	7	3	1	"
"	25	14	17	48	4	Em.	"	12	9	48	52	2	"
"	25	18	16	2	1	Im.	"	13	9	35	35	1	"
April	1	15	46	1	3	Em.	"	17	9	8	16	4	Em.
"	3	14	37	47	1	Im.	"	19	11	39	54	3	"
"	8	16	41	18	3	"	"	19	12	22	43	2	Im.
"	10	16	31	14	1	Im.	"	20	11	29	56	1	"
"	16	13	18	17	2	"	"	26	12	27	27	3	"
"	17	18	24	45	1	"	"	26	14	56	38	2	"
"	23	15	52	19	2	"	"	26	15	39	51	3	Em.
"	26	14	46	44	1	"	"	27	13	24	24	1	Im.
"	30	18	26	14	2	"	July	3	16	26	33	3	"
May	3	16	40	23	1	"	"	3	17	30	42	2	"
"	5	11	8	46	1	"	"	6	12	1	43	1	Em.
"	7	11	42	14	3	Em.	"	7	9	27	7	2	"

	d.	h.	m.	s.	Sat.	
July	13	13	56	34	1	Em.
"	14	12	1	37	2	"
"	15	8	25	16	1	"
"	20	15	51	32	1	"
"	21	14	36	17	2	"
"	22	10	20	15	1	"
"	25	7	40	55	3	"
"	27	17	46	36	1	"
"	28	17	11	9	2	"
"	29	12	15	22	1	"
Aug.	1	8	26	14	3	Im.
"	1	11	42	13	3	Em.
"	5	14	10	32	1	"
"	6	12	37	52	4	Im.
"	7	8	39	23	1	Em.
"	8	9	3	42	2	"
"	8	12	26	19	3	Im.
"	14	10	34	41	1	Em.
"	15	11	39	0	2	"
"	21	12	30	3	1	"
"	22	14	14	29	2	"
"	23	6	40	24	4	Im.
"	23	9	50	14	4	Em.
"	28	14	25	29	1	"
"	30	8	54	18	1	"
Sept.	2	6	8	5	2	"
"	6	7	46	20	3	"
"	6	10	49	47	1	"
"	9	8	44	1	2	"
"	13	8	27	41	3	Im.
"	13	11	47	30	3	Em.
"	13	12	45	16	1	"
Sept.	15	7	14	11	1	Em.
"	16	11	20	8	1	"
"	20	12	28	47	3	Im.
"	22	9	9	41	1	Em.
"	29	11	5	10	1	"
Oct.	1	5	34	0	1	"
"	4	5	51	18	2	"
"	8	7	29	28	1	"
"	11	8	28	1	2	"
"	15	9	24	53	1	"
"	18	11	4	56	2	"
"	19	4	30	11	3	Im.
"	19	7	52	54	3	Em.
"	22	11	20	15	1	"
"	24	5	49	7	1	"
"	26	8	30	57	3	Im.
"	29	6	55	51	4	"
"	31	7	44	26	1	Em.
Nov.	5	5	37	33	2	"
"	7	9	39	39	1	"
"	12	8	14	54	2	"
"	14	11	34	48	1	"
"	15	4	48	16	3	"
"	16	6	3	33	1	"
"	19	10	52	20	2	"
"	23	7	58	36	1	"
"	30	9	53	33	1	"
Dec.	1	4	32	59	3	Im.
"	2	4	22	18	1	Em.
"	7	5	26	42	2	"
"	9	6	17	9	1	"

The eclipses *before* the opposition of Jupiter on the 5th of July, will take place on the *west* side of the planet, and afterwards on the *east*. The immersions only, of the 1st and 2d satellites will be visible before the opposition, and the emersions only, after; but *both* the phenomena of the same eclipse, of the two outer satellites, can sometimes be seen.

The eclipses take place farthest from the body of Jupiter, when he is in quadrature, and nearest when in opposition or conjunction; but for some weeks before and after he is in the latter position, the eclipses cannot be observed; the planet and his satellites being lost in the rays of the Sun.

Eclipses of these satellites, particularly of the first and second, are very useful in determining, to a very considerable degree of accuracy, the longitude of any place; which, although not so exact as that obtained by an observed occultation of a star by the moon, is deduced without the long and fatiguing calculation necessary, in obtaining it by the latter method; they have likewise the additional advantage of being of very frequent occurrence.

To determine the time at which either of the preceding eclipses will take place, on any other *meridian* than that of Washington, it is necessary, merely to add *four* minutes for every degree of longitude *less* than 76° 55′ 30″, and *subtract* the same quantity for every degree *greater*. For Boston, *add* 23m. 25s.; for New York, 11m. 38s. For Charleston, *subtract* 11m. 30s.; for Cincinnati, 30m. 6s.; for New Orleans, 52m. 54s.

Position and Magnitude of the Rings of Saturn, according to Bessel and Struve, for every fortieth day in the year.

Jan 1.	— 7° 25′	— 14° 38′	46.00″	— 11.62″
Feb. 9.	— 7 33	— 15 57	46.96	— 12.91
March 21.	— 7 40	— 17 2	45.26	— 13.25
April 30.	— 7 40	— 17 4	42.22	— 12.40
June 9.	— 7 34	— 16 2	39.49	— 10.90
July 19.	— 7 22	— 14 12	37.90	— 9.30
Aug. 28.	— 7 5	— 12 2	37.67	— 7.86
Oct. 7.	— 6 48	— 10 1	38.87	— 6.76
Nov. 16.	— 6 36	— 8 44	41.32	— 6.27
Dec. 26.	— 6 34	— 8 40	44.34	— 6.68
	p.	*l.*	*a.*	*b.*

p. Angle between the semiconjugate axis of the ring ellipse, with the circle of declination; positive when east, negative when west.

l. Angle of elevation of the earth, above the plane of the ring, as seen from Saturn, positive when north, negative when south.

a. Semitransverse axis of the ring ellipse.

b. Semiconjugate axis; positive, when the northern surface of the rings is visible; negative, when the southern.

It has lately been ascertained, that the planet is not exactly in the centre of the rings.

The planet Mercury will be visible in the evening until the 11th of February, then in the morning to the 22d of April, then in the evening to the 15th of June, then in the morning to the 4th of August, then in the evening to the 12th of October, then in the morning to the 3d of December, then in the evening.

It is with difficulty that this planet can be seen in any other position, except when at or near its greatest elongation from the Sun, which this year happen January 27th (elongation 18° 24′), March 10th (27° 30′), May 21st (22° 32′) July 8th (26° 29′), Sept. 17th (26° 29′), and Oct. 28th (18° 37′); but the following periods will be most favorable for observing it, this year, as during them it will not only be at its greatest distance from the Sun, but will be nearer the elevated pole, and consequently, will remain longer above the horizon.

From Jan. 16th to Feb. 4th, in the evening after sunset, bearing W. 15° S.
" May 1st " June 4th, in the morning before sunrise, " E. 23 N.
" Oct. 19th " Nov. 7th, " " " " E. 6 S.

The planet Venus will be visible in the evening to the 7th of March, then in the morning to the 20th of December, then in the evening; its greatest *western* elongation (45° 59′) will take place on the 16th of May; but it will be the brightest, as evening star, on the 13th of January, and as morning star, on the 25th of April.

The planet Mars will be visible in the morning to the 19th of September, then in the evening to the end of the year.

The planet Vesta will be visible in the morning to the 8th of October, then in the evening.

The planet Pallas will be visible in the morning to the 27th of April, then in the evening.

The planet Juno will be visible in the morning to August 25th, then in the evening.

The planet Ceres will be visible in the morning till the 30th of April, then in the evening.

The planet Jupiter will be visible in the morning till July 5th, then in the evening.

The planet Saturn will be visible in the morning till the 3d of February, then in the evening to the 14th of August, then in the morning to the end of the year.

The planet Uranus or Herschel will be visible in the evening till the 26th of January, then in the morning to August 1st, then in the evening to the end of the year.

The superior planets, or all but Mercury and Venus, will appear brightest when nearest to the earth, that is, when in opposition to the sun.

HEIGHT OF THE GREATEST OR SPRING TIDES IN 1830,

Computed by the formula of La Place (*Mécanique Céleste, vol. II. p.* 289.)

New or Full Moon.					Height of the Tide.	New or Full Moon.					Height of the Tide.
Full	M.	Jan.	8th,	10h. a.	0.88	Full	M.	July	5th,	9h. a.	0.85
New	‘	‘	24	11 m.	0.99	New	‘	‘	19	7 a.	0.89
Full	‘	Feb.	7	2 a.	0.88	Full	‘	Aug.	4	8 m.	0.94
New	‘	‘	22	11 a.	1.11	New	‘	‘	18	7 m.	0.89
Full	‘	March	9	8 m.	0.88	Full	‘	Sept.	2	6 a.	1.04
New	‘	‘	24	9 m.	1.12	New	‘	‘	16	10 a.	0,89
Full	‘	April	8	2 m.	0.86	Full	‘	Oct.	2	3 m.	1.14
New	‘	‘	22	6 a.	1.08	New	‘	‘	16	3 a.	0.86
Full	‘	May	7	7 a.	0.83	Full	‘	‘	31	0 a.	1.13
New	‘	‘	22	2 m.	0.99	New	‘	Nov.	15	9 m.	0.83
Full	‘	June	6	9 m.	0.81	Full	‘	‘	29	10 a.	1.05
New	‘	‘	20	10 m.	0.94	New	‘	Dec.	15	3 m.	0.82
						Full	‘	‘	29	9 m.	0.98

The *unit of altitude*, is the altitude of the tide which happens about a day and a half after the time of new or full moon; at the moment of new or full moon the sun and moon being at their mean distance from the earth, and in the plane of the equator.

The unit of altitude of any place, multiplied by the numbers in the preceding Table, will give the height of the tide at that place.

The unit of altitude at Boston, Salem, Marblehead, and Cape Ann, is $11\frac{1}{4}$ feet.

At New York, St. Augustine, Block Island, Elizabeth Town Point, Florida Keys, Hillsborough Inlet, Nantucket Shoal and Town, New Bedford, Rhode Island, and Sandy Hook, 5 feet.

At Charleston, S. C., Monomoy Point, Port Hood, Prince Edward's Islands, St. Simon's Bar, and St. Simon's Sound, 6 feet. These, multiplied by the numbers in the preceding table, give the following, as the heights of the greatest tides, this year, in those places.

Tide of	Boston, &c.	N. York, &c.	Charleston, &c.	Tide of	Boston, &c.	N. York, &c.	Charleston, &c.
	ft. in.	ft. in.	ft. in.		ft. in.	ft. in.	ft. in.
Jan. 9	9 11	4 5	5 3	April 9	9 8	4 4	5 2
‘ 25	11 2	4 11	5 11	‘ 23	12 2	5 5	6 6
Feb. 8	9 11	4 5	5 3	May 8	9 4	4 2	4 11
‘ 23	12 6	5 7	6 8	‘ 23	11 2	4 11	5 11
March 10	9 11	4 5	5 3	June 7	9 1	4 1	4 10
‘ 25	12 7	5 7	6 9	‘ 21	10 7	4 8	5 8

Tide of	Boston, &c.	N. York, &c.	Charleston, &c.
	ft. in.	ft. in.	ft. in.
July 6	9 7	4 3	5 1
‘ 20	10 0	4 5	5 4
Aug. 5	10 7	4 8	5 8
‘ 19	10 0	4 5	5 4
Sept. 3	11 8	5 2	6 3
‘ 17	10 0	4 5	5 4
Oct. 3	12 10	5 8	6 11
Oct. 17	9 8	4 4	5 2
Nov. 1	12 9	5 8	6 10
‘ 16	9 4	4 2	4 11
Dec. 1	11 10	5 3	6 4
‘ 16	9 3	4 1	4 11
‘ 30	11 0	4 11	5 11

It appears by the preceding Table, that the tides of February 23d, March 25th, October 3d, and November 1st, will be the greatest of all in 1830, but the positions of the Sun and Moon will not be so favorable this year as the last, for producing a great elevation of the sea; the height of the tides, however, depends so much on the strength and direction of the wind, that it not unfrequently happens that a tide, which would, independently of this, have been small, is higher than one in other respects much greater.

The following Table contains the unit of altitude of several ports and places on our coast, from the best authorities. The height of the enormous tides in the Bay of Fundy was ascertained from actual observation by a gentleman of Boston, in the summers of 1828 and 1829.

Advocate Harbour (Bay of Fundy)	50 feet.	Elizabeth Isles	9 feet.
Andrews, St.	25 ‘	Elizabeth Town Point	5 ‘
Annapolis (Bay of Fundy)	35 ‘	Florida Keys	5 ‘
Apple River	32 ‘	Gay Head	7 ‘
Augustine, St.	5 ‘	George's River	9 ‘
Basin of Mines (Bay of Fundy)	60 ‘	Georgetown Bar	4 ‘
Bay, Bristed	8 ‘	Goldsborough	12 ‘
‘ Broad	9 ‘	Green Islands	16 ‘
‘ Casco	9 ‘	Gut of Annapolis	28 ‘
‘ Chignecto (north part of Bay of Fundy)	60 ‘	Gut of Cansor	8 ‘
‘ St. Mary's	16 ‘	Halifax	8 ‘
‘ Vert	9 ‘	Hillsborough Inlet	5 ‘
Beaver Harbour	7 ‘	John's, St. (N. B.)	30 ‘
Bell Island Straits	30 ‘	‘ St. (N. F.)	7 ‘
Block Island	5 ‘	Kennebec	9 ‘
Cape Ann	11 ‘	Kennebunk	9 ‘
‘ Blomidom (Bay of Fu.)	55 ‘	Louisburg	5½ ‘
‘ Chat	13 ‘	Machias	12 ‘
‘ Cod	6½ ‘	Marblehead	11 ‘
‘ Henlopen	5 ‘	Mary's, St., Bar	7 ‘
‘ Henry	4½ ‘	Monomoy Point	6 ‘
‘ Look Out	9 ‘	Moose River (Bay of Fundy)	35 ‘
‘ May	6 ‘	‘ Island	25 ‘
‘ St. Mary	14 ‘	Mount Desert	12 ‘
‘ Sable	9 ‘	Mouths of the Mississippi	1½ ‘
‘ Split (Bay of Fundy)	49 ‘	Nantucket (Shoal and Town)	5 ‘
Charleston (S. C.)	6 ‘	Nassau (N. P.)	7 ‘
Cumberland (Basin Fort), head of the Bay of Fundy	71 ‘	New Bedford	5 ‘
Digby (Bay of Fundy)	35 ‘	Newburyport	10 ‘
Eastport	25 ‘	New Haven	8 ‘
		New York	5 ‘
		Partridge Island (Bay of Fu.)	55 ‘
		Passamaquoddy River	25 ‘
		Penobscot River	10 ‘

Plymouth	6½ feet.	Sandy Hook	5 feet.
Portland	9 ‘	Seven Isles Harbour	31 ‘
Port Homer	8 ‘	Sheepscut River	9 ‘
‘ Hood	6 ‘	Shubenacadie River (Bay of Fundy)	70 ‘
‘ Jackson	8 ‘	Simon's, St., Bar	6 ‘
‘ Roseway	8 ‘	‘ ‘ Sound	6 ‘
Portsmouth (N. H.)	10 ‘	Touro (Bay of Fundy)	70 ‘
Prince Edward's Islands	6 ‘	Townsend Harbour	9 ‘
Rhode Island Harbour	5 ‘	Windsor (Bay of Fundy)	55 ‘
Salem (Ms.)	11 ‘		
Sandwich Bay	8 ‘		

TIDE TABLE.

The following Table contains the difference between the time of high water at Boston, and at a large number of places on the American coast, by which the time at any of them may be easily ascertained, by *subtracting* the difference at the place in question from the time at Boston, when the sign — is prefixed to it, and by *adding* it, when the sign is +.

The time of high water in the calendar pages, is of that tide immediately *preceding* the southing of the moon.

	h.	m.		h.	m.
Albany	+ 4	12	Eastport	0	0
Andrews, St.	0	0	Elizabeth Town Point	— 2	36
Annapolis	— 0	30	Florida Key	— 2	40
Augustine, St.	— 4	0	Fort St. John	— 2	30
Bay, Bristed	— 3	45	Fryingpan Shoals	— 5	0
‘ Broad	— 0	45	Gay Head	— 3	53
‘ Casco	— 0	45	Georgetown Bar	— 4	30
‘ Chebucto	— 4	0	Gouldsborough	— 0	30
‘ St. Genevieve, and ‘ St. Barbe	0	0	Gut of Annapolis	— 1	30
‘ Narraganset	— 3	53	Gut of Cansor	— 3	30
‘ Pistolet	— 4	45	Halifax	— 4	0
‘ St. Mary's	— 2	0	Hampton Roads	— 2	53
‘ Sandwich	— 2	30	Harbour, Amelia	— 3	0
‘ Schecatica	— 0	30	‘ Beaver	— 2	45
Bermuda Inlet	— 4	30	‘ Nantucket	+ 0	30
Cape Ann	0	0	‘ Rhode Island	— 4	45
‘ Cansor	— 3	0	‘ Seven Isles	— 0	30
‘ Charles	— 3	45	‘ Townsend	— 0	45
‘ Chat	+ 0	30	Hillsborough Inlet	— 4	0
‘ Churchill	— 4	10	Ice Cove	— 1	30
‘ Cod	0	0	Island, Anticosti, W. end	+ 4	0
‘ Fear	— 3	30	‘ Bell, Straits of	— 2	15
‘ Hatteras	— 2	30	‘ Block	— 3	53
‘ Henlopen	— 2	45	‘ Button	— 4	40
‘ Henry	— 3	50	‘ Elizabeth	— 1	38
‘ Lookout	— 2	30	‘ Fox	— 0	45
‘ St. Mary	— 2	30	‘ Green	— 2	30
‘ May	— 2	45	‘ Moose	0	0
‘ Roman	— 3	30	‘ Prince Edward	— 1	0
‘ Sable (N. S.)	— 3	30	‘ Rhode	— 4	45
‘ Split	— 0	15	‘ Sable	— 3	0
CHARLESTON	— 4	15	‘ Seal	— 2	45
Cumberland (Basin Fort)	+ 0	30	Janeiro, Rio	+ 5	0
			John's, St. (N. B.)	+ 0	30

	h.	m.
John's St. (N. F.)	— 5	0
Kennebec	— 0	45
Kennebunk	— 0	15
Louisburg	— 4	15
Machias	— 0	30
Mary's, St., Bar	— 4	0
Martha's Vineyard	— 3	53
Marblehead	0	0
Monomoy Point	0	0
Mount Desert	— 0	30
Nantucket (town)	+ 0	30
" (shoal)	+ 0	44
Nassau (N. P.)	— 4	0
New Bedford	— 3	53
Newburyport	— 0	15
New Haven	— 1	14
New London	— 2	36
New York	— 2	36
Nootka Sound	+ 0	50
Ocracock Inlet	— 2	30
Philadelphia	+ 2	57
Plymouth	0	0
Portland	— 0	45
Portsmouth (N. H.)	— 0	15
Port Campbell	— 2	30
Port Hood	— 4	0
' Howe	— 3	0
' Jackson	— 3	30
' Roseway	— 3	15
' Royal	— 4	15
Providence	— 2	48
Quebec	— 5	30
Race Point	— 0	45
River, Apple	— 0	30
' St. Croix	0	0
' Delaware entrance	— 2	30
' George's	— 0	45
' Penobscot	— 0	45
' Sheepscut	— 0	45
Salem	0	0
Salvador, St.	+ 4	15
Sandy Hook	— 4	53
Savannah	— 3	15
St. Simon's Bar	— 4	0
" Offing	— 4	45
" Sound	— 2	30
Sunbury	— 2	0
Tarpaulin Cove	— 1	38
Vineyard Sound	— 0	30
Windsor	+ 0	30

LATITUDE AND LONGITUDE OF SOME OF THE PRINCIPAL PLACES IN THE UNITED STATES, WITH THEIR DISTANCE FROM THE CITY OF WASHINGTON.

The Longitudes are reckoned from Greenwich.

The Capitals (seats of Government) of the States and Territories are designated by Italic Letters.

		Latitude.	Longitude, in degrees.	Longitude, in time.	Dist. from Washington.
		° ′ ″	° ′ ″	h. m. s.	
Albany,	N. Y.	42 39 0 N.	73 42 0 W.	4 54 48.0	366 miles.
Alexandria,	D. C.	38 49	77 4	5 8 16	6
Annapolis,	Md.	39 0	76 43	5 6 52	40
Arkansas,	Ark.	33 58	91 30	6 6 0	1470
Arkopolis,	Ark.	34 34	92 10	6 8 40	1237
Augusta,	Ga.	33 19	80 46	5 23 4	589
Augusta,	Me.	44 16	69 44	4 38 56	612
Augustine, St.	Fa.	29 45	81 30	5 26 00	880
Baltimore City,	Md.	39 23	76 40	5 6 40	37
Baton Rouge,	La.	30 36	91 15	6 5 0	1356
Beaufort,	S. C.	32 28	80 33	5 22 12	630
Blakely,	Ala.	30 43	88 3	5 52 12	1100
Boston City,	Ms.	42 20 59	71 4 9	4 44 16.6	436
Brattleborough,	Vt.	42 52	72 27	4 49 48.0	427
Burlington,	Vt.	44 28	73 15	4 53 0	501
Cahawba	Ala.	32 20	87 7	5 48 28	950
Cambridge,	Ms.	42 21 59	71 7 25	4 44 29.7	435

		Latitude.	Longitude, in degrees.	Longitude, in time.	Dist. from Washington.
		° ′ ″	° ′ ″	h. m. s.	
Camden,	S. C.	34 17 00	80 33 00	5 22 12.0	471 miles.
Charles, St.	M'ri.	38 47	89 45	5 59 0	915
Charleston City,	S. C.	32 50	79 48	5 19 12	553
Chillicothe,	Ohio.	39 18	82 56	5 31 44	407
Cincinnati,	Ohio.	39 6	84 27	5 37 48	504
Columbia,	S. C.	33 57	81 7	5 24 28	507
Columbia River, mouth of.		46 19	123 54	8 15 36	
Columbus,	Ohio.	39 47	83 3	5 32 12	418
Concord,	N. H.	43 12	71 29	4 45 56	505
Detroit,	Mich.	42 24	82 58	5 31 52	566
Dover,	Del.	39 10	75 30	5 2 0	135
Dover,	N. H.	43 13	70 54	4 43 36	507
Eastport (most eastern point of U. S.)	Me.	44 54	66 56	4 27 44	808
Edenton,	N. C.	36 0	77 7	5 28 28	289
Edwardsville,	Il.	38 50	89 55	5 59 40	886
Exeter,	N. H.	42 58	70 55	4 43 40	483
Frankfort,	Ky.	38 14	84 40	5 38 40	565
Franklin,	M'ri.	38 57	92 54	6 11 36	1069
Georgetown,	D. C.	38 54	76 59	5 7 56	3
Georgetown,	S. C.	32 22	79 29	5 17 56	482
Hagerstown,	Md.	39 37	77 35	5 10 20	69
Halifax,	N. S.	44 44	63 28	4 13 52	936
Harrisburg,	Pa.	40 16	76 50	5 7 20	110
Hartford,	Ct.	41 46	72 50	4 51 20	338
Hudson,	N. Y.	42 14	73 46	4 55 4	336
Huntsville,	Ala.	34 36	86 57	5 47 48	749
Indianapolis,	Ind.	39 55	86 5	5 44 20	630
Jackson,	M'pi.	32 23	90 8	6 0 32	
Jefferson,	M'ri.	38 36	92 8	6 8 32	1019
Kaskaskia,	Il.	37 58	89 50	5 59 20	898
Lancaster,	Pa.	40 3	76 10	5 4 40	108
Lexington,	Ky.	38 16	85 8	5 40 32	552
Louis, St.	M'ri.	38 36	89 36	5 58 24	897
Louisville,	Ky.	38 3	85 30	5 42 0	617
Mary's, St.	Ga.	30 43	81 43	5 26 52	790
Middletown,	Ct.	41 34	72 39	4 50 36	330
Milledgeville,	Ga.	32 55	83 10	5 32 40	675
Mobile,	Ala.	30 40	88 11	5 52 44	1086
Montpelier,	Vt.	44 17	72 36	4 50 24	524
Montreal,	L. C.	45 31	73 35	4 54 20	565
Murfreesboro'	Ten.	35 53	86 37	5 46 28	708
Nantucket,	Ms.	41 17	70 8	4 40 32	531
Nashville,	Ten.	35 45	87 8	5 48 32	727
Natchez,	M'pi.	31 34	91 25	6 5 40	1268
Natchitoches,	La.	31 46	93 10	6 12 40	1448
Newbern,	N. C.	35 20	77 5	5 8 20	351
Newburyport,	Ms.	42 49	70 52	4 43 28	475
Newcastle,	Del.	39 43	75 35	5 2 20	113
New Haven,	Ct.	41 18	72 58	4 51 52	304
New Orleans City,	La.	29 57	90 9	6 0 36	1260
Newport,	R. I.	41 25	71 14	4 44 56	419
New York City,	N. Y.	40 42 40	74 1	4 56 4	227
Norfolk,	Va.	37 12	76 42	5 6 48	229

		Latitude.	Longitude, in degrees.	Longitude, in time.	Dist. from Washington.
		° ′ ″	° ′ ″	h. m. s.	
Northampton,	Ms.	42 16 00	72 40 00	4 50 40	385
Pensacola,	Fa.	30 28	87 12	5 48 48	900
Philadelphia City,	Pa.	39 56 55	75 11 30	5 0 46	136
Pittsburg,	Pa.	40 32	80 8	5 20 32	225
Plymouth,	Ms.	41 58	70 30	4 42 0	454
Portland,	Me.	43 39	70 20	4 41 20	554
Portsmouth,	N. H.	43 4	70 45	4 43 0	500
Princeton,	N. J.	40 22	74 35	4 58 20	178
Providence,	R. I.	41 51	71 16	4 45 4	416
Quebec,	L. C.	46 47 30	71 9 45	4 44 39	740
Raleigh,	N. C.	35 47	78 48	5 15 12	288
Richmond City,	Va.	37 30	77 58	5 11 52	123
Rochester,	N. Y.	43 15	77 51	5 11 24	395
Sable (Cape) S. cape of U. S.	Fa.	24 50	81 15	5 25 0	
Sackett's Harbour	N. Y.	43 55	75 57	5 3 48	473
Salem,	Ms.	42 32	70 52	4 43 28	451
Savannah,	Ga.	32 2	81 3	5 24 12	658
Schenectady,	N. Y.	42 48	73 55	4 55 40	377
Shawneetown,	Il.	37 22	88 6	5 52 24	779
Springfield,	Ms.	42 6	72 36	4 50 24	363
Stephen's, St.	Ala.	31 33	88 3	5 52 12	1010
Tallahassee,	Fa.	30 28	84 36	5 38 24	870
Taunton,	Ms.	41 54	71 7	4 44 28	430
Trenton,	N. J.	40 13	75 48	5 3 12	167
Troy,	N. Y.	42 44	73 40	4 54 40	372
Tuscaloosa,	Ala.	33 12	87 42	5 50 48	900
Vandalia,	Il.	38 50	89 2	5 56 8	808
Vevay,	Ind.	38 43	82 2	5 28 8	562
Vincennes,	Ind.	40 39	88 23	5 53 32	726
WASHINGTON City,	D. C.	38 53	76 55 30	5 7 42	
Washington,	M'pi.	31 36	91 20	6 5 20	1262
Wilmington,	Del.	39 43	77 34	5 10 16	110
Wilmington,	N. C.	34 11	78 10	5 12 40	433
Worcester,	Ms.	42 16	71 49	4 47 16	396
York,	U. C.	43 33	79 20	5 17 20	500
Zanesville,	Ohio.	39 59	82 10	5 28 40	345

Length of the Longest and Shortest Days in some of the principal Cities of the United States.

	L. D. h. m.	S. D. h. m.		L. D. h. m.	S. D. h. m.
North part of U. S.	16 53.5	7 6.5	Washington,	14 43.8	9 16.2
Portland,	15 15.7	8 44.3	Richmond,	14 35.5	9 24.5
Portsmouth, N. H.	15 11.5	8 48.5	Raleigh & Nashville	14 18.6	9 41.4
Boston and Detroit	15 6.4	8 53.6	Charleston,	14 10.2	9 49.8
Providence,	15 3.0	8 57.0	Savannah,	14 5.8	9 54.2
New York,	14 55.5	9 4.5	New Orleans,	13 55.8	10 4.2
Philadelphia,	14 50.5	9 9.5	St. Augustine,	13 54.9	10 5.1
Baltimore,	14 46.8	9 13.2	Cape Sable, south point of U. S.	13 32.1	10 27.3
Cincinnati,	14 45.4	9 14.6			

Table of the Sun's Declination for each Day in 1830, *at* Apparent *Noon at Greenwich.*

D.	Jan.—*South.*	Feb.—*South.*	Mar.—*South.*	Apr.—*North.*	May.—*N.*	June.—*N.*	July.—*N.*	Aug.—*N.*	Sept.—*N.*	Oct.—*South.*	Nov.—*South.*	Dec.—*South*
1	23° 1′ 52″	17° 8′ 57″	7°39′ 11″	4°27′ 37″	15° 0′ 22″	22° 1′ 44″	23° 8′ 56″	18° 6′ 40″	8°23′ 33″	3° 5′ 22″	14°22′ 19″	21°47′ 34″
2	22 56 45	16 51 46	16 22	50 43	18 26	9 49	4 49	17 51 30	1 44	28 40	41 30	56 46
3	51 10	34 18	6 53 27	5 13 44	36 16	17 30	0 19	36 2	7 39 48	51 56	15 0 27	22 5 34
4	45 8	16 32	30 26	36 39	53 50	24 48	22 55 25	20 17	17 44	4 15 9	19 9	13 55
5	38 39	15 58 29	7 20	59 28	16 11 8	31 43	50 6	4 16	6 55 32	38 20	37 37	21 51
6	31 43	40 11	5 44 9	6 22 11	28 10	38 14	44 24	16 47 58	33 14	5 1 27	55 49	29 21
7	24 20	21 36	20 53	44 48	44 56	44 21	38 18	31 23	10 49	24 30	16 13 45	36 25
8	16 31	2 46	4 57 34	7 7 17	17 1 25	50 4	31 49	14 32	5 48 18	47 30	31 25	43 2
9	8 16	14 43 40	34 10	29 40	17 37	55 23	24 56	15 57 26	25 41	6 10 25	48 48	49 12
10	21 59 34	24 20	10 43	51 54	33 32	23 0 19	17 40	40 4	2 59	33 15	17 5 55	54 55
11	50 27	4 45	3 47 13	8 14 1	49 10	4 50	10 1	22 27	4 40 11	56 0	22 43	23 0 11
12	40 55	13 44 56	23 40	36 0	18 4 30	8 56	1 59	4 35	17 18	7 18 40	39 14	5 0
13	30 57	24 54	0 5	57 50	19 31	12 39	21 53 34	14 46 29	3 54 20	41 14	55 27	9 21
14	20 34	4 39	2 36 28	9 19 32	34 14	15 56	44 46	28 8	31 19	8 3 41	18 11 21	13 14
15	9 47	12 44 11	12 49	41 4	48 39	18 50	35 37	9 33	8 13	26 2	26 55	16 40
16	20 58 35	23 30	1 49 9	10 2 27	19 2 45	21 18	26 5	13 50 45	2 45 3	48 16	42 10	19 38
17	47 0	2 38	25 27	23 40	16 31	23 22	16 11	31 43	21 51	9 10 22	57 5	22 7
18	35 0	11 41 34	1 45	44 44	29 58	25 1	5 55	12 28	1 58 36	32 21	19 11 40	24 9
19	22 37	20 19	0 38 3	11 5 36	43 6	26 15	20 55 18	12 53 1	35 18	54 11	25 54	25 42
20	9 51	10 58 53	*S'h.* 14 21	26 18	55 53	27 5	44 20	33 22	11 58	10 15 52	39 47	26 47
21	19 56 43	37 17	*N°h.* 9 20	46 48	20 8 20	27 30	33 1	13 30	0 48 36	37 24	53 19	27 24
22	43 12	15 31	33 1	12 7 8	20 26	27 29	21 20	11 53 27	25 13	58 47	20 6 28	27 32
23	29 19	9 53 36	56 41	27 15	32 12	27 4	9 20	33 13	*N°h.* 1 49	11 19 59	19 15	27 13
24	15 4	31 31	1 20 18	47 10	43 36	26 15	19 56 59	12 48	*S'h.* 21 36	41 1	31 40	26 24
25	0 28	9 19	43 54	13 6 52	54 40	25 0	44 19	10 52 12	45 1	12 1 53	43 42	25 8
26	18 45 31	8 46 58	2 7 28	26 21	21 5 21	23 21	31 18	31 26	1 8 27	22 33	55 21	23 23
27	30 14	24 29	30 58	45 37	15 41	21 17	17 59	10 31	31 52	43 2	21 6 36	21 10
28	14 37	1 53	54 26	14 4 40	25 38	18 48	4 20	9 49 25	55 16	13 3 19	17 27	18 29
29	17 58 40		3 17 50	23 28	35 14	15 55	18 50 22	28 10	2 18 40	23 23	27 54	15 20
30	42 25		41 10	42 2	44 27	12 38	36 6	6 46	42 2	43 15	37 56	11 43
31	25 50		4 4 26		53 17		21 32	8 45 14		14 2 54		7 38

Moon's Equatorial Parallax and Horizontal Semidiameter in *seconds*.

d.	e. p.	s. d.	d.	e. p.	s. d.	d.	e. p.	s. d.
1	3552″	968″	12	3300	899″	22	3457″	942″
2	548	67	13	275	92	23	503	55
3	540	65	14	259	88	24	543	65
4	523	61	15	251	86	25	573	74
5	511	57	16	253	86	26	591	79
6	439	51	17	266	90	27	598	80
7	462	43	18	289	96	28	592	79
8	431	35	19	322	905	29	577	75
9	397	23	20	364	17	30	555	69
10	363	16	21	409	29	31	529	62
11	329	7						

USEFUL REMARKS.

If you mean to know yourself, interline such of these remarks as affect you, and set a mark to such as leave a sense of uneasiness with you, and then show your copy to whom you please. *Lavater.*

O! let thy soul remember, what the will of heaven ordains is good for all; and if for all, then good for thee. *Akenside.*

There is nothing requires so strict an economy as our benevolence. We should husband our means, as the agriculturist his manure, which, if he spread over too large a superficies, produces no crop, if over too small a surface, exuberates in rankness and weeds. *Lacon.*

Days of the Month.	Days of the Week.	Sun rises and sets. Boston, &c.	New York, &c.	Washington, &c.	Charleston, &c.	New Orleans, &c.	Moon sets and rises. Boston, &c.	New York, &c.	Washington, &c.	Charleston, &c.	New Orleans, &c.
1	F.	7 31 5	7 26 5	7 20 5	7 3 5	6 57 6	sets	sets	sets	sets	sets
2	S.	31	26	20	3	57	0 13m.	0 12m.	0 11m.	0 9m.	0 8m.
3	*Su.*	30	25	20	3	57	1 22	1 20	1 19	1 14	1 11
4	M.	30	25	19	2	56	2 30	2 27	2 25	2 17	2 13
5	Tu.	30	24	19	2	56	3 36	3 33	3 30	3 20	3 16
6	W.	29	24	18	1	56	4 40	4 36	4 32	4 20	4 16
7	Th.	29	23	18	1	55	rises	rises	rises	rises	rises
8	F.	28	23	17	1	55	4 34a.	4 38a.	4 42a.	4 55a.	5 0a.
9	S.	28	22	17	0	54	5 33	5 37	5 40	5 52	5 56
10	*Su.*	27	22	16	0	54	6 32	6 36	6 38	6 48	6 52
11	M.	27	21	16	6 59 6	53	7 30	7 33	7 35	7 42	7 46
12	Tu.	26	21	15	59	53	8 28	8 29	8 32	8 37	8 39
13	W.	25	20	14	58	52	9 25	9 26	9 27	9 29	9 30
14	Th.	24	19	14	58	52	10 22	10 22	10 22	10 22	10 22
15	F.	23	18	13	57	51	11 19	11 19	11 17	11 15	11 14
16	S.	22	17	12	57	51	. . .	. . .	. . .	. . .	. . .
17	*Su.*	21	16	11	57	51	0 17m.	0 16m.	0 13m.	0 8m.	0 6m.
18	M.	20	15	10	56	50	1 14	1 12	1 9	1 2	0 59
19	Tu.	19	14	9	56	50	2 12	2 8	2 6	1 56	1 52
20	W.	18	13	8	54	49	3 10	3 6	3 3	2 52	2 47
21	Th.	17	12	7	54	49	4 8	4 4	4 0	3 47	3 42
22	F.	16	12	7	53	48	5 3	4 59	4 55	4 42	4 37
23	S.	15	11	6	52	47	5 57	5 53	5 49	5 36	5 31
24	*Su.*	14	10	5	52	47	sets	sets	sets	sets	sets
25	M.	13	9	4	51	46	6 21a.	6 24a.	6 26a.	6 34a.	6 38a.
26	Tu.	12	8	4	50	45	7 32	7 34	7 35	7 40	7 43
27	W.	11	7	3	50	45	8 43	8 44	8 44	8 46	8 47
28	Th.	10	6	2	49	44	9 54	9 54	9 54	9 54	9 54
29	F.	9	5	1	49	44	11 5	11 4	11 2	10 58	10 56
30	S.	8	4	0	48	43	. . .	. . .	. . .	. . .	11 59
31	*Su.*	7	3	6 59 6	47	42	0 13m.	0 11m.	0 9m.	0 3m.	. . .

Moon's 1st Quarter, 1st day, 9h. 23m. A.
Full Moon, 8th 10 25
Last Quarter, 16th 10 55
New Moon, 24th day, 11h. 47m. M.
First Quarter, 31st 5 39

Southing and Declination of the Planets.

	1st day.		7th day.		13th day.		19th day.		25th day.	
	Souths. h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′
♄	2 32m.	16 38 n.	2 4m.	16 46 n.	1 37m.	16 54 n.	1 9m.	17 3 n.	0 42m.	17 12 n.
♃	7 29	3 47 s.	7 10	4 18 s.	6 51	4 44 s.	6 32	5 8 s.	6 14	5 28 s.
♀	7 31	2 2	7 13	1 33	6 56	1 0	6 38	0 19	6 21	0 30 n.
☌	8 37	18 7	8 27	19 8	8 18	20 3	8 9	20 53	8 0	21 36 s.
♅	11 10	23 15	10 49	23 15	10 29	23 14	10 9	23 13	9 50	23 11
☿	11 59	13 46	11 43	13 38	11 26	13 27	11 10	13 13	10 54	12 56
☉	0 20a.	24 35	0 37a.	23 10	0 53a.	20 48	1 6a.	17 36	1 13a.	13 56
♎	0 50	22 48	0 37	22 23	0 25	21 55	0 12	21 23	0 0	20 47
♓	1 41	19 37	1 16	19 32	0 51	19 27	0 27	19 21	0 3	19 16
♀	3 15	13 0	3 9	10 25	3 2	7 47	2 52	5 11	2 41	2 41

Days of the Month.	Moon souths.	Equation of Time. Add to app. Time.	High water. Boston, &c.	New York, &c.	Charleston, &c.	PHENOMENA AND OBSERVATIONS. *Sundays and other Remarkable Days.*
1	5 48a.	3′ 50.4″	4 16a.	1 40a.	0 1a.	*Circumcision.* Earth nearest ☉.
2	6 39	4 18.7	5 23	2 47	1 8	Ga. (4th) adop. the Const'n, 1788.
3	7 31	46.6	6 45	4 9	2 30	*Second Sunday after Christmas.*
4	8 24	5 14.1	8 04	5 28	3 49	Treaty with G. Britain, 1784.
5	9 18	41.2	9 9	6 33	4 54	Occult. of α ♉.
6	10 13	6 7.8	10 2	7 26	5 47	*Epiphany.*
7	11 7	34.0	10 49	8 13	6 34	Lafayette embarked for F. 1779.
8	♌	59.6	11 29	8 53	7 14	Battle of New Orleans, 1815.
9	0 0m.	7 24.7	. . .	9 32	7 53	Ct. (5th) adop. the Const'n, 1788.
10	0 51	49.3	0 8m.	10 5	8 26	*First Sunday after Epiphany.*
11	1 40	8 13.3	0 41	10 38	8 59	Dr. Dwight died, 1817.
12	2 27	36.7	1 14	11 9	9 30	Act of amnesty at Paris, 1816.
13	3 11	59.5	1 45	11 41	10 2	♀ brightest as evening star.
14	3 54	9 21.7	2 17	. . .	10 35	. . . .
15	4 36	43.3	2 50	0 14m.	11 16	☌ ♃ ν ♏. Charles'n burnt 1778.
16	5 18	10 4.2	3 31	0 55	. . .	Occult. of ♂ ♍.
17	6 1	24.4	4 23	1 47	0 8m.	*Second Sunday after Epiphany.*
18	6 46	43.9	5 29	2 53	1 14	Battle of the Cowpens, 1781.
19	7 31	11 2.7	6 47	4 11	2 32	☌ ☿ ι ♈ distance 1′.
20	8 20	20.8	8 3	5 27	3 48	☉ enters ♏.
21	9 11	38.2	9 6	6 30	4 51	Louis XVI. beheaded, 1793.
22	10 6	54.8	9 56	7 20	5 41	Creeks def. at Tallapoosa, 1814.
23	11 1	12 10.6	10 41	8 5	6 26	William Pitt died, 1806.
24	11 57	25.6	11 25	8 49	7 10	*Third Sunday after Epiphany.*
25	0 53a.	39.9	0 7a.	9 31	7 52	*Conversion of St. Paul.*
26	1 47	53.4	0 48	10 12	8 33	☌ ♅ ☉. ☌ ♖ ☉.
27	2 41	13 6.0	1 30	10 54	9 15	☿ at greatest eastern elong.
28	3 34	17.8	2 12	11 36	9 57	□ ♀ ☉.
29	4 27	28.8	2 55	0 19a.	10 40	George IV. began to reign, 1820.
30	5 19	38.9	3 45	1 9	11 30	Charles I. beheaded, 1649.
31	6 12	48.2	4 45	2 9	0 30a	*Fourth Sunday after Epiphany.*

Moon's Equatorial Parallax and Horizontal Semidiameter in *seconds*.

d.	e. p.	s. d.	d.	e. p.	s. d.	d.	e. p.	s. d.
1	3501″	954″	11	3250″	885″	21	3523″	960″
2	471	46	12	244	84	21	573	74
3	442	38	13	249	86	22	613	85
4	412	30	14	262	89	23	639	92
5	382	22	15	286	95	24	649	94
6	354	14	16	320	905	25	641	92
7	326	6	17	362	16	26	618	86
8	301	0	18	413	30	27	585	77
9	278	893	19	468	45	28	543	65
10	261	89						

USEFUL REMARKS.

Every virtue carried to an excess, approaches its kindred vice.

If you can be well without health, you can be happy without virtue. *Burke.*

A grain of prudence is worth a pound of craft. *Sir P. Sidney.*

We are not more ingenious in searching out bad motives for good actions, when performed by others, than good motives for bad actions, when performed by ourselves. *Lacon.*

Words are the daughters of the wind, but actions are the sons of the soul. *Sir W. Jones.*

Commit the beginning of actions to *Argus* with his hundred eyes; and the end to *Briareus* with his hundred hands. *Bacon.*

Fortune sells many things to the hasty, which she gives to the wary and deliberate. *Bacon.*

Days of the Month.	Days of the Week.	Sun rises and sets.					Moon sets and rises.				
		Boston, &c.	New York, &c.	Washington, &c.	Charleston, &c.	New Orleans, &c.	Boston, &c.	New York, &c.	Washington, &c.	Charleston, &c.	New Orleans, &c.
1	M.	7 5 5	7 1 5	6 57 6	6 46 6	6 41 6	1 19m.	1 15m.	1 13m.	1 3m.	0 59m.
2	Tu.	4	0	56	46	41	2 23	2 19	2 15	2 3	1 59
3	W.	2	6 59 6	55	45	40	3 24	3 20	3 16	3 3	2 58
4	Th.	1	58	54	44	39	4 20	4 16	4 12	3 59	3 54
5	F.	0	57	53	43	38	5 9	5 5	5 1	4 48	4 44
6	S.	6 59 6	56	52	42	37	rises	rises	rises	rises	rises
7	*Su.*	58	54	51	41	37	5 14a.	5 17a.	5 20a.	5 28a.	5 32a.
8	M.	57	53	50	40	36	6 13	6 15	6 17	6 23	6 25
9	Tu.	55	52	49	39	35	7 12	7 13	7 14	7 18	7 19
10	W.	54	51	47	38	34	8 10	8 10	8 11	8 12	8 13
11	Th.	53	50	46	37	33	9 6	9 6	9 5	9 4	9 3
12	F.	52	49	45	36	33	10 3	10 2	10 1	9 57	9 55
13	S.	50	47	44	35	32	11 0	10 58	10 56	10 49	10 47
14	*Su.*	49	46	43	34	31	11 57	11 54	11 51	11 43	11 39
15	M.	48	45	42	33	30	. . .	. . .	. . .	. . .	. . .
16	T.	46	43	40	32	29	0 54m.	0 50m.	0 47m.	0 37m.	0 33m.
17	W.	45	42	39	31	28	1 50	1 46	1 42	1 30	1 26
18	Th.	43	41	38	30	27	2 46	2 42	2 38	2 25	2 20
19	F.	42	40	37	29	27	3 40	3 36	3 32	3 19	3 14
20	S.	41	39	36	28	26	4 30	4 26	4 22	4 10	4 6
21	*Su.*	39	37	35	27	25	5 17	5 13	5 10	5 0	4 56
22	M.	38	36	34	26	24	sets	sets	sets	sets	sets
23	Tu.	36	34	32	25	23	6 20a.	6 21a.	6 22a.	6 25a.	6 27a.
24	W.	35	33	31	24	22	7 35	7 35	7 35	7 35	7 36
25	Th.	33	31	29	23	21	8 48	8 47	8 46	8 43	8 43
26	F.	32	30	28	23	21	10 1	9 59	9 57	9 51	9 49
27	S.	30	29	27	22	20	11 11	11 8	11 5	10 56	10 53
28	*Su.*	29	28	26	21	19	. . .	. . .	. . .	. . .	11 56

Full Moon, 7th day, 2h. 39m. A.
Last Quarter, 15th 7 20
New Moon, 22d 11 29

To wilful men,
The injuries that they themselves procure
Must be their schoolmasters.—*Shakspeare.*

Southing and Declination of the Planets.

	1st day.		7th day.		13th day.		19th day.		25th day.	
	Souths. h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′
♄	0 14m.	17 22 n.	11 43 a.	17 33 n.	11 18 a.	17 42 n.	10 53 a.	17 50 n.	10 28 a.	17 58 n.
♃	5 52	5 46 s.	5 34m.	5 58 s.	5 15m.	6 6 s.	4 55m.	6 10 s.	4 35m.	6 11 s.
♂	6 2	1 36 n	5 44	2 42 n.	5 26	3 55 n.	5 7	5 15 n.	4 48	6 41 n.
☉	7 51	22 18 s.	7 44	22 48 s.	7 38	23 11 s.	7 32	23 28 s.	7 27	23 37 s.
♀	9 30	23 8	9 11	23 4	8 52	23 1	8 33	22 56	8 15	22 52
☿	10 39	12 34	10 24	12 11	10 9	11 47	9 55	11 20	9 41	10 51
☽	11 40	19 10	11 17	19 5	10 55	19 0	10 33	18 55	10 11	18 50
☊	11 48	20 2	11 37	19 19	11 26	18 35	11 15	17 47	11 4	16 57
☋	1 2a.	10 22	0 29a.	9 32	11 41	11 3	10 57	13 20	10 30	14 57
♈	2 23	0 1	2 5	1 54 n.	1 43	3 23 n.	1 17	4 16 n.	0 45	4 24 n.

Days of the Month.	Moon souths.	Equation of Time. Add to app. Time.	High water. Boston, &c.	High water. New York, &c.	High water. Charleston, &c.	PHENOMENA AND OBSERVATIONS. *Sundays and other Remarkable Days.*
1	7 5a.	13′ 56 6″	6 3a.	3 27a.	1 48a.	☌ ☽ ♈ ♉.
2	7 59	14 4.2	7 31	4 55	3 16	*Purif. of B. V. Mary.* ☿ stat.
3	8 53	10.9	8 45	6 9	4 30	♂ of ♄. Span. Inquis. abol. 1813.
4	9 46	16.8	9 40	7 4	5 25	. . . . .
5	10 38	21.9	10 28	7 52	6 13	☌ ♀ 16 ♓ distance 2′.
6	11 27	26.1	11 7	8 31	6 52	Ms. (6th) adop. the Const'n, 1788.
7	♂	29 5	11 43	9 7	7 28	*Septuagesima Sunday.*
8	0 15m.	32.1	. . .	9 39	8 0	Earthquake at London, 1760.
9	1 0	33 9	0 15m.	10 8	8 29	Constellation took the Insurg. '99.
10	1 44	35.0	0 44	10 36	8 57	Occult. of ♉ ☊.
11	2 27	35.2	1 12	11 7	9 28	Inf. ☌ of ☿.
12	3 9	34 8	1 43	11 39	10 0	☽ Apogee, ♀ Perihelion.
13	3 52	33.5	2 15	. . .	10 37	W. & M. proclaimed K. & Q. 1689.
14	4 36	31.5	2 52	0 16m.	11 20	*Sexagesima Sund.* ♀ stationary.
15	5 21	28.8	3 35	0 59	. . .	Louis XV. born, 1710.
16	6 7	25.4	4 32	1 56	0 17m.	Frigate Philadel. destroyed, 1804.
17	6 57	21.3	5 47	3 11	1 32	Peace with G. B. ratified, 1815.
18	7 48	16.5	7 14	4 38	2 59	Vt. admitted, 1791. ☉ enters ♓.
19	8 43	11.0	8 30	5 54	4 15	Florida ceded to U. States, 1821.
20	9 38	4.9	9 28	6 52	5 13	Cyane and Levant captured, 1815.
21	10 34	13 58.2	10 17	7 41	6 2	*Quinquagesima Sunday.*
22	11 31	50 8	11 3	8 27	6 48	Washington born, 1732.
23	0 27a.	42.7	11 47	9 11	7 32	*Shrove Tues.* Peacock tak. 1813.
24	1 23	34.0	0 30a.	9 54	8 15	*Ash Wed. St. Matthias.* ☿ stat.
25	2 18	24.7	1 12	10 36	8 57	William Pinkney died, 1822.
26	3 13	14.9	1 54	11 18	9 39	☌ ☾ 718 Mayer dist. 4′.
27	4 8	4.4	2 39	0 3a.	10 24	Earthquake at Lisbon, 1796.
28	5 3	12 53.4	3 28	0 52	11 13	*First Sunday in Lent.*

A man that strives to make himself a different thing from other men by much reading, gains this chiefest good, that in all fortunes he hath something to entertain and comfort himself withal. *Selden.*

Moon's Equatorial Parallax and Horizontal Semidiameter in *seconds*.

d.	e. p.	s. d.	d.	e. p.	s. d.	d.	e. p.	s. d.
1	3500″	954″	12	3239	883″	22	3622″	987″
2	457	42	13	245	84	23	658	96
3	416	31	14	259	88	24	677	1002
4	379	21	15	282	94	25	676	1002
5	346	12	16	314	903	26	656	996
6	317	04	17	354	14	27	620	86
7	293	897	18	404	28	28	572	73
8	272	92	19	459	43	29	519	59
9	256	87	20	516	58	30	465	44
10	245	84	21	573	74	31	414	30
11	239	83						

USEFUL REMARKS.

Truth is the same to the understanding, that music is to the ear, or beauty to the eye. *Lord Kaimes.*

Religious toleration is a duty, a virtue, which man owes to man; considered as a public right, it is the respect of the government to the consciences of the citizens, and the objects of their veneration and their faith. *Portalis.*

The taking away false foundations is not to the prejudice, but advantage of truth, which is never injured, or endangered so much as when mixed with, or built on falsehood. *Locke.*

Days of the Month.	Days of the Week.	Sun rises and sets. Boston, &c.	New York, &c.	Washington, &c.	Charleston, &c.	New Orleans, &c.	Moon sets and rises. Boston, &c.	New York, &c.	Washington, &c.	Charleston, &c.	New Orleans, &c.
1	M.	6 28 6	6 26 6	6 25 6	6 20 6	6 18 6	0 18m.	0 14m.	0 11m.	0 0m.	. . .
2	Tu.	27	25	24	19	17	1 21	1 17	1 13	1 1	0 55m.
3	W.	25	24	22	18	16	2 18	2 14	2 10	1 57	1 53
4	Th.	24	23	21	17	15	3 10	3 6	3 2	2 50	2 46
5	F.	22	21	19	16	14	3 55	3 51	3 47	3 39	3 35
6	S.	21	20	18	15	13	4 36	4 32	4 30	4 21	4 18
7	*Su.*	19	18	17	14	12	5 10	5 7	5 5	4 57	4 53
8	M.	18	17	16	13	11	rises.	rises.	rises.	rises.	rises.
9	Tu.	17	16	15	12	10	6 5a.	6 6a.	6 6a.	6 8a.	6 9a.
10	W.	15	14	13	11	9	7 3	7 3	7 3	7 4	7 4
11	Th.	13	12	12	9	8	8 0	0 59	7 58	7 55	7 54
12	F.	12	11	11	8	7	8 57	8 55	8 54	8 48	8 47
13	S.	10	10	9	7	6	9 54	9 51	9 49	9 41	9 38
14	*Su.*	9	9	8	6	5	10 50	10 46	10 43	10 33	10 30
15	M.	8	8	7	5	4	11 46	11 42	11 38	11 26	11 22
16	Tu.	7	6	5	4	3	. . .	. . .	. . .	. . .	. . .
17	W.	5	4	4	3	2	1 41m.	0 37m.	0 33m.	0 20m.	0 16m.
18	Th.	4	3	3	2	2	2 35	1 31	1 27	1 14	1 9
19	F.	2	2	2	1	1	3 26	2 22	2 18	2 6	2 2
20	S.	1	1	1	0	0	3 13	3 9	3 6	2 54	2 50
21	*Su.*	5 59 7	5 59 7	5 59 7	5 59 7	5 59 7	4 57	3 54	3 51	3 42	3 38
22	M.	58	58	58	58	58	4 37	4 35	4 33	4 26	4 23
23	Tu.	56	57	57	57	57	sets.	sets.	sets.	sets.	sets.
24	W.	55	56	56	56	56	6 24a.	6 24a.	6 23a.	6 22a.	6 21a.
25	Th.	53	54	54	55	55	7 42	7 41	7 40	7 35	7 33
26	F.	52	52	53	54	54	8 58	8 56	8 53	8 46	8 43
27	S.	51	51	52	53	54	10 9	10 6	10 3	9 53	9 49
28	*Su.*	49	50	50	52	53	11 17	11 13	11 9	10 57	10 53
29	M.	48	49	49	51	52	. . .	. . .	. . .	11 58	11 54
30	Tu.	46	47	48	50	51	0 19m.	0 15m.	0 11m.	. . .	. . .
31	W.	45	46	47	49	50	1 13	1 9	1 5	0 52m.	0 47m.

Moon's 1st Quarter,	1st day,	2h.	54m.	A.	New Moon, 24th day, 9h. 37m. M.
Full Moon,	9th	8	23	M.	First Quarter, 31st 1 50
Last Quarter,	17th	0	29	A.	

Southing and Declination of the Planets.

	1st day.		7th day.		13th day.		19th day.		25th day.	
	Souths.	Dec.	*Souths.*	Dec.	*Souths.*	Dec.	*Souths.*	Dec.	*Souths.*	Dec.
	h. m.	° ′	h. m.	° ′	h. m.	° ′	h. m.	° ′	h. m.	° ′
☿	4 22m.	6 10 s.	4 1m.	6 6 s.	3 40m.	5 58 s.	3 18m	5 47 s.	2 55m.	5 35 s.
♀	4 35	7 43 n.	4 16	9 21 n.	3 55	11 3 n.	3 33	12 49 n.	3 11	14 35 n.
☉	7 24	23 40 s.	7 19	23 38 s.	7 14	23 29 s.	7 10	23 13 s.	7 5	22 51 s.
♂	8 3	22 48	7 45	22 44	7 27	22 39	7 8	22 34	6 50	22 30
♃	9 33	10 31	9 19	9 58	9 6	9 24	8 52	8 49	8 39	8 12
♄	9 57	18 46	9 36	18 42	9 15	18 37	8 54	18 33	8 33	18 30
♅	10 21	15 25	10 17	15 18	10 19	14 12	10 27	12 15	10 37	9 28
♆	10 58	16 23	10 47	15 32	10 37	14 39	10 27	13 44	10 16	12 49
☊	0 22 a.	4 4 n.	11 46	2 49 n.	11 12	1 8 n.	10 41	0 41	10 16	2 15
♇	10 12	18 3	9 48 a.	18 10	9 25 a.	18 15	9 2 a.	18 19 n.	8 39 a.	18 23 n.

Days of the Month.	Moon souths.	Equation of Time. Add to app. Time.	High water. Boston, &c.	High water. New York, &c.	High water. Charleston, &c.	PHENOMENA AND OBSERVATIONS. *Sundays and other Remarkable Days.*
1	5 57 a.	12′ 41.8″	4 26 a.	1 50 a.	0 11 a.	☌ ♄ 757 Mayer. dist. 7′.
2	6 51	29.6	5 41	3 5	1 26	Boileau died, 1711.
3	7 45	17 0	7 9	4 33	2 24	. . . . .
4	8 37	3.8	8 25	5 49	4 10	21st Congress commenced, 1829.
5	9 26	11 50.2	9 25	6 49	5 10	Boston Massacre, 1770.
6	10 14	36.2	10 10	7 34	5 55	Oc. of ☊ ☊. ☌ ♂ 740 Mayer.
7	11 0	21.7	10 49	8 13	6 34	*2d Sunday in Lent.* Inf. ☌ ☿.
8	11 44	6 8	11 23	8 47	7 8	English entered Bourdeaux, 1814.
9	☽	10 51.5	11 53	9 17	7 38	☌ ♅ 19 ♍ dist. 8′. ☽ ec. p. vis.
10	0 28m.	35.8	. . .	9 46	8 7	☿ greatest western elong.
11	1 11	19.9	0 22m.	10 14	8 35	☽ in apogee.
12	1 53	3.6	0 50	10 43	9 4	Occult. of ♐ ♏.
13	2 37	9 47.0	1 19	11 15	9 36	Discovery of Herschel, 1781.
14	3 22	30.1	1 51	11 51	10 12	*3d Sunday in Lent.*
15	4 7	13.0	2 27	. . .	10 56	♀ stat. Battle of Guilford, 1781.
16	4 55	8 55 7	3 11	0 35m.	11 51	☿ in aphelion.
17	5 45	38.2	4 6	1 30	. . .	British *finally* left Boston, 1776.
18	6 36	20.5	5 16	2 40	1 1m.	☌ stationary,
19	7 30	2.6	6 43	4 7	2 28	☌ ♂ ♄ dist. 41′. ☌ ☿ ♕ dist. 89′
20	8 25	7 44.6	8 5	5 29	3 50	☉ enters ♈. Begin. of Spring.
21	9 20	26.5	9 8	6 32	4 53	*4th Sun. in Lent. Mid Lent Sun.*
22	10 15	8.3	9 59	7 23	5 44	. . . . .
23	11 11	6 50.0	10 46	8 10	6 31	Hornet capt. the Penguin, 1815.
24	0 7 a.	31.6	11 32	8 56	7 17	☉ eclipsed; invisible.
25	1 4	13.2	0 15 a.	9 39	8 0	*Annun. of B. V. Mary.*
26	2 1	5 54.8	0 59	10 23	8 44	Bona. ar. at Paris from Elba, 1815.
27	2 59	36.3	1 44	11 8	9 29	♀ stat.
28	3 56	17.8	2 30	11 54	10 15	Oc. ♌ ☽. *5th Sunday in Lent.*
29	4 53	4 59.3	3 17	0 41 a.	11 2	. . . . .
30	5 47	40.8	4 13	1 37	11 58	Capitulation of Paris, 1813.
31	6 41	22.4	5 23	2 47	1 8 a.	. . . . .

Moon's Equatorial Parallax and Horizontal Semidiameter, in *seconds*.

d.	e. p.	s. d.	d.	e. p.	s. d.	d.	e. p.	s. d.
1	3369″	918″	11	3265″	890″	21	3671″	1000″
2	330	07	12	287	96	22	680	03
3	298	899	13	316	904	23	669	00
4	274	92	14	352	13	24	639	992
5	255	87	15	396	25	25	594	79
6	243	84	16	445	39	26	540	65
7	236	82	17	499	53	27	482	49
8	235	82	18	553	68	28	425	33
9	239	83	19	603	82	29	374	19
10	249	85	20	644	93	30	330	07

USEFUL REMARKS.

Amusement is the happiness of those who cannot think. *Pope.*

No man ever did a designed injury to another, without doing a greater to himself.

Nothing more easy than to do mischief; nothing more difficult than to suffer without complaining.

No man is wise or safe, but he that is honest.

There is no more fruitful cause of evil, than causeless or intemperate anger.

Before you give way to anger, try to find a reason for not being angry.

Men fear death through ignorance, as children fear the dark. *Bacon.*

Envy has no holidays. *Bacon.*

Days of the Month.	Days of the Week.	Sun rises and sets. Boston, &c.	Sun rises and sets. New York, &c.	Sun rises and sets. Washington, &c.	Sun rises and sets. Charleston, &c.	Sun rises and sets. New Orleans, &c.	Moon sets and rises. Boston, &c.	Moon sets and rises. New York, &c.	Moon sets and rises. Washington, &c.	Moon sets and rises. Charleston, &c.	Moon sets and rises. New Orleans, &c.
1	Th.	5 43 7	5 44 7	5 45 7	5 48 7	5 49 7	2 1m.	1 57m.	1 53m.	1 40m.	1 36m.
2	F.	42	43	44	47	48	2 43	2 39	2 36	2 25	2 21
3	S.	41	42	43	46	47	3 21	3 18	3 16	3 6	3 4
4	*Su.*	39	40	42	45	47	3 54	3 52	3 50	3 43	3 41
5	M.	38	39	41	44	46	4 25	4 24	4 23	4 19	4 17
6	Tu.	37	38	39	43	45	rises.	rises.	rises.	rises.	rises.
7	W.	35	36	38	42	44	6 3 a.	6 2 a.	6 1 a	5 59 a.	5 58 a.
8	Th.	34	34	36	41	43	6 58	6 57	6 54	6 50	6 48
9	F.	32	33	35	40	42	7 55	7 53	7 50	7 43	7 40
10	S.	31	32	34	39	42	8 53	8 50	8 47	8 38	8 34
11	*Su.*	30	31	33	38	41	9 49	9 45	9 42	9 30	9 26
12	M.	28	29	32	37	40	10 44	10 40	10 37	10 24	10 20
13	Tu.	27	28	31	36	39	11 37	11 33	11 29	11 16	11 11
14	W.	25	27	29	35	38	. . .	. . .	. . .	. . .	. . .
15	Th.	24	26	28	35	37	0 28m.	0 24m.	0 20m.	0 7m.	0 3m.
16	F.	23	25	27	34	37	1 15	1 11	1 7	0 55	0 51
17	S.	21	23	25	33	36	1 59	1 55	1 53	1 42	1 39
18	*Su.*	20	22	24	32	35	2 40	2 37	2 35	2 27	2 24
19	M.	18	20	23	31	34	3 19	3 17	3 16	3 11	3 11
20	Tu.	17	19	22	30	33	3 55	3 54	3 54	3 52	3 51
21	W.	16	18	20	29	32	4 32	4 33	4 33	4 34	4 29
22	Th.	14	17	19	28	32	sets.	sets.	sets.	sets.	sets.
23	F.	13	16	18	27	31	7 53 a.	7 50 a.	7 47 a.	7 38 a.	7 35 a.
24	S.	12	15	17	27	30	9 5	9 1	8 58	8 47	8 43
25	*Su.*	10	13	16	26	29	10 11	10 7	10 3	9 50	9 45
26	M.	9	12	15	25	28	11 11	11 7	11 3	10 50	10 45
27	Tu.	8	11	14	24	27	. . .	11 59	11 55	11 42	11 37
28	W.	7	10	13	23	27	0 3m.	. . .	. . .	. . .	. . .
29	Th.	5	8	12	22	26	0 49	0 45m.	0 42m.	0 30m.	0 26m.
30	F.	4	7	11	21	25	1 28	1 24	1 22	1 12	1 9

Full Moon, 8th day, 2h. 20m. M.
Last Quarter, 16th 1 41
New Moon, 22d day 6h. 19m. A.
First Quarter, 29th 2 46

Southing and Declination of the Planets.

	1st day.		7th day.		13th day.		19th day.		25th day.	
	Souths. h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′
☿	2 27m.	5 19 s.	2 2m.	5 5 s.	1 36m.	4 51 s.	1 9m.	4 38 s.	0 41m.	4 26 s.
♀	2 44	16 38 n.	2 20	18 20 n.	1 54	19 56 n.	1 28	21 23 n.	1 1	22 41 n.
♆	6 28	22 25 s.	6 9	22 21 s.	5 49	22 19 s.	5 28	22 17 s.	5 7	22 15 s.
♂	7 0	22 18	6 55	21 42	6 49	21 1	6 44	20 15	6 37	19 25
♅	8 9	18 26	7 48	18 23	7 27	18 20	7 5	18 18	6 43	18 17
♃	8 23	7 29	8 9	6 50	7 55	6 10	7 40	5 31	7 25	4 51
☉	9 53	3 32	9 39	4 4	9 28	4 8	9 21	3 42	9 16	2 53
♇	10 4	11 44	9 53	10 49	9 42	9 54	9 30	8 59	9 18	8 6
☾	10 53	5 16	11 10	0 56	11 28	3 59 n.	11 50	9 18 n.	0 15 a.	14 38 n.
♄	8 13 a.	18 26 n.	7 51 a.	18 28 n.	7 29 a.	18 28	7 7 a.	18 27	6 45	18 25

Days of the Month.	Moon souths.	Equation of Time. Add to app. Time till the 16th.	High water. Boston, &c.	High water. New York, &c.	High water. Charleston, &c.	PHENOMENA AND OBSERVATIONS. *Sundays and other Remarkable Days.*
1	7 31 a.	4′ 4.0″	6 47 a.	4 11 a.	2 32 a.	. . . .
2	8 20	3 45.8	8 4	5 28	3 49	Pres. Jefferson born, 1743.
3	9 7	27.6	9 4	6 28	4 49	. . . .
4	9 51	9.6	9 51	7 15	5 36	*6th Sun. in Lent. Palm Sun.*
5	10 34	2 51.7	10 30	7 54	6 15	Nantucket plund. by refugees, '79.
6	11 17	33.9	11 3	8 27	6 48	☌ ☍ 813 May, dist. 2′. □ ♆ ☉.
7	☽	16.4	11 34	8 58	7 19	Occult. of ♃ ♏.
8	0 0m.	1 59.1	. . .	9 27	7 48	. . . .
9	0 43	42.0	0 3m.	9 56	8 17	*Good Friday.* De Foe d. 1731.
10	1 27	25.1	0 32	10 27	8 48	Bank of U. S. incorp. 1816.
11	2 13	8.6	1 3	11 0	9 21	*Easter day.* ☌ ☽ ☌ ♎.
12	2 59	0 52.3	1 36	11 37	9 58	*Easter Monday.*
13	3 48	36.3	2 13	. . .	10 42	*Easter Tuesday.* ♄ stationary.
14	4 38	20.7	2 57	0 21m.	11 35	☌ ☿ e ♓ dist. 4′.
15	5 30	5.4	3 50	1 14	. . .	1st theatre opened in Phil. 1754.
16	6 22	*Subtr.*	4 57	2 21	0 42m.	Shakspeare born, 1564.
17	7 15	0 24.0	6 20	3 44	2 5	Franklin died, 1790, aged 84.
18	8 9	38.1	7 44	5 8	3 29	*1st Sun. after Easter. Low Sun.*
19	9 3	51.8	8 49	6 13	4 34	☌ ☽ ☌ ♐. Bat. of Lexing. 1775.
20	9 58	1 5.1	9 43	7 7	5 28	☉ enters ♉.
21	10 53	17.9	10 31	7 55	6 16	☽ in perigee.
22	11 50	30.3	11 18	8 42	7 3	☌ ♅ 22 ♍, dist. 7′. Sup. ☌ ☿ ☉.
23	0 48 a.	42.2	0 4 a.	9 28	7 49	George IV. birth-day kept.
24	1 46	53.7	0 48	10 12	8 33	♀ brightest as morning star.
25	2 45	2 4.7	1 33	10 57	9 18	*2d Sun. after Easter. St. Mark.*
26	3 43	15.3	2 17	11 41	10 2	☌ ☍ ♅. ☍ 54′ S.
27	4 39	25.4	3 4	0 28 a.	10 49	☽ ♀ ☉. York U. C. taken, 1813.
28	5 32	35.0	3 53	1 17	11 38	Bona. embarked for Elba, 1814.
29	6 22	44.1	4 55	2 19	0 40 a.	☿ in perihelion.
30	7 10	52.7	6 9	3 33	1 54	☌ ♀ ☉. La. ced. to U. S. 1803.

Moon's Equatorial Parallax and Horizontal Semidiameter, in *seconds*.

d.	e. p.	s. d.	d.	e. p.	s. d.	d.	e. p.	s. d.
1	3294″	898″	12	3366″	917″	22	3626″	988″
2	268	91	13	403	27	23	599	78
3	250	86	14	443	38	24	541	65
4	240	83	15	486	50	25	489	51
5	237	82	16	531	62	26	434	35
6	241	83	17	573	74	27	381	21
7	250	86	18	610	84	28	336	09
8	264	89	19	637	91	29	299	899
9	283	95	20	649	94	30	271	91
10	306	901	21	646	94	31	254	87
11	334	09						

USEFUL REMARKS.

The latter part of a wise man's life is taken up in curing the follies, prejudices, and false opinions he had contracted in the former.

Men who possess all the advantages of life are in a state where there are many accidents to disorder and discompose, but few to please them. *Swift.*

When dunces call us fools without proving us to be so, our best retort is to prove them to be fools without condescending to call them so. *Lacon.*

The want of due consideration is the cause of all the unhappiness a man brings upon himself. *Sir P. Sidney.*

Days of the Month.	Days of the Week.	Sun rises and sets. Boston, &c.	New York, &c.	Washington, &c.	Charleston, &c.	New Orleans, &c.	Moon sets and rises. Boston, &c.	New York, &c.	Washington, &c.	Charleston, &c.	New Orleans, &c.
1	S.	5 3 7	5 7 7	5 10 7	5 20 7	5 24 7	2 3m.	2 0m.	1 58m.	1 51m.	1 48m.
2	*Su.*	2	6	9	19	23	2 34	2 33	2 31	2 26	2 24
3	M.	0	5	8	18	23	3 4	3 3	3 3	3 0	2 59
4	Tu.	4 59 8	3	7	17	22	3 32	3 32	3 32	3 32	3 32
5	W.	58	2	6	17	21	3 59	4 0	4 1	4 04	4 05
6	Th.	57	1	5	16	20	rises.	rises.	rises.	rises.	rises.
7	F.	56	0	4	15	20	6 51 a.	6 48 a.	6 45 a.	6 37 a.	6 33 a.
8	S.	55	4 59 8	3	15	19	7 49	7 45	7 42	7 32	7 28
9	*Su.*	54	58	2	14	18	8 45	8 41	8 37	8 25	8 20
10	M.	53	57	1	13	18	9 39	9 35	9 31	9 18	9 13
11	Tu.	52	56	0	13	17	10 30	10 26	10 22	10 8	10 3
12	W.	51	55	4 59 8	12	17	11 18	11 14	11 11	10 58	10 53
13	Th.	50	54	58	12	16	. . .	11 58	11 55	11 43	11 39
14	F.	49	53	57	11	16	0 2m.	. . .	. . .	. . .	. . .
15	S.	48	52	56	11	15	0 42	0 39m.	0 37m.	0 27m.	0 24m.
16	*Su.*	47	51	55	10	14	1 19	1 17	1 15	1 8	1 6
17	M.	46	50	54	9	13	1 55	1 54	1 52	1 49	1 48
18	Tu.	45	49	53	9	13	2 31	2 31	2 30	2 30	2 29
19	W.	44	48	53	8	12	3 7	3 8	3 9	3 11	3 12
20	Th.	43	47	52	7	11	3 44	3 46	3 48	3 54	3 56
21	F.	42	46	51	6	11	s ets.	sets.	sets.	sets.	sets.
22	S.	41	45	50	6	10	7 52 a.	7 48 a.	7 44 a.	7 32 a.	7 27 a.
23	*Su.*	40	45	50	5	10	8 55	8 51	8 47	8 34	8 29
24	M.	39	44	49	4	9	9 52	9 48	9 44	9 31	9 26
25	Tu.	38	43	48	4	9	10 42	10 38	10 34	10 23	11 18
26	W.	37	42	47	3	9	11 26	11 22	11 19	11 9	11 5
27	Th.	37	42	47	3	8	. . .	11 59	11 56	11 48	11 46
28	F.	36	41	46	2	8	0 2m.	. . .	. . .	. . .	. . .
29	S.	35	40	45	1	8	0 35	0 33m.	0 31m.	0 25m.	0 23m.
30	*Su.*	34	39	45	1	7	1 5	1 4	1 2	0 59	0 55
31	M.	33	38	44	0	6	1 34	1 34	1 33	1 32	1 31

Full Moon, 7th day, 6h. 55m. A.
Last Quarter, 15th 11 10 M.
New Moon, 22d day, 2h. 5m. M.
First Quarter, 29th 5 40

Southing and Declination of the Planets.

	1st day.		7th day.		13th day.		19th day.		25th day.	
	Souths. h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′
☿	0 13m.	4 17 s.	11 40 a.	4 11 s.	11 12 a.	4 10 s.	10 43 a.	4 14 s.	10 14 a.	4 25 s.
♀	0 34	23 45 n.	0 6m.	24 36 n.	11 33	25 20 n.	11 04	25 42 n.	10 36	25 51 n.
♃	4 45	22 15 s.	4 22	22 16 s.	3 58m.	22 17 s.	3 33m.	22 19 s.	3 8m.	22 23 s
♅	6 20	18 15	5 58	18 15	5 35	18 15	5 11	18 15	4 47	18 16
♂	6 31	18 30	6 23	17 33	6 15	16 31	6 7	15 29	5 57	14 24
☉	7 9	4 13	6 53	3 34	6 36	2 57	6 18	2 21	5 59	1 47
♁	9 6	7 14	8 53	6 23	8 39	5 33	8 25	4 46	8 10	4 1
☿	9 12	1 43	9 8	0 16	9 5	1 26 n.	9 4	3 18 n.	9 2	5 17 n.
☌	0 42 a.	19 20 n.	1 7 a.	22 47 n.	1 25 a.	24 44	1 34 a.	25 22	1 34 a.	24 58
♄	6 23	18 22	6 1	18 18	5 39	18 13	5 16	18 7	4 54	18 0

Days of the Month.	Moon souths.	Equation of Time. Sub. from App. Time.	High water. Boston, &c.	N. York, &c.	Charleston, &c.	PHENOMENA AND OBSERVATIONS. *Sundays and other Remarkable Days.*
1	7 55 a.	3′ 0.8″	7 28 a.	4 52 a.	3 13 a.	*St. Philip and St. John.*
2	8 39	8.4	8 33	5 57	4 18	3d *S. aft. E.* Oc. of ♈ ☊. □ ♄ ☉.
3	9 22	15.4	9 24	6 48	5 9	Havre de Grace burned, 1813.
4	10 4	22.0	10 5	7 29	5 50	♆ stationary.
5	10 46	28.0	10 41	8 5	6 26	N. Bonaparte died, 1821, aged 52.
6	11 30	33.4	11 12	8 36	6 57	. . . . .
7	☌	38 2	11 43	9 7	7 28	Bible Soc. formed at Philad. 1808.
8	0 15m.	42.6	. . .	9 39	8 0	□ ♂ ☉.
9	1 2	46.3	0 15m.	10 12	8 33	*Fourth Sunday after Easter.*
10	1 50	49.4	0 48	10 47	9 8	. . . . .
11	2 40	52.0	1 23	11 25	9 46	. . . . .
12	3 30	54.0	2 1	. . .	10 30	Charleston taken, 1780.
13	4 22	55.4	2 45	0 9m.	11 19	Vienna taken by Bonaparte, 1809.
14	5 14	56.2	3 34	0 58	. . .	F. army crossed M. St. Bern. 1800.
15	6 5	56.4	4 35	1 59	0 20m.	♅ stationary near ♂ ♍.
16	6 57	56.0	5 49	3 13	1 34	*5th Sund. aft. East. Rog. Sund.*
17	7 49	54.9	7 14	4 38	2 59	♀ at greatest western elongation.
18	8 42	53.4	8 25	5 49	4 10	War bet. G. Brit. and France, 1656.
19	9 37	51 2	9 23	6 47	5 8	Great fire in N. York, 1811.
20	10 32	48.5	10 13	7 37	5 58	*Ascension day. Holy Thursday.*
21	11 29	45.2	11 1	8 25	6 46	☉ ent. ♊. ☿ greatest east. elong.
22	0 28 a.	41.3	11 48	9 12	7 33	Occultation of ♂ ♉.
23	1 27	36.9	0 33 a.	9 57	8 18	*Sunday after Ascension.*
24	2 26	32.1	1 17	10 41	9 2	□ ☋ ☉. Copernicus died, 1543.
25	3 21	26.7	1 59	11 23	9 44	. . . . .
26	4 15	20.8	2 40	0 4 a.	10 25	French took Dantzic, 1807.
27	5 4	14.4	3 22	0 46	11 7	☌ ☽ ☿ ☊. Fort George (U. C.)
28	5 51	7.6	4 12	1 36	11 57	[taken, 1813.
29	6 35	0.3	5 13	2 37	0 58 a.	Unsuc. att. on Sackett's harb. 1813.
30	7 19	2 52.7	6 25	3 49	2 10	*Whit Sunday.*
31	8 1	44.6	7 37	5 1	3 22	*Whit Monday.*

Moon's Equatorial Parallax and Horizontal Semidiameter, in *seconds*.

d.	e. p.	s. d.	d.	e. p.	s. d.	d.	e. p.	s. d.
1	3246″	885″	11	3462″	943″	21	3518″	959″
2	245	84	12	493	52	22	473	46
3	254	87	13	523	60	23	426	33
4	268	91	14	551	68	24	379	21
5	239	96	15	575	74	25	337	09
6	313	903	16	592	79	26	301	00
7	340	10	17	601	81	27	275	892
8	368	18	18	599	81	28	258	88
9	398	26	19	583	76	29	252	86
10	430	34	20	556	69	30	256	87

USEFUL REMARKS.

Happiness is less valued when we possess it, than when we have lost it.

Life is short; it cannot afford time for enmities.

Remember that it makes a fault worse, to endeavour to conceal it.

The best practical rule for morality is, never to do any thing which you would be unwilling that all the world should know.

The man whose word can always be depended upon, is sure to be always honored.

What we call time enough always proves little enough.

The advantage of living does not consist in length of days, but in the right improvement of them.—*Montaigne.*

Days of the Month.	Days of the Week.	Sun rises and sets. Boston, &c.	Sun rises and sets. New York, &c.	Sun rises and sets. Washington, &c.	Sun rises and sets. Charleston, &c.	Sun rises and sets. New Orleans, &c.	Moon sets and rises. Boston, &c.	Moon sets and rises. New York, &c.	Moon sets and rises. Washington, &c.	Moon sets and rises. Charleston, &c.	Moon sets and rises. New Orleans, &c.
1	Tu.	4 33 8	4 38 8	4 44 8	4 59 8	5 6 7	2 2m.	2 2m.	2 3m.	2 4m.	2 5m.
2	W.	32	37	43	59	6	2 32	2 33	2 34	2 38	2 40
3	Th.	32	37	43	59	5	3 3	3 5	3 7	3 23	3 15
4	F.	31	37	42	58	5	3 35	3 38	3 41	3 49	3 52
5	S.	31	36	42	58	5	rises.	rises.	rises.	rises.	rises.
6	*Su.*	30	36	41	58	4	7 32 a.	7 28 a.	7 24 a.	7 11 a.	7 6 a.
7	M.	30	35	41	58	4	8 25	8 21	8 17	8 3	7 58
8	Tu.	30	36	41	58	4	9 14	9 10	9 6	8 53	8 48
9	W.	29	35	40	57	4	9 59	9 55	9 52	9 41	9 36
10	Th.	29	35	40	57	3	10 41	10 37	10 35	10 25	10 21
11	F.	29	34	40	57	3	11 19	11 16	11 14	11 7	11 4
12	S.	28	34	39	57	3	11 55	11 54	11 52	11 47	11 45
13	*Su.*	28	34	39	56	3	. . .	. . .	. . .	. . .	. . .
14	M.	28	34	39	56	3	0 30m.	0 30m.	0 29m.	0 27m.	0 26m.
15	Tu.	28	33	39	56	3	1 3	1 3	1 4	1 5	1 6
16	W.	28	33	39	56	2	1 37	1 38	1 40	1 44	1 46
17	Th.	27	33	38	55	2	2 15	2 17	2 20	2 27	2 30
18	F.	27	33	38	55	2	2 57	3 1	3 4	3 14	3 18
19	S.	27	33	38	55	2	sets.	sets.	sets.	sets.	sets.
20	*Su.*	27	32	38	55	2	7 34 a.	7 30 a.	7 26 a.	7 12 a.	7 7 a.
21	M.	27	32	38	55	2	8 28	8 24	8 21	8 8	8 3
22	Tu.	27	32	38	55	2	9 15	9 11	9 8	8 56	8 52
23	W.	27	32	38	55	2	9 54	9 51	9 48	9 39	9 35
24	Th.	27	33	38	55	2	10 30	10 28	10 25	10 18	10 15
25	F.	27	33	38	55	2	11 2	11 1	10 59	10 55	10 52
26	S.	27	33	38	55	2	11 32	11 31	11 31	11 29	11 36
27	*Su.*	27	33	38	55	2	. . .	. . .	. . .	. . .	. . .
28	M.	28	33	39	56	3	0 0m.	0 0m.	0 0m.	0 1m.	0 1m.
29	Tu.	28	33	39	56	3	0 27	0 28	0 29	0 32	0 33
30	W.	28	33	39	56	3	0 56	0 58	1 0	1 5	1 7

Full Moon, 6th day, 9h. 11m. M. | New Moon, 20th day, 9h. 55m. M.
Last Quarter, 13th 5 41 A. | First Quarter, 27th 10 8 A.

Southing and Declination of the Planets.

	1st day.		7th day.		13th day.		19th day.		25th day.	
	Souths. h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′
♄	2 38m.	22 27 s.	2 12m.	22 32 s.	1 44m.	22 37 s.	1 16m.	22 42 s.	0 48m.	22 48 s.
♅	4 18	18 17	3 53	18 19	3 28	18 21	3 3	18 23	2 37	18 26
♆	5 37	1 10	5 16	0 42	4 55	0 17	4 33	0 3 n.	4 11	0 20 n.
☋	5 46	13 7	5 35	12 2	5 24	10 58	5 12	9 55 s.	4 59	8 55 s.
☿	7 52	3 12	7 36	2 33	7 19	1 56	7 2	1 23	6 45	0 54
♀	9 2	7 42 n.	9 1	9 48 n.	9 1	11 53 n.	9 2	13 53 n.	9 4	15 47 n.
☉	1 17a.	23 34	0 50 a.	21 56	0 13 a.	20 14	11 36	18 57	11 2	18 30
♃	4 28	17 51	4 5	17 42	3 43	17 33	3 20 a.	17 22	2 58 a.	17 11
☊	9 42	4 42 s.	9 15	5 2 s.	8 48	5 25 s.	8 22	5 54 s.	7 57	6 26 s.
♂	10 4	25 47 n.	9 37	25 31 n.	9 10	25 7 n.	8 44	24 34 n.	8 18	23 55 n.

Days of the Month.	Moon souths.	Equation of Time. Sub. from App. Time till the 16th.	High water. Boston, &c.	New York, &c.	Charleston, &c.	PHENOMENA AND OBSERVATIONS. *Sundays and other Remarkable Days.*
1	8 43 a.	2′ 36.0″	8 39 a.	6 3 a.	4 24 a.	*Whit Tuesday.*
2	9 26	27.1	9 29	6 53	5 14	Occult. of ϰ ♍.
3	10 11	17.9	10 9	7 33	5 54	☿ stat. Transit of ♀ observ. 1769.
4	10 56	8.2	10 46	8 10	6 31	♀ in aphelion.
5	11 44	1 58.2	11 22	8 46	7 7	Generals Winder & Chandler taken,
6	☽	47.9	11 56	9 20	7 41	*Trinity Sunday.* [1813.
7	0 34m.	37.3	. . .	9 54	8 15	♂ ♅ 21 ♍, dist. 9′.
8	1 24	26.4	0 30m.	10 31	8 52	Pope born, 1688.
9	2 16	15.1	1 7	11 10	9 31	. . . . .
10	3 8	3.6	1 46	11 52	10 13	War declared against Tripoli, 1801.
11	4 0	0 51.8	2 28	. . .	11 0	*St. Barnabas.*
12	4 51	39.8	3 15	0 39m.	11 53	. . . . .
13	5 42	27.6	4 8	1 32	. . .	*First Sunday after Trinity.*
14	6 33	15.1	5 14	2 38	0 59m.	Battle of Marengo, 1800.
15	7 24	2.6	6 33	3 57	2 18	Inf. ♂ ☿ ☉. Luther excom. 1520.
16	8 17	*Add.*	7 54	5 18	3 39	Total eclipse of the Sun, 1806.
17	9 12	0 23.1	8 59	6 23	4 44	Battle of Bunker Hill, 1775.
18	10 9	36.1	9 54	7 18	5 39	War declared against G. Brit. 1812.
19	11 6	49 1	10 44	8 8	6 29	General Greene died, 1786.
20	0 5 a.	1 2.2	11 30	8 54	7 15	*Second Sunday after Trinity.*
21	1 2	15.3	0 14 a.	9 38	7 59	☉ enters ♋. Summer begins.
22	1 57	28.4	0 55	10 19	8 40	. . . . .
23	2 49	41.5	1 33	10 57	9 18	♀ stationary.
24	3 38	54.4	2 9	11 33	9 54	*Nativity of St. John Baptist.*
25	4 25	2 7.3	2 45	0 9 a.	10 30	♆ stationary.
26	5 9	20.0	3 25	0 49	11 10	. . . . .
27	5 52	32.6	4 9	1 33	11 54	3*d. Sunday after Trinity.* ☿ stat.
28	6 34	45.0	5 8	2 32	0 53 a.	Battle of Monmouth, 1778.
29	7 16	57.3	6 21	3 45	2 6	*St. Peter.*
30	8 0	3 9.2	7 37	5 1	3 22	Tax on Tea, Paper, &c. 1767.

Fortune, like the milky way, is a cluster of small, twinkling, nameless virtues. *Bacon.*

Moon's Equatorial Parallax and Horizontal Semidiameter, in *seconds*.

d.	e. p.	s. d.	d.	e. p.	s. d.	d.	e. p.	s. d.
1	3258″	891″	12	3550′	967″	22	3361″	916″
2	289	96	13	557	69	23	325	06
3	316	904	14	559	70	24	294	898
4	347	12	15	555	69	25	272	92
5	380	21	16	545	66	26	258	88
6	414	30	17	528	61	27	253	86
7	447	39	18	504	55	28	259	88
8	476	47	19	472	46	29	276	93
9	502	54	20	437	36	30	302	900
10	523	60	21	398	26	31	334	09
11	538	64						

USEFUL REMARKS.

Since custom is the powerful magistrate of man's life, let men, by all means, endeavour to obtain good customs.

He that follows his recreation instead of his business, shall in a little time have no business to follow.

There is no condition that does not sit well upon a wise man.

The laboring man, in the present age, if he does but read, has more helps to wisdom than Solomon had.

To choose time, is to save time; and an unseasonable motion is but beating the air.

Days of the Month.	Days of the Week.	Sun rises and sets. Boston, &c.	New York, &c.	Washington, &c.	Charleston, &c.	New Orleans, &c.	Moon sets and rises. Boston, &c.	New York, &c.	Washington, &c.	Charleston, &c.	New Orleans, &c.
1	Th.	4 28 S	4 33 S	4 39 S	4 56 S	5 3 7	1 27m.	1 30m.	1 32m.	1 40m.	1 43m.
2	F.	29	34	40	56	3	2 1	2 5	2 7	2 17	2 21
3	S.	29	34	40	56	3	2 39	2 43	2 47	2 59	3 3
4	*Su.*	29	34	40	56	3	rises.	rises.	rises.	rises.	rises.
5	M.	30	35	41	57	4	7 4 a.	7 0 a.	6 56 a.	6 42 a.	6 37 a.
6	Tu.	30	35	41	57	4	7 51	7 47	7 43	7 31	7 27
7	W.	30	35	41	57	4	8 36	8 32	8 29	8 19	8 15
8	Th.	31	36	42	58	5	9 20	9 18	9 15	9 7	9 4
9	F.	31	36	42	58	5	9 52	9 51	9 48	9 43	9 41
10	S.	32	37	43	58	5	10 28	10 27	10 26	10 24	10 23
11	*Su.*	32	37	43	59	6	11 1	11 1	11 1	11 1	11 2
12	M.	33	38	44	59	6	11 35	11 36	11 37	11 40	11 42
13	Tu.	34	39	45	5 0 7	7	. . .	. . .	. . .	. . .	. . .
14	W.	34	39	45	0	7	0 12m.	0 14m.	0 16m.	0 22m.	0 25m.
15	Th.	35	40	46	1	8	0 51	0 54	0 56	1 5	1 9
16	F.	36	41	46	1	8	1 33	1 37	1 40	1 52	1 56
17	S.	37	42	47	1	8	2 20	2 24	2 27	2 40	2 45
18	*Su.*	37	42	47	2	9	3 15	3 19	3 23	3 37	3 42
19	M.	38	43	48	2	9	sets.	sets.	sets.	sets.	sets.
20	Tu.	39	44	49	3	10	7 46 a.	7 42 a.	7 39 a.	7 29 a.	7 25 a.
21	W.	40	45	50	3	10	8 23	8 20	8 18	8 9	8 7
22	Th.	41	46	51	4	11	8 57	8 55	8 53	8 47	8 45
23	F.	42	47	51	4	11	9 29	9 28	9 27	9 24	9 22
24	S.	43	48	52	5	12	9 58	9 58	9 57	9 57	9 56
25	*Su.*	44	48	53	6	12	10 25	10 26	10 26	10 28	10 29
26	M.	45	49	54	7	13	10 54	10 55	10 56	11 1	11 3
27	Tu.	46	50	55	8	14	11 24	11 26	11 28	11 35	11 37
28	W.	47	52	56	9	14	11 57	. . .	. . .	. . .	. . .
29	Th.	48	52	57	9	15	. . .	0 0m.	0 3m.	0 12m.	0 15m.
30	F.	49	53	57	10	16	0 33m.	0 37	0 40	0 51	0 55
31	S.	50	54	58	11	16	1 13	1 17	1 21	1 34	1 38

Full Moon, 5th day, 9h. 16m. A.
Last Quarter, 12th 10 29 A.
New Moon, 19th day, 7h. 6m. A.
First Quarter, 27th 3 28 A.

Southing and Declination of the Planets.

	1st day.		7th day.		13th day.		19th day.		25th day.	
	Souths. h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′
♅	0 20m.	22 54 s.	11 47 a.	22 59 s.	11 20 a	23 4 s.	10 52 a.	23 9 s.	10 26 a.	23 13 s.
♄	2 11	18 30	1 45m.	18 33	1 20m.	18 37	0 55m.	18 41	0 30m.	18 44
♃	3 48	0 30 n.	3 24	0 35 n.	3 0	0 31 n.	2 35	0 19 n.	2 10	0 1 n.
♂	4 45	8 0 s.	4 31	7 7 s.	4 16	6 20 s.	4 1	5 40 s.	3 44	5 7 s.
☿	6 27	0 29	6 9	0 9	5 50	0 8 n.	5 31	0 18 n.	5 12	0 24 n.
♀	9 6	17 29 n.	9 10	19 0 n.	9 14	20 16	9 18	21 16	9 24	21 57
☉	10 40	19 3	10 31	20 14	10 34	21 40	10 49	22 39	11 13	22 33
☽	2 35 a.	17 0	2 13 a.	16 48	1 52 a.	16 35	1 30 a.	16 22	1 9 a.	16 8
☊	7 33	7 25 s.	7 10	7 40 s.	6 48	8 20 s.	6 27	9 1 s.	6 7	9 45 s.
☋	7 54	23 8 n.	7 30	22 19 n.	7 8	21 26 n.	6 46	20 31 n.	6 25	19 34 n.

Days of the Month.	Moon souths.	Equation of Time. Add to app. Time.	High water. Boston, &c.	New York, &c.	Charleston, &c.	PHENOMENA AND OBSERVATIONS. *Sundays and other Remarkable Days.*
1	8 45 a.	3′ 21.0″	8 41 a.	6 5 a.	4 26 a.	☌ ☽ ♈ ☍. Bat. of the Boyne, 1690.
2	9 32	32.4	9 32	6 56	5 17	Earth farthest from the Sun.
3	10 21	43.7	10 15	7 39	6 0	Capture of Fort Erie, 1814.
4	11 12	54.6	10 55	8 19	6 40	*4th S. aft. Trin.* Dec. of Ind. 1776.
5	☿	4 5.2	11 34	8 58	7 19	☿ ♅ ☉ Brit. bombard Cadiz, 1797.
6	0 4m.	15.4	. . .	9 36	7 57	Oc. of d ☽. Bat. of Chippewa, 1814.
7	0 57	25.4	0 12m.	10 13	8 34	St. Domingo surrend. to Brit. 1809.
8	1 50	34.9	0 49	10 53	9 14	Greatest west. elong. of ☿.
9	2 42	44.1	1 29	11 34	9 55	Defeat of Braddock, 1755.
10	3 34	52.9	2 10	. . .	10 39	English took Gibraltar, 1704.
11	4 25	5 1.3	2 54	0 18m.	11 27	*5th Sunday after Trinity.*
12	5 16	9.4	3 42	1 6	. . .	☋ stationary. Erasmus died, 1536.
13	6 8	16.9	4 41	2 5	0 26m.	☽ in perigee.
14	7 1	24.1	5 58	3 22	1 43	Capture of the Bastile, 1789.
15	7 56	30.8	7 24	4 48	3 9	☌ ☽ f ☿. Bonap. sur. to Brit. 1815.
16	8 51	36.9	8 38	6 2	4 23	Oc. of ☌ ☿. Stony Point tak. 1779.
17	9 48	42 7	9 38	7 2	5 23	. . . . .
18	10 45	48.0	10 29	7 53	6 14	*6th Sunday after Trinity.*
19	11 40	52.6	11 13	8 37	6 58	George IV. crowned, 1821.
20	0 34a.	56.8	11 54	9 18	7 39	Fast Day, 1775.
21	1 25	6 0.4	0 31 a.	9 55	8 16	Inquisition re-estab. in Spain, 1814.
22	2 13	3.4	1 5	10 29	8 50	Battle of Falkirk, 1298.
23	2 59	5.9	1 38	11 2	9 23	☉ enters ♌.
24	3 43	7.8	2 10	11 34	9 55	. . . . .
25	4 26	9.1	2 44	0 8 a.	10 29	*7th Sunday aft. Trin. St. James.*
26	5 8	9.8	3 22	0 46	11 7	Pope Paul II. died, 1471.
27	5 51	9.8	4 9	1 33	11 54	Ticonderoga taken, 1759.
28	6 36	9.2	5 13	2 37	0 58 a.	Robespierre guillotined, 1794.
29	7 22	8.1	6 32	3 56	2 17	. . . . .
30	8 10	6.3	7 51	5 15	3 36	William Penn died, 1718.
31	9 0	3.9	8 55	6 10	4 40	Peace of Nimeguen, 1678.

Moon's Equatorial Parallax and Horizontal Semidiameter, in *seconds*.

d.	e. p.	s. d.	d.	e. p.	s. d.	d.	e. p.	s. d.
1	3374″	919″	12	3526″	961″	22	3260″	888″
2	416	31	13	504	55	23	252	86
3	459	43	14	479	48	24	243	85
4	498	53	15	451	40	25	256	87
5	531	62	16	421	32	26	274	92
6	556	69	17	390	24	27	302	900
7	571	73	18	359	15	28	339	10
8	577	75	19	329	07	29	384	22
9	574	74	20	302	00	30	434	36
10	563	71	21	278	893	31	486	50
11	547	67						

USEFUL REMARKS.

It is the excess, not the nature of our passions, that is perishable. Like the trees which grew by the tomb of Protesilaus, the passions flourish till they reach a certain height; but no sooner is that height attained, than they wither away.

The littlest feeling of all is a delight in contemplating the littleness of other people. Nothing is more contemptible than habitual contempt.

What a prodigy would wisdom be, if it were but blessed with a memory as keen and constant as that of interest.

Judge of a jest when the laugh is over.—*Bac.*

Days of the Month.	Days of the Week.	Sun rises and sets. Boston, &c.	New York, &c.	Washington, &c.	Charleston, &c.	New Orleans, &c.	Moon sets and rises. Boston, &c.	New York, &c.	Washington, &c.	Charleston, &c.	New Orleans, &c.
1	*Su.*	4 51 8	4 55 8	4 59 8	5 12 7	5 17 7	1 54m.	1 58m.	2 2m.	2 10m.	2 15m.
2	M.	52	56	5 0 7	13	17	2 52	2 56	3 0	3 14	3 19
3	Tu.	53	57	1	13	18	rises.	rises.	rises.	rises.	rises.
4	W.	54	58	2	14	18	7 12a.	7 8a.	7 6a.	6 56a.	6 53a.
5	Th.	55	59	3	15	19	7 50	7 48	7 46	7 39	7 36
6	F.	56	5 0 7	4	15	20	8 27	8 26	8 25	8 21	8 19
7	S.	57	1	5	16	21	9 3	9 3	9 3	9 2	9 1
8	*Su.*	58	2	6	17	22	9 38	9 39	9 40	9 42	9 43
9	M.	59	3	7	17	22	10 13	10 15	10 17	10 22	10 24
10	Tu.	5 0 7	4	8	18	23	10 51	10 54	10 56	11 4	11 8
11	W.	2	5	9	19	24	11 33	11 37	11 40	11 50	11 54
12	Th.	3	6	10	20	25	. . .	. . .	. . .	. . .	. . .
13	F.	4	7	11	20	25	0 19m.	0 23m.	0 27m.	0 39m.	0 44m.
14	S.	5	8	12	21	26	1 10	1 14	1 18	1 31	1 36
15	*Su.*	7	9	13	22	27	2 5	2 9	2 13	2 26	2 31
16	M.	8	11	14	23	28	3 6	3 10	3 14	3 26	3 30
17	Tu.	9	12	15	23	28	sets.	sets.	sets.	sets.	sets.
18	W.	10	13	16	24	29	6 59a.	6 57a.	6 55a.	6 48a.	6 45a.
19	Th.	12	14	18	25	30	7 31	7 30	7 29	7 24	7 22
20	F.	13	16	19	26	31	8 2	8 1	8 1	7 59	7 58
21	S.	14	17	20	27	32	8 31	8 31	8 31	8 32	8 32
22	*Su.*	16	18	21	28	33	8 59	9 0	9 1	9 4	9 5
23	M.	17	19	22	29	33	9 28	9 30	9 32	9 37	9 40
24	Tu.	18	20	23	30	34	10 0	10 3	10 5	10 13	10 17
25	W.	20	22	24	31	35	10 34	10 38	10 41	10 51	10 54
26	Th.	21	23	25	32	36	11 12	11 16	11 20	11 32	11 36
27	F.	23	25	27	33	37	11 55	11 59	. . .	. . .	. . .
28	S.	24	26	28	34	38	. . .	. . .	0 3m.	0 16m.	0 20m.
29	*Su.*	25	27	29	35	38	0 44m.	0 48m.	0 52	1 6	1 11
30	M.	27	29	31	36	39	1 39	1 43	1 46	1 59	2 4
31	Tu.	28	30	32	37	40	2 40	2 44	2 47	2 59	3 3

Full Moon, 4th day, 7h. 49m. M. | New Moon, 18th day, 6h. 45m. M.
Last Quarter, 11th 3 0 M. | First Quarter, 26th 8 55 M.

Southing and Declination of the Planets.

	1st day.		7th day.		13th day.		19th day.		25th day.	
	Souths. h. m	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′
☉	1 39m.	0 30 s.	1 13m.	1 9 s.	0 46m.	1 54 s.	0 20m.	2 47 s.	11 50 a.	3 47 s.
☽	3 24	4 38	3 5	4 24	2 45	4 18	2 23	4 22	2 0m.	4 34
♇	4 50	0 25 n.	4 30	0 20 n.	4 9	0 8 n.	3 48	0 10	3 27	0 31
☿	9 32	22 18	9 40	22 13	9 48	21 45	9 56	20 55 n.	10 5	19 44 n.
☾	11 47	20 27	0 15 a.	17 13	0 37 a.	13 10	0 55 a.	8 47	1 9 a.	4 16
♄	0 46 a.	15 52	0 25	15 38	0 6	15 24	11 47m.	15 9	11 28m.	14 55
♅	5 44	10 37 s.	5 26	11 24 s.	5 9	12 11 s.	4 53 a.	12 58 s.	4 37 a.	13 45 s.
♁	6 2	18 26 n.	5 43	17 26 n.	5 25	16 27 n.	5 8	15 28 n.	4 52	14 30 n.
♃	9 55	23 17 s.	9 30	23 20 s.	9 5	23 23 s.	8 41	23 24 s.	8 18	23 26 s.
♇	11 57	18 48	11 33	18 52	11 9	18 56	10 46	19 0	10 23	19 3

Days of the Month.	Moon souths.	Equation of Time. Add to App. Time.	High water. Boston, &c.	High water. New York, &c.	High water. Washington, &c.	PHENOMENA AND OBSERVATIONS. *Sundays and other Remarkable Days.*
1	9 52 a.	6′ 0.8″	9 47 a.	7 11 a.	5 32 a.	*8th Sun. after Trinity. Lammas.*
2	10 45	5 57.2	10 32	7 56	6 17	Battle of Blenheim, 1704.
3	11 39	52.9	11 13	8 37	6 58	Columbus *first* sailed for Am. 1492.
4	☌	48.0	11 53	9 17	7 38	Sup. ☌ ☿ ☉.
5	0 33m.	42.6	. . .	9 57	8 18	Battle of Brownstown, 1812.
6	1 27	36.5	0 33m.	10 36	8 57	. . . . .
7	2 20	29.8	1 12	11 18	9 39	Queen Caroline of G. B. died, 1821.
8	3 12	22.6	1 54	. . .	10 22	*9th Sunday after Trinity.*
9	4 5	14.8	2 37	0 1m.	11 10	. . . . .
10	4 58	6.5	3 25	0 49	. . .	. . . . .
11	5 52	4 57.6	4 22	1 46	0 7m.	Earthquake of St. Michael's, 1810.
12	6 47	48.1	5 34	2 58	1 19	☌ ☽ ☌ ☌. ☌ ♀ p □, dist. 30″.
13	7 43	38.1	7 3	4 27	2 48	☿ in perihelion.
14	8 39	27.7	8 24	5 48	4 9	☌ ♄ ☉.
15	9 34	16.7	9 26	6 50	5 11	10*th Sunday after Trinity.*
16	10 28	5.1	10 17	7 41	6 2	Battle of Bennington, 1777.
17	11 19	3 53.1	11 0	8 24	6 45	☉ eclipsed, invisible.
18	0 8 a.	40.5	11 37	9 1	7 22	☿ stat. Dr. Beattie died, 1803.
19	0 56	27.5	0 11 a.	9 35	7 56	Guerriere taken, 1812.
20	1 40	13.9	0 42	10 6	8 27	Indians def. at the Miami, 1794.
21	2 24	2 59.9	1 11	10 35	8 56	Great earthquake at Palermo, 1726.
22	3 7	45.4	1 41	11 5	9 26	11*th Sunday after Trinity.*
23	3 50	30.3	2 13	11 37	9 58	☉ enters ♍. Herschel died, 1822.
24	4 34	15.0	2 50	0 14 a.	10 35	*St Bartholomew.* Bat. of Bladens-
25	5 19	1 59.1	3 33	0 57	11 18	☌ ☊ ☉. [burg, 1814.
26	6 6	42.8	4 30	1 54	0 15 a.	☊ stationary.
27	6 55	26.0	5 44	3 8	1 29	Battle of Long Island, 1776.
28	7 45	8.9	7 8	4 32	2 53	Gen. Moreau killed, 1813.
29	8 37	0 51.4	8 26	5 50	4 11	12*th Sunday after Trinity.*
30	9 31	33.5	9 25	6 49	5 10	. . . . .
31	10 25	15.3	10 12	7 36	5 57	Great fire in NewYork, 1816.

Moon's Equatorial Parallax and Horizontal Semidiameter, in *seconds*.

d.	e. p.	s. d.	d.	e. p.	s. d.	d.	e. p.	s. d.
1	3535″	963″	11	3448″	940″	21	3240″	883″
2	577	75	12	412	30	22	250	86
3	608	83	13	379	21	23	268	91
4	625	88	14	348	12	24	295	98
5	626	88	15	321	05	25	332	908
6	615	85	16	296	898	26	378	21
7	591	79	17	275	92	27	431	35
8	560	70	18	258	88	28	488	50
9	523	60	19	246	85	29	545	66
10	435	49	20	240	83	30	597	80

USEFUL REMARKS.

Order in affairs is one of the things on which a man's success in life most especially depends. The rules of order are mostly summed up in these two precepts:—

1. A place for every thing; and every thing in its place.

2. A time for every thing; and every thing in its time.

It is shameful for a man to live as a stranger in his own country and to be uninformed of her affairs and interests. *Manutius.*

That pleasure only is according to nature, which never cloys. *Bacon.*

Nothing can constitute good breeding that has not good nature for its foundation. We are always clever with those who believe we think as they do.

Days of the Month.	Days of the Week.	Sun rises and sets. Boston, &c.	New York, &c.	Washington, &c.	Charleston, &c.	New Orleans, &c.	Moon rises and sets. Boston, &c.	New York, &c.	Washington, &c.	Charleston, &c.	New Orleans, &c.
1	W.	5 30 7	5 31 7	5 33 7	5 39 7	5 40 7	5 50a.	5 47a.	5 45a.	5 37a.	5 33a.
2	Th.	31	32	34	40	41	6 30	6 28	6 27	6 22	6 19
3	F.	32	34	35	41	42	7 7	7 6	7 6	7 4	7 3
4	S.	33	35	36	42	43	7 43	7 43	7 44	7 45	7 46
5	*Su.*	35	36	38	43	44	8 19	8 20	8 21	8 26	8 28
6	M.	36	37	39	44	45	8 57	9 0	9 1	9 9	9 12
7	Tu.	37	38	40	45	46	9 39	9 43	9 45	9 55	9 59
8	W.	39	40	41	46	47	10 24	10 28	10 31	10 43	10 47
9	Th.	40	41	42	47	48	11 14	11 18	11 22	11 35	11 40
10	F.	42	43	44	48	49	. . .	. . .	. . .	. . .	. . .
11	S.	43	44	45	49	50	0 8m.	0 12m.	0 16m.	0 30m.	0 35m.
12	*Su.*	44	45	46	50	51	1 6	1 10	1 14	1 27	1 32
13	M.	46	47	47	51	51	2 7	2 11	2 14	2 26	2 30
14	T.	47	48	48	52	52	3 7	3 10	3 13	3 22	3 26
15	W.	49	50	50	53	53	4 7	4 9	4 11	4 18	4 21
16	Th.	50	51	51	54	54	sets.	sets.	sets.	sets	sets.
17	F.	52	52	52	55	55	6 40a.	6 40a.	6 40a.	6 40a.	6 40a.
18	S.	53	53	54	56	56	7 8	7 9	7 10	7 12	7 13
19	*Su.*	54	55	55	57	57	7 38	7 39	7 41	7 46	7 48
20	M.	56	57	57	58	58	8 9	8 12	8 14	8 21	8 24
21	Tu.	57	58	58	59	59	8 42	8 46	8 48	8 58	9 1
22	W.	59	59	59	59	59	9 18	9 22	9 25	9 37	9 40
23	Th.	6 0 6	6 0 6	6 0 6	6 0 6	6 0 6	9 58	10 2	10 6	10 19	10 23
24	F.	2	2	1	1	1	10 43	10 47	10 51	11 4	11 9
25	S.	3	3	3	2	2	11 34	11 38	11 42	11 55	. . .
26	*Su.*	5	4	4	3	3	. . .	. . .	. . .	. . .	0 1m.
27	M.	6	5	5	4	4	0 31m.	0 35m.	0 39m.	0 50m.	0 55
28	Tu.	7	7	6	5	5	1 34	1 38	1 41	1 51	1 55
29	W.	8	8	7	6	6	2 41	2 44	2 47	2 54	2 57
30	Th.	10	10	9	7	7	3 50	3 51	3 54	3 59	4 1

Full Moon, 2d day, 5h. 30m. A.
Last Quarter, 9th 8 51 M.

New Moon, 16th day, 9h. 20 m. A.
First Quarter, 25th 1 45 M.

Southing and Declination of the Planets.

	1st day.		7th day.		13th day.		19th day.		25th day.	
	Souths. h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′
☿	1 33m.	4 58 s.	1 6m.	5 24 s.	0 39m.	5 52 s.	0 11m.	6 19 s.	11 37 a.	6 38 s.
♎	3 0	1 6	2 36	1 39	2 12	2 15	1 47	2 54	1 21m.	3 33
♀	10 14	17 53 n.	10 22	16 0 n.	10 29	13 49 n.	10 36	11 25 n.	10 42	8 49 n.
♄	11 5	14 37	10 46	14 22	10 28	14 8	10 9	13 56	9 50	13 41
☿	1 21a.	0 48 s.	1 28 a.	4 50 s.	1 32 a.	8 28 s.	1 33 a.	11 28 s.	1 27 a.	13 32 s.
♃	4 19	14 41	4 5	15 27	3 51	16 13	3 37	16 57	3 24	17 41
♂	4 33	13 23 n.	4 18	12 27 n.	4 3	11 33 n.	3 48	10 41 n.	3 34	9 51 n.
♅	7 52	23 27 s.	7 30	23 28 s.	7 9	23 28 s.	6 49	23 27 s.	6 29	23 26 s.
♄	9 56	19 6	9 34	19 9	9 12	19 12	8 50	19 13	8 28	19 15
☉	11 17	5 11	10 51	6 18	10 26	7 23	10 1	8 25	9 27	9 24

Days of the Month.	Moon southing.	Equation of Time. Sub. from app. Time.	High water. Boston, &c.	High water. New York, &c.	High water. Charleston, &c.	PHENOMENA AND OBSERVATIONS. *Sundays and other Remarkable Days.*
1	11 20 a.	0′ 3.2	10 55 a.	8 19 a.	6 40 a.	Avon taken by the Wasp, 1814.
2	☾	22.1	11 38	9 2	7 23	☽ eclipsed; partly visible.
3	0 15m.	41 2	. . .	9 43	8 4	Occultation of φ ♒.
4	1 9	1 0.6	0 19m.	10 25	8 46	Boxer tak. by the Enterprise, 1813.
5	2 4	20.3	1 1	11 8	9 29	13*th Sun. after Trinity.*
6	2 59	40.2	1 44	11 52	10 13	♅ stat. New London burnt, 1781.
7	3 54	2 0.2	2 28	. . .	11 2	Boston settled, 1630, O. Style.
8	4 50	20.5	3 17	0 41m.	11 59	Battle of Eutaw Springs, 1781.
9	5 46	40.9	4 14	1 38	. . .	United States first so styled, 1776.
10	6 42	3 1.4	5 26	2 50	1 11m.	Victory on Lake Erie, 1813.
11	7 37	22.0	6 56	4 20	2 41	" " Champlain, 1814.
12	8 31	42.8	8 16	5 40	4 1	14*th Sunday after Trinity.*
13	9 23	4 3.6	9 18	6 42	5 3	♂ ♀ ♄ dis. 14′. C. J. Fox d. 1806.
14	10 12	24.5	10 5	7 29	5 50	Gen. Wash. evac. N. York, 1776.
15	10 59	45.4	10 46	8 10	6 31	N. York tak. by the British, 1776.
16	11 44	5 6.4	11 21	8 45	7 6	☉ eclipsed; invisible.
17	0 28 a.	27.4	11 53	9 17	7 38	Greatest western elong. of ☿.
18	1 12	48.4	0 23 a.	9 47	8 8	☾ ♂ ☉.
19	1 55	6 9.4	0 51	10 15	8 36	15*th Sunday after Trinity.*
20	2 39	30.4	1 21	10 45	9 6	Siege of Fort Erie raised, 1814.
21	3 24	51.3	1 53	11 17	9 38	*St. Matthew.*
22	4 9	7 12.1	2 27	11 51	10 12	George III. crowned, 1761.
23	4 56	32.9	3 11	0 35 a.	10 56	☉ enters ♎. Autumn begins.
24	5 45	53.6	4 3	1 27	11 48	. . . .
25	6 35	8 14.1	5 12	2 36	0 57 a.	Arnold deserted, 1780.
26	7 27	34.5	6 40	4 4	2 25	16*th Sun. after Trin.* ♂ ♀ ☌ ☊.
27	8 20	54.7	8 1	5 25	3 46	Philadelphia taken, 1777.
28	9 13	9 14.7	9 4	6 28	4 49	Buchanan died, 1582.
29	10 8	34.6	9 54	7 18	5 39	*St. Michael.*
30	11 3	54.2	10 40	8 4	6 25	☿ stat. Yorktown invested, 1781.

Moon's Equatorial Parallax and Horizontal Semidiameter, in *seconds*.

d.	e. p.	s. d.	d.	e. p.	s. d.	d.	e. p.	s. d.
1	3637″	991	12	3321″	905″	22	3291″	897
2	662	98	13	293	897	23	325	906
3	669	1000	14	271	91	24	367	17
4	658	997	15	255	87	25	417	31
5	630	89	16	243	84	26	472	46
6	590	78	17	236	82	27	530	62
7	542	65	18	235	82	28	586	77
8	491	51	19	238	82	29	634	90
9	441	38	20	249	85	30	668	99
10	395	25	21	266	90	31	684	1004
11	355	14						

USEFUL REMARKS.

The wrangler, the higgler, the word-hunter, are incapable of great thoughts, or actions. *Lavater.*

He who partakes of another's joys, is a more humane character than he who partakes in his griefs. *Lavater.*

Kiss the hand of him who can renounce what he has publicly taught, when convicted of his error, and who, with heartfelt joy, embraces truth, though with the sacrifice of favorite opinions. *Lavater.*

You are not very good, if you are not better than your best friends imagine you to be. *Lavater.*

Days of the Month.	Days of the Week.	Sun rises and sets. Boston, &c.	New York, &c.	Washington, &c.	Charleston, &c.	New Orleans, &c.	Moon rises and se Boston, &c.	New York, &c.	Washington, &c.	Charleston, &c.	New Orleans, &c.
1	F.	6 12 6	6 11 6	6 11 6	6 9 6	5 7 6	5 46 a.	5 46 a.	5 45 a.	5 45 a.	5 44 a.
2	S.	13	12	12	10	S	6 21	6 22	6 24	6 26	6
3	*Su.*	15	14	13	11	9	7 1	7 3	7 5	7 11	7 13
4	M.	16	15	14	12	10	7 43	7 46	7 48	7 57	8 1
5	Tu.	17	16	15	13	11	8 28	8 32	8 35	8 47	8 51
6	W.	18	17	16	14	12	9 18	9 22	9 26	9 39	9 43
7	Th.	20	19	17	15	13	10 12	10 16	10 20	10 34	10 39
8	F.	21	20	18	16	14	11 9	11 13	11 17	11 30	11 35
9	S.	23	21	20	17	15	. . .	. . .	. . .	. . .	. . .
10	*Su.*	24	22	21	18	15	0 9m.	0 13m.	0 17m.	0 29m.	0 33m.
11	M.	26	24	23	19	16	1 9	1 12	1 15	1 25	1 29
12	Tu.	27	25	24	20	17	2 10	2 12	2 15	2 22	2 25
13	W.	28	27	25	21	18	3 11	3 12	3 15	3 20	3 21
14	Th.	30	28	26	22	19	4 10	4 11	4 12	4 15	4 15
15	F.	31	29	27	22	20	sets.	sets.	sets.	sets.	sets.
16	S.	32	30	28	23	21	5 49 a.	5 50 a.	5 51 a.	5 55 a.	5 57 a.
17	*Su.*	34	32	30	24	22	6 18	6 20	6 22	6 28	6 31
18	M.	35	33	31	25	22	6 50	6 53	6 56	7 5	7 8
19	Tu.	37	35	33	26	23	7 25	7 29	7 32	7 42	7 47
20	W.	38	36	34	27	24	8 3	8 7	8 11	8 23	8 28
21	Th.	40	38	35	28	25	8 46	8 50	8 54	9 7	9 12
22	F.	41	39	36	29	26	9 34	9 38	9 42	9 56	10 1
23	S.	42	40	37	30	27	10 27	10 31	10 34	10 48	10 52
24	*Su.*	43	41	38	30	28	11 25	11 29	11 32	11 44	11 48
25	M.	45	42	39	31	28	. . .	. . .	. . .	. . .	. . .
26	Tu.	47	44	41	32	29	0 28m.	0 31m.	0 34m.	0 43m.	0 46m.
27	W.	48	45	42	33	30	1 34	1 36	1 38	1 45	1 48
28	Th.	50	47	43	34	31	2 44	2 45	2 47	2 50	2 52
29	F.	51	48	44	25	32	rises.	rises.	rises.	rises.	rises.
30	S.	52	49	45	36	33	4 57 a.	4 5 a.	4 59 a.	5 4 a.	5 a.
31	*Su.*	54	50	46	37	34	5 37	5 39	5 42	5 49	5 5

Full Moon,	1st day,	2h.	49m.	M.	First Quarter,	24th day, 5h.	12m. A.
Last Quarter,	8th	5	25	A.	Full Moon,	31st 0	11 A.
New Moon,	16th	2	24	A.			

Southing and Declination of the Planets.

	1st day.		7th day.		13th day.		19th day.		25th day.	
	Souths. h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m	Dec. ° ′	*Souths.* h. m.	Dec. ° ′
☿	0 54m	4 12s.	0 27m.	4 48s.	11 54a.	5 20s.	11 26a.	5 46s.	10 58a.	6 5s.
♀	9 32	13 29n.	9 12	13 17n.	8 52m.	13 6n.	8 32m.	12 55n.	8 12m.	12 46n.
☉	10 48	6 4	10 54	3 11	10 59	0 15	11 4	2 43s.	11 9	5 40s.
☾	1 9a.	14 8s.	0 37a.	12 30s.	11 53	8 29s.	11 14	4 39	10 56	3 45
♂	3 11	18 24	2 58	19 5	2 45a.	19 44	2 32a.	20 22	2 19a.	20 58
♃	3 20	9 8n.	3 6	8 18n.	2 52	7 35n.	2 38	6 56n.	2 23	6 20n.
♄	6 9	23 25s.	5 50	23 23s.	5 31	23 21s.	5 11	23 17s.	4 52	23 14s.
♅	8 6	19 16	7 44	19 17	7 21	19 17	6 59	19 17	6 36	19 16
♆	9 14	10 16	8 52	11 3	8 30	11 41	8 9	12 13	7 49	12 37
☊	10 10	6 51	10 43	6 52	10 18	6 41	9 54	6 20	9 32	5 48

Days of the Month.	Moon souths.	Equation of Time. Sub. from App. Time.	High water. Boston, &c.	High water. New York, &c.	High water. Charleston, &c.	PHENOMENA AND OBSERVATIONS. *Sundays and other Remarkable Days.*
1	11 58a.	10′ 13.6″	11 25a.	8 49a.	7 10a.	1st steam b. from N. Y. to Alb. '07.
2	☊	32.6	. . .	9 32	7 53	□ ♅ ☉. Maj. André execut. 1780.
3	0 54m.	51.4	0 8m.	10 15	8 36	*17th Sunday after Trinity.*
4	1 50	11 9.8	0 51	11 0	9 21	Oc. of ☊. Bat. Germantown, '77.
5	2 48	27.9	1 36	11 46	10 7	Def. of Brit. Gen. Proctor, 1813.
6	3 46	45.6	2 22	. . .	10 57	☌ ☽ *a* ☊.
7	4 45	12 2.9	3 12	0 36m.	11 53	2d Bat. of Stillwater, 1777.
8	5 42	19.8	4 8	1 32	. . .	☿ stat. ☊ ☍ ☉.
9	6 36	36.2	5 18	2 42	1 3m.	Unsuc. attempt on Savannah, 1779
10	7 29	52.2	6 41	4 5	2 26	*18th Sunday after Trinity.*
11	8 18	13 7.7	8 1	5 25	3 46	Columbus disc. the Bahamas, 1492
12	9 6	22.7	9 2	6 26	4 47	Inf. ☌ of ☿.
13	9 51	37.1	9 50	7 14	5 35	☌ ♀ *η* ♏.
14	10 35	51.1	10 30	7 54	6 15	☌ ☽ *β* ♏. Wm. Penn born, 1644
15	11 18	14 4.4	11 3	8 27	6 48	President capt. the Swallow, 1812
16	0 1a.	17.3	11 34	8 58	7 19	♅ stationary.
17	0 44	29.5	0 4a.	9 28	7 49	*19th S. af. Tr.* Burgoyne sur. 1777.
18	1 29	41.2	0 33	9 57	8 18	*St. Luke.* Wasp capt. Frolic, 1812.
19	2 14	52.2	1 4	10 28	8 49	☌ stat. Cornwallis sur. 1781.
20	3 0	15 2.6	1 36	11 0	9 21	John Adams born, 1735.
21	3 47	12.4	2 12	11 36	9 57	☌ ☿ ♀. Bat. of Trafalgar, 1805.
22	4 36	21.6	2 54	0 18a.	10 39	Brit. def. at Red Bank, 1777.
23	5 26	30.2	3 43	1 7	11 28	☉ enters ♏. America disc. 1492.
24	6 17	38.0	4 48	2 12	0 33a.	*20th Sunday after Trinity.*
25	7 8	45 2	6 7	3 31	1 52	Capture of the Macedonian, 1812.
26	8 0	51.7	7 30	4 54	3 15	First Congress adjourned, 1774.
27	8 52	57.4	8 39	6 3	4 24	Greatest elong. of ☿.
28	9 46	16 2.5	9 33	6 57	5 18	Oc. ♀ ♒. *St. Simon and St. Jude.*
29	10 41	6.8	10 21	7 45	6 6	Steam Frigate launched, 1814.
30	11 36	10.3	11 6	8 30	6 51	□ of ♅.
31	☊	13.1	11 53	9 17	7 38	*21st Sunday after Trinity.*

Moon's Equatorial Parallax and Horizontal Semidiameter, in *seconds*.

d.	e. p.	s. d.	d.	e. p.	s. d.	d.	e. p.	s. d.
1	3681″	1003	11	3259″	888″	21	3366″	9.7
2	658	997	12	245	84	22	408	29
3	619	86	13	237	82	23	455	41
4	567	72	14	235	82	24	506	55
5	510	55	15	238	82	25	557	69
6	453	41	16	247	85	26	604	82
7	399	25	17	260	88	27	641	92
8	352	13	18	278	93	28	664	98
9	313	03	19	301	900	29	670	1000
10	282	894	20	331	08	30	657	996

USEFUL REMARKS.

A fool speaks all his mind; but a wise man reserves something for hereafter.

A man diligent in his business shall stand before kings; he shall not be ranked with the vulgar.

It is not in our stars, but in ourselves, that we are underlings. *Shakspeare.*

Every man's fortune is in his own hand; a wise man shall control the stars; every way is passable to virtue.

Trust him little who praises all, him less who censures all, and him least who is indifferent about all. *Lavater.*

The slaves of custom are the sport of time. *Bacon.*
All depraved affections are false valuations. *Bacon.*

Days of the Month.	Days of the Week.	Sun rises and sets. Boston, &c.	New York, &c.	Washington, &c.	Charleston, &c.	New Orleans, &c.	Moon rises and sets. Boston, &c.	New York, &c.	Washington, &c.	Charleston, &c.	New Orleans, &c.
1	M.	6 55 6	6 52	6 48	6 38	6 34	6 20 a.	6 23 a.	6 27 a.	6 36 a.	6 40 a.
2	Tu.	56	53	49	39	35	7 10	7 14	7 18	7 30	7 35
3	W.	57	54	50	40	36	8 4	8 8	8 12	8 26	8 31
4	Th.	58	55	51	41	36	9 2	9 6	9 10	9 24	9 29
5	F.	59	56	52	42	37	10 3	10 7	10 11	10 23	10 28
6	S.	7 1 5	57	54	43	38	11 5	11 9	11 12	11 23	11 27
7	*Su.*	2	58	55	44	38	. . .	. . .	. . .	. . .	. . .
8	M.	3	59	56	45	39	0 6m.	0 9m.	0 11m.	0 20m.	0 23m.
9	Tu.	4	7 0 5	57	45	40	1 6	1 8	1 10	1 16	1 18
10	W.	5	1	58	46	41	2 6	2 7	2 8	2 11	2 13
11	Th.	6	2	59	47	41	3 4	3 4	3 5	3 5	3 6
12	F.	7	3	7 0 5	47	42	4 2	4 1	4 1	3 59	3 58
13	S.	8	4	1	48	43	4 58	4 57	4 55	4 50	4 48
14	*Su.*	9	5	2	49	44	sets.	sets.	sets.	sets.	sets.
15	M.	10	6	3	49	44	5 27 a.	5 31 a.	5 34 a.	5 44 a.	5 48 a.
16	Tu.	11	7	4	50	45	6 2	6 6	6 9	6 21	6 25
17	W.	12	8	4	51	45	6 43	6 47	6 51	7 4	7 9
18	Th.	13	9	5	51	46	7 29	7 33	7 37	7 51	7 56
19	F.	14	10	6	52	47	8 19	8 23	8 27	8 41	8 46
20	S.	15	11	7	53	47	9 14	9 18	9 22	9 34	9 38
21	*Su.*	16	12	8	53	48	10 14	10 18	10 21	10 31	10 34
22	M.	17	13	9	54	49	11 17	11 19	11 22	11 30	11 33
23	Tu.	18	14	9	55	49	. . .	. . .	. . .	. . .	. . .
24	W.	19	14	10	55	50	0 22m.	0 23m.	0 26m.	0 31m.	0 33m.
25	Th.	20	15	11	56	51	1 30	1 31	1 32	1 34	1 35
26	F.	21	16	12	57	51	2 41	2 41	2 40	2 40	2 39
27	S.	22	17	13	58	52	3 53	3 52	3 51	3 46	3 44
28	*Su.*	23	18	13	58	52	rises.	rises.	rises.	rises.	rises.
29	M.	24	19	14	59	53	4 49 a.	4 53a.	4 56 a.	5 8 a.	5 12 a.
30	Tu.	25	20	14	59	33	5 40	5 44	5 48	6 1	6 6

Last Quarter, 7th day, 5h. 45m. M. | First Quarter, 23d day, 6h. 37m. M.
New Moon, 15th 8 43 M. | Full Moon, 29th 10 1 A.

Southing and Declination of the Planets.

	1st day.		7th day.		13th day.		19th day.		25th day.	
	Souths. h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′
♄	7 46m.	12 35n.	7 24m.	12 28n.	7 1m.	12 22n.	6 37m.	12 17n.	6 13m.	12 13n.
☿	10 55	6 12s.	11 4	9 38s.	11 16	13 19s.	11 28	16 47s.	11 40	19 50s.
♀	11 15	9 1	11 20	11 46	11 25	14 22	11 29	16 44	11 35	18 49
♀	2 3a.	21 37	1 49a.	22 7	1 35a.	22 36	1 21a.	23 2	1 6a.	23 25
♇	2 6	5 41n.	1 51	5 11n.	1 35	4 44n.	1 19	4 21n.	1 2′	4 2n.
♃	4 30	23 8s.	4 10	23 2s.	3 51	22 56s.	3 31	22 49s.	3 11	22 40s.
♅	6 9	19 15	5 46	19 13	5 22	19 11	4 58	19 9	4 33	19 6
♆	7 27	12 55	7 8	13 1	6 49	13 2	6 31	12 55	6 13	12 42
☽	9 7	5 0	8 47	4 11	8 28	3 14	8 10	2 11	7 52	1 4
☊	10 26	6 19	9 59	6 19	9 32	6 13	9 5	6 1	8 39	5 37

Days of the Month.	Moon souths.	Equation of Time. Sub. from App. Time.	High water. Boston, &c.	High water. New York, &c.	High water. Charleston, &c.	PHENOMENA AND OBSERVATIONS. *Sundays and other Remarkable Days.*
1	0 36m.	16′ 15.1″	. . .	10 3a.	8 24a.	*All Saints.* Boileau born, 1636.
2	1 35	16.3	0 39m.	10 49	9 10	Oc. of γ ♉. Bat. of F. Creek, 1813.
3	2 35	16.7	1 25	11 36	9 57	Fr. fleet sailed from Boston, 1778.
4	3 35	16.3	2 12	. . .	10 44	St. Clair defeated by Indians, 1791.
5	4 32	15.0	2 59	0 23m.	11 35	The America (74) launched, 1782.
6	5 26	12.9	3 50	1 14	. . .	Duke of Orleans guillotined, 1793.
7	6 17	9.9	4 50	2 14	0 35m.	22*d S. aft. Tr.* Pensacola tak. 1814.
8	7 6	6.0	6 3	3 27	1 48	Cortez entered Mexico, 1519.
9	7 52	1.3	7 22	4 46	3 7	Earthq. at Portsmouth, N. H. 1810.
10	8 36	15 55.7	8 23	5 52	4 13	Milton died, 1674, aged 66.
11	9 19	49.2	9 19	6 43	5 4	Battle of Williamsburg, 1813.
12	10 1	41.9	10 2	7 26	5 47	Russians defeated at Znaim, 1805.
13	10 44	33.8	10 38	8 2	6 23	Battle of Sheriffmuir, 1715.
14	11 27	24.7	11 11	8 35	6 56	23d *Sunday after Trinity.*
15	0 12a.	14.9	11 42	9 6	7 27	Herschel born, 1738.
16	0 57	4.2	0 12a.	9 36	7 57	Fort Washington taken, 1776.
17	1 44	14 52 6	0 44	10 8	8 29	☌ ☿ 1 ν & 2 ν ♎, dist. 18′ & 6′.
18	2 32	40.2	1 17	10 41	9 2	Fort Lee evacuated, 1776.
19	3 21	27.0	1 53	11 17	9 38	Occult. of d ♐.
20	4 11	12.9	2 33	11 57	10 18	Col. Tarleton def. by Sumpter, 1780.
21	5 1	13 58.1	3 19	0 43a.	11 4	24*th S. a. T.* N. C. (12th) a. c. '89.
22	5 51	42.5	4 15	1 39	0 0a.	☉ enters ♐. ☌ ☿ 41 ♎ dist. 2′.
23	6 41	26.1	5 24	2 48	1 9	First ascent in a balloon, 1782.
24	7 31	9.0	6 44	4 8	2 29	□ ☉ ♄. Dr. Tillotson died, 1694.
25	8 22	12 51.1	8 1	5 25	3 46	British evacuated N. York, 1783.
26	9 16	32.5	9 2	6 26	4 47	☌ ♀ ☊ ♎.
27	10 11	13.2	9 55	7 19	5 40	Battle of the Berezina, 1812.
28	11 9	11 53.2	10 44	8 8	6 29	*Advent Sunday.* ♕ stationary.
29	♌	32.5	11 32	8 56	7 17	Occult. of α ♉.
30	0 9m.	11.1	. . .	9 43	8 4	*St. Andrew.*

Moon's Equatorial Parallax and Horizontal Semidiameter, in *seconds*.

d.	e. p.	s. d.	d.	e. p.	s. d.	d.	e. p.	s. d.
1	3623	988	12	3242	883″	22	3493″	952
2	581	76	13	251	86	23	541	62
3	527	61	14	265	90	24	563	72
4	469	45	15	233	95	25	598	80
5	412	30	16	304	00	26	619	86
6	361	16	17	329	907	27	628	89
7	317	04	18	357	15	28	622	87
8	233	395	19	387	23	29	601	81
9	259	88	20	420	32	30	567	72
10	245	84	21	456	42	31	521	59
11	240	83						

USEFUL REMARKS.

Who makes too much or too little of himself, has a false measure for every thing. *Lavater.*

As they who first do honor to their family, are generally more worthy than those who succeed them, so innovations generally excel imitations. *Bacon.*

The more honesty a man has, the less he affects the air of a saint. The affectation of sanctity is a blotch on the face of piety. *Lavater.*

Many who imagine all things may be bought by their riches, forget they have sold themselves.

Days of the Month.	Days of the Week.	Sun rises and sets. Boston, &c.		New York, &c.		Washington, &c.		Charleston, &c.		New Orleans, &c.		Moon rises and sets. Boston, &c.	New York, &c.	Washington, &c.	Charleston, &c.	New Orleans, &c.
1	W.	7	26	5	7	21	5	7	15	5	7	0	5	6	54	6	6 38 a.	6 42 a.	6 46 a.	7 0 a.	7 5 a.
2	Th.		27			21			16			0			54		7 39	7 43	7 47	8 0	8 5
3	F.		27			22			16			0			54		8 41	8 45	8 49	9 1	9 5
4	S.		28			22			17			1			55		9 44	9 47	9 51	10 0	10 4
5	*Su.*		29			23			17			1			55		10 47	10 49	10 52	10 59	11 2
6	M.		29			23			18			1			55		11 48	11 49	11 51	11 56	11 58
7	Tu.		29			24			18			1			55		. . .	. . .	. . .	. . .	. . .
8	W.		30			24			19			2			56		0 49m.	0 49m.	0 50m.	0 52m.	0 53m.
9	Th.		30			25			19			2			56		1 46	1 46	1 46	1 45	1 44
10	F.		31			25			20			2			56		2 42	2 42	2 40	2 37	2 35
11	S.		31			26			20			2			56		3 39	3 37	3 35	3 29	3 26
12	*Su.*		31			26			20			3			57		4 36	4 33	4 30	4 22	4 18
13	M.		32			26			21			3			57		5 32	5 28	5 25	5 14	5 10
14	Tu.		32			27			21			3			57		sets.	sets.	sets.	sets.	sets.
15	W.		32			27			21			3			57		5 16 a.	5 20 a.	5 24 a.	5 38 a.	5 43 a.
16	Th.		32			27			21			3			57		6 5	6 9	6 13	6 27	6 31
17	F.		33			28			22			4			57		6 58	7 2	7 6	7 19	7 24
18	S.		33			28			22			4			58		7 57	8 1	8 4	8 15	8 19
19	*Su.*		33			28			22			4			58		8 59	9 2	9 5	9 13	9 17
20	M.		33			28			22			4			58		10 2	10 4	10 6	10 12	10 15
21	Tu.		33			28			22			4			58		11 7	11 8	11 9	11 12	11 14
22	W.		33			28			22			4			58		. . .	. . .	. . .	. . .	. . .
23	Th.		33			28			22			4			58		0 14m.	0 14m.	0 14m.	0 14m.	0 15m.
24	F.		33			28			22			4			58		1 23	1 22	1 21	1 18	1 18
25	S.		33			28			22			4			58		2 33	2 31	2 29	2 23	2 21
26	*Su.*		33			28			22			4			57		3 45	3 42	3 39	3 30	3 27
27	M		32			27			21			3			57		4 55	4 51	4 48	4 36	4 32
28	Tu.		32			27			21			3			57		rises.	rises.	rises.	rises.	rises.
29	W.		32			27			21			3			57		5 5 a.	5 9 a.	5 13 a.	5 27 a.	5 32 a.
30	Th.		32			27			21			3			57		6 7	6 11	6 15	6 27	6 32
31	F.		31			26			20			3			57		7 13	7 17	7 20	7 31	7 35

Last Quarter, 6th day, 10h. 8m. A. First Quarter, 22d day, 5h. 35m. A.
New Moon, 15th 3 12 M. Full Moon, 29th 8 54 M.

Southing and Declination of the Planets.

	1st day.		7th day.		13th day.		19th day.		25th day.	
	Souths. h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′	*Souths.* h. m.	Dec. ° ′
♄	5 48m.	12 11 n.	5 22m.	12 11 n.	4 56m.	12 11n.	4 30m.	12 13n.	4 3m.	12 17n.
♀	11 40	20 36 s.	11 46	22 2s.	11 52	23 6s.	11 58	23 42 s.	0 5a.	23 54s.
☿	11 54	22 19	0 8a.	24 7	0 23a.	25 10	0 39a.	25 24	0 54	24 43
♃	0 45a.	3 46n.	0 28	3 34n.	0 10	3 25n.	11 53m.	3 20n.	11 36m.	3 20n.
♅	0 51	23 46 s.	0 35	24 5s.	0 20	24 20s.	0 4a.	24 33 s.	11 49	24 43 s.
♆	2 50	22 30	2 30	22 20	2 9	22 9	1 48	21 56	1 27a.	21 43
☊	4 9	19 2	3 43	18 59	3 18	18 55	2 53	18 50	2 27	18 46
☋	5 55	12 24	5 38	11 59	5 20	11 29	5 3	10 55	4 36	10 15
☽	7 35	0 7n.	7 18	1 23n.	7 2	2 40n.	6 46	4 0n.	6 30	5 22n.
☉	8 13	5 11 s.	7 48	4 38s.	7 24	4 0s.	7 0	3 19s.	6 37	2 34 s.

Days of the Month.	Moon souths.	Equation of Time. Sub. from app. Time till the 25th.	High water. Boston, &c.	New York, &c.	Charleston, &c.	PHENOMENA AND OBSERVATIONS. *Sundays and other Remarkable Days.*
1	1 10m.	10′ 49.0″	0 19m.	10 29a.	8 50a.	Emperor Alexander I. died, 1825.
2	2 10	26.3	1 5	11 12	9 33	Bonaparte crowned Emperor, 1804.
3	3 7	2.9	1 48	11 55	10 16	Sup. ☌ ☿ ☉, ☌ ♀ ☿ oph. dist. 8′.
4	4 2	9 38 9	2 31	. . .	11 0	Washington took leave of army, '83.
5	4 54	14.3	3 15	0 39m.	11 48	*2d Sunday in Advent.*
6	5 41	8 49.2	4 3	1 27	. . .	Pope Clement esc. fr. prison, 1527.
7	6 27	23.4	5 0	2 24	0 45m.	Del. (1st) adopt. Constitution, '87.
8	7 10	7 57.2	6 9	3 33	1 54	Rhode Island taken, 1778.
9	7 52	30.4	7 21	4 45	3 6	☌ ☌ 10 Mayer, dist. 2′.
10	8 34	3.2	8 25	5 49	4 10	☌ ☊ 854 Mayer dist. 21′.
11	9 17	6 35.6	9 19	6 43	5 4	[(2d) adopt. Constit. 1787.
12	10 0	7.6	10 2	7 26	5 47	*3d Sunday in Advent.* Pennsylv.
13	10 45	5 39.2	10 38	8 2	6 23	♄ stat. Sam'l. Johnson died, 1784.
14	11 32	10.4	11 12	8 36	6 57	Washington died, 1799, aged 68.
15	0 20a.	4 41.4	11 46	9 10	7 31	[troyed in Boston, 1773.
16	1 9	12.1	0 20a.	9 44	8 5	☌ ♀ ♂ oph. ♀ 35′ N. Tea des-
17	1 58	3 42.6	0 53	10 17	8 38	Second Embargo, 1813.
18	2 48	12.9	1 29	10 53	9 14	N. Jersey (3d) adopt. Constitut. '87.
19	3 38	2 43.0	2 8	11 32	9 53	*4th S. in Ad.* Ft. Niagara tak. 1813.
20	4 27	13.1	2 51	0 15a.	10 36	Sup. ☌ ♀ ☉. Ply'th (M.) set. 1620.
21	5 16	1 43.1	3 39	1 3	11 24	*St. Thomas.* ☌ ☌ 20 Mayer, d. 1′.
22	6 5	13.1	4 36	2 0	0 21a.	WINTER begins. 1st Embarg. 1807.
23	6 55	0 43.1	5 46	3 10	1 31	Washington resigned his com. 1783.
24	7 47	13.1	7 9	4 33	2 54	Tr. of Peace signed at Ghent, 1814.
25	8 41	*Add.*	8 23	5 47	4 8	*Christmas Day.* Newton b. 1642.
26	9 38	0 46.6	9 24	6 48	5 9	*1st S. aft. Christmas. St. Stephen.*
27	10 37	1 16.3	10 18	7 42	6 3	*St. John.* Occult. of ♈ ♉.
28	11 37	45.8	11 7	8 31	6 52	*Innocents.* 1st def. of Brit. at N. Or-
29	♌	2 15 1	11 5	9 18	7 39	Frig. Java tak. 1812. [leans, 1814.
30	0 37m.	44.2	. . .	10 2	8 23	Buffalo taken and burnt, 1813.
31	1 34	3 13.1	0 38m.	10 42	9 3	Bank of N. America establish. 1781.

Sun's Semidiameter, Horizontal Parallax, and Latitude, and the Obliquity of the Ecliptic, for every 5th Day at Noon at Greenwich.

January.					February.				
D.	S. D.	H. P.	Lat.	Ob. of Ecl.	D.	S. D.	H. P.	Lat.	Ob. of Ecl.
	″	″	″	° ′ ″		″	″	″	° ′ ″
1	16 17.77	8.72	0.27 S.	23 27 31.55	5	16 14.62	8.69	0.68 S.	23 27 32.10
6	.69	.72	.71	.60	10	13.73	.69	.20	.20
11	.48	.72	.53	.66	15	12 74	.68	31 N.	.30
16	.15	.72	.07 N.	.73	20	11.66	.67	.23	.39
21	16 68	.72	.35	.81	25	10.52	.66	.32 S.	.47
26	.12	.71	.01 S.	.90					
31	15.42	.70	.57	32.00					

Sun's and Moon's Longitude, and Moon's Latitude, at apparent Noon at Greenwich.

January.				February.			
D.	Sun's Longitude.	Moon's Longitude.	Moon's Latitude	D.	Sun's Longitude.	Moon's Longitude.	Moon's Latitude.
	° ′ ″	° ′ ″	° ′ ″		° ′ ″	° ′ ″	° ′ ″
1	280 39 20	2 43 24	0 56 0 S.	1	312 12 43	55 43 46	4 44 7 S.
2	1 40 31	16 48 34	2 7 13	2	3 13 34	69 24 5	5 6 12
3	2 41 43	30 52 18	3 10 35	3	4 14 24	82 52 8	5 10 59
4	3 42 53	44 53 35	4 2 13	4	5 15 11	96 7 42	4 58 59
5	4 44 4	58 50 48	4 39 5	5	6 15 57	109 10 28	4 31 33
6	5 45 14	72 41 31	4 59 16	6	7 16 42	22 0 10	3 50 45
7	6 46 23	86 22 47	5 1 59	7	8 17 26	34 36 41	2 59 14
8	7 47 32	99 51 28	4 47 45	8	9 18 8	47 0 22	1 59 56
9	8 48 41	113 4 50	4 18 11	9	320 18 49	59 12 7	0 55 54 S.
10	9 49 49	26 1 3	3 35 44	10	1 19 28	71 13 32	0 9 53 N.
11	290 50 57	38 39 33	2 43 23	11	2 20 6	83 7 3	1 14 40
12	1 52 5	51 1 14	1 44 13	12	3 20 43	94 55 52	2 15 54
13	2 53 13	63 8 24	0 41 15 S.	13	4 21 19	206 43 49	3 11 18
14	3 54 20	75 4 32	0 22 45 N.	14	5 21 53	18 35 19	3 58 51
15	4 55 26	86 54 4	1 25 19	15	6 22 26	30 35 6	4 36 34
16	5 56 33	98 42 3	2 24 9	16	7 22 57	42 48 7	5 2 33
17	6 57 39	210 33 50	3 17 8	17	8 23 27	55 19 3	5 15 1
18	7 58 44	22 34 52	4 2 7	18	9 23 56	68 11 59	5 12 15
19	8 59 50	34 50 11	4 36 58	19	330 24 24	81 29 56	4 52 58
20	300 0 54	47 24 10	4 59 30	20	1 24 51	95 14 9	4 16 31
21	1 1 58	60 19 59	5 7 37	21	2 25 16	309 23 37	3 23 32
22	2 3 2	73 39 10	4 59 37	22	3 25 38	23 54 55	2 16 14
23	3 4 4	87 21 8	4 34 27	23	4 25 59	38 42 9	0 58 33 N.
24	4 5 7	301 23 14	3 52 18	24	5 26 19	353 37 48	0 23 54 S.
25	5 6 8	15 40 54	2 54 52	25	6 26 37	008 33 43	1 44 48
26	6 7 8	30 8 26	1 45 29	26	7 26 53	23 22 15	2 58 0
27	7 8 7	44 39 44	0 28 48 N.	27	8 27 7	37 57 14	3 58 31
28	8 9 5	359 9 20	0 49 45 S.	28	9 27 18	52 14 30	4 42 52
29	9 10 1	013 32 55	2 4 43				
30	310 10 56	27 47 32	3 11 11				
31	1 11 50	41 51 27	4 5 15				

Moon's Apogee and Perigee.

Apogee, 15th day, 1h. A. dist. 251,260 ms.		Apogee, 12th day, 8h. M. dist. 251,700 ms.	
Perigee, 27	7 M.	227,000	Perigee, 24 9 M. 223,900

Sun's Semidiameter, Horizontal Parallax, and Latitude, and the Obliquity of the Ecliptic, for every 5th Day at Noon at Greenwich.

March.					April.				
D.	S. D.	H. P.	Lat.	Ob. of Ecl.	D.	S. D.	H. P.	Lat.	Ob. of Ecl.
2	16 9.30	8.65	0.69 S.	23 27 32.54	1	16 1.24	8.58	0.60 S.	23 27 32.63
7	8.04	.64	.44	.60	6	15 59.85	.57	.06	.58
12	6.73	.63	.15 N.	.64	11	58.50	.56	.38 N.	.53
17	5.39	.61	.37	.66	16	57.15	.55	.24	.47
22	4.00	.60	.05 S.	.67	21	55.84	.53	.34 S.	.39
27	2.62	.59	.57	.65	26	54.60	.52	.64	.30

Sun's and Moon's Longitude, and Moon's Latitude, at apparent Noon at Greenwich.

March.				April.			
	Sun's	Moon's			Sun's	Moon's	
D.	Longitude.	Longitude.	Latitude.	D.	Longitude.	Longitude.	Latitude.
1	340 27 27	66 11 53	5 9 18 S.	1	11 15 57	115 44 54	4 14 7 S.
2	1 27 35	79 48 53	5 17 36	2	2 15 2	28 19 40	3 27 5
3	2 27 40	93 6 21	5 8 33	3	3 14 5	40 38 12	2 31 24
4	3 27 42	106 5 52	4 48 47	4	4 13 5	52 44 23	1 29 51
5	4 27 43	18 49 29	4 5 25	5	5 12 3	64 41 46	0 25 8 S.
6	5 27 42	31 19 16	3 15 57	6	6 10 59	76 33 35	0 40 5 N.
7	6 27 39	43 37 21	2 18 6	7	7 9 53	88 22 35	1 43 10
8	7 27 33	55 45 37	1 14 42	8	8 8 45	200 11 7	2 41 42
9	8 27 26	67 45 57	0 8 38 S.	9	9 7 35	12 1 13	3 33 15
10	9 27 17	79 40 12	0 57 16 N.	10	20 6 23	23 54 47	4 15 44
11	350 27 6	91 30 22	2 0 20	11	1 5 9	35 53 48	4 47 18
12	1 26 53	203 18 47	2 58 3	12	2 3 53	48 0 25	5 6 23
13	2 26 38	15 8 4	3 48 13	13	3 2 36	60 17 4	5 11 46
14	3 26 22	27 1 21	4 28 52	14	4 1 17	72 46 38	5 2 37
15	4 26 3	39 2 6	4 58 11	15	4 59 56	85 32 14	4 38 29
16	5 25 42	51 14 15	5 14 37	16	5 58 33	98 37 6	3 59 28
17	6 25 20	63 41 56	5 16 49	17	6 57 9	312 4 10	3 6 22
18	7 24 56	76 29 11	5 3 38	18	7 55 43	25 55 35	2 0 57
19	8 24 30	89 39 38	4 34 21	19	8 54 16	40 11 58	0 46 14 N.
20	359 24 3	303 15 56	3 49 0	20	9 52 47	354 51 52	0 33 24 S.
21	000 23 34	17 19 10	2 48 40	21	30 51 16	009 50 53	1 52 17
22	1 23 3	31 48 7	1 35 53	22	1 49 43	25 1 43	3 4 8
23	2 22 30	346 38 52	0 14 59 N.	23	2 48 8	40 14 50	4 2 57
24	3 21 55	001 44 41	1 8 16 S.	24	3 46 32	55 19 46	4 44 14
25	4 21 18	16 56 47	2 27 10	25	4 44 54	70 7 2	5 5 33
26	5 20 39	32 5 16	3 35 20	26	5 43 14	84 29 38	5 6 51
27	6 19 58	47 0 56	4 27 45	27	6 41 32	98 23 43	4 49 45
28	7 19 14	61 36 29	5 1 28	28	7 39 47	111 48 42	4 17 5
29	8 18 29	75 47 18	5 15 37	29	8 38 1	24 46 31	3 32 7
30	9 17 41	89 31 36	5 11 3	30	9 36 13	37 20 53	2 38 3
31	10 16 50	102 49 59	4 49 42				

Moon's Apogee and Perigee.

Apogee, 11th day, 10h. A. dist. 252,300 ms.	Apogee, 8th day, 0h. M. dist. 252,500 ms.
Perigee, 24th 6 A. 221,960	Perigee, 22d 5 M. 221,900

Sun's Semidiameter, Horizontal Parallax, and Latitude, and the Obliquity of the Ecliptic, for every 5th Day at Noon at Greenwich.

May.					June.				
D.	S. D.	H. P.	Lat.	Ob. of Ecl.	D.	S. D.	H. P.	Lat.	Ob. of Ecl.
1	15 53.39	8.51	0.30 S.	23 27 32.21	5	15 47.08	8.45	0.51 N.	23 27 31.68
6	52.25	.50	.29 N.	.12	10	46.56	.45	.28	.64
11	51 18	.49	.44	.02	15	.15	.44	.29 S.	.62
16	50.18	.48	.03 S.	31.94	20	45.81	.44	.52	.60
21	49.26	.47	.53	.86	25	.59	.44	.11	.61
26	48.44	.46	.47	.79	30	.51	.44	.46 N.	.63
31	47.73	.46	.11 N.	.73					

Sun's and Moon's Longitude, and Moon's Latitude, at apparent Noon at Greenwich.

May.				June.			
D.	Sun's Longitude.	Moon's Longitude.	Moon's Latitude.	D.	Sun's Longitude.	Moon's Longitude.	Moon's Latitude.
1	40 34 22	149 36 26	1 37 59 S.	1	70 25 20	193 49 51	2 23 43 N.
2	1 32 30	61 38 10	0 34 42 S.	2	1 22 47	205 38 51	3 15 8
3	2 30 37	73 30 56	0 29 14 N.	3	2 20 12	17 32 14	3 58 16
4	3 28 41	85 19 8	1 31 21	4	3 17 36	29 33 11	4 31 15
5	4 26 43	97 6 36	2 29 19	5	4 14 59	41 43 51	4 52 20
6	5 24 44	208 56 26	3 20 53	6	5 12 21	54 5 33	5 0 4
7	6 22 43	20 51 2	4 3 53	7	6 9 42	66 38 50	4 53 31
8	7 20 40	32 52 11	4 36 24	8	7 7 3	79 23 45	4 32 18
9	8 18 36	45 1 14	4 56 45	9	8 4 23	92 20 6	3 56 51
10	9 16 30	57 19 12	5 3 39	10	9 1 42	305 27 48	3 8 22
11	50 14 23	69 47 11	4 56 18	11	9 59 1	18 47 5	2 8 50
12	1 12 15	82 26 28	4 34 25	12	80 56 20	32 18 34	1 1 7 N
13	2 10 5	95 18 40	3 58 22	13	1 53 39	346 3 4	0 11 16 S.
14	3 7 54	308 25 46	3 9 11	14	2 50 57	000 1 16	1 24 12
15	4 5 43	21 49 57	2 8 35	15	3 48 14	14 13 14	2 33 5
16	5 3 30	35 33 14	0 59 14 N.	16	4 45 31	28 37 40	3 33 13
17	6 1 16	349 36 55	0 15 19 S.	17	5 42 48	43 11 32	4 20 9
18	6 59 1	004 0 54	1 30 34	18	6 40 4	57 49 53	4 50 18
19	7 56 44	18 42 55	2 41 15	19	7 37 21	72 26 1	5 1 27
20	8 54 27	33 38 5	3 41 54	20	8 34 38	86 52 42	4 53 11
21	9 52 9	48 38 54	4 27 32	21	9 31 54	101 3 8	4 26 52
22	60 49 49	63 36 12	4 54 36	22	90 29 9	14 52 9	3 45 22
23	1 47 28	78 20 36	5 1 36	23	1 26 25	28 16 56	2 52 17
24	2 45 6	92 44 7	4 49 9	24	2 23 39	41 17 9	1 51 34
25	3 42 42	106 41 30	4 19 34	25	3 20 52	53 54 38	0 46 53 S.
26	4 40 17	20 10 34	3 36 13	26	4 18 6	66 12 57	0 18 32 N.
27	5 37 51	33 12 10	2 42 48	27	5 15 19	78 16 40	1 21 54
28	6 35 23	45 49 16	1 42 52	28	6 12 32	90 11 1	2 20 53
29	7 32 54	58 6 17	0 39 36 S.	29	7 9 44	202 1 17	3 13 27
30	8 30 24	70 8 31	0 24 11 N.	30	8 6 56	13 52 37	3 57 43
31	9 27 53	82 1 18	1 26 2				

Moon's Apogee and Perigee.

Apogee, 5th day, 6h. M. dist. 252,300 ms.	Apogee, 1st day, 6h. A. dist. 251,700 ms.
Perigee, 20th 2h. A. 223,700	Perigee, 17th 1 A. 226,700
	Apogee, 29th 9 M. 251,100

Sun's Semidiameter, Horizontal Parallax, and Latitude, and the Obliquity of the Ecliptic, for every 5th Day, at Noon at Greenwich.

July.					August.				
D.	S. D.	H. P.	Lat.	Ob. of Ecl.	D.	S. D.	H. P.	Lat.	Ob. of Ecl.
	′ ″	″	′	° ′ ″		′ ″	″	′	° ′ ″
5	15 45.52	8.44	0.53 N.	23 27 31.68	4	15 47.91	8.46	0.31 N.	23 27 32.16
10	·65	.44	.01	.73	9	48.66	.46	.26 S.	.27
15	.89	.44	.45 S.	.80	14	49.53	.47	.43	.39
20	46.24	.44	.31	.87	19	50.49	.48	.02 N.	.51
25	.68	.45	.27 N.	.96	24	51.48	.49	.54	.62
30	47.24	.45	.62	32.06	29	52.54	.50	.53	.71

Sun's and Moon's Longitude, and Moon's Latitude, at apparent Noon at Greenwich.

July.				August.			
D.	Sun's Longitude.	Moon's Longitude.	Moon's Latitude.	D.	Sun's Longitude.	Moon's Longitude.	Moon's Latitude.
	° ′ ″	° ′ ″	° ′ ″		° ′ ″	° ′ ″	° ′ ″
1	99 4 9	225 49 37	4 31 57 N.	1	128 39 45	271 3 35	4 52 37 N.
2	100 1 20	37 56 17	4 54 29	2	9 37 10	84 3 57	4 20 43
3	0 58 31	50 15 31	5 3 50	3	130 34 35	97 23 40	3 34 1
4	1 55 42	62 49 16	4 58 51	4	1 32	311 1 34	2 34 9
5	2 52 53	75 38 15	4 38 52	5	2 29 30	24 55 9	1 23 59
6	3 50 5	88 42 10	4 4 1	6	3 26 59	39 0 56	0 7 36 N.
7	4 47 16	301 59 49	3 15 22	7	4 24 30	153 15 6	1 10 7 S.
8	5 44 27	15 29 33	2 14 59	8	5 22 2	007 33 37	2 23 54
9	6 41 39	29 9 49	1 5 58 N.	9	6 19 34	21 52 56	3 28 46
10	7 38 52	42 58 52	0 7 47 S.	10	7 17 8	36 9 56	4 20 30
11	8 36 4	356 55 33	1 21 52	11	8 14 44	50 22 6	4 55 58
12	9 33 17	010 58 54	2 31 33	12	9 12 21	64 27 16	5 13 18
13	110 30 31	25 7 55	3 32 38	13	140 10 0	78 23 39	5 11 59
14	1 27 46	39 21 9	4 20 50	14	1 7 40	92 9 34	4 52 41
15	2 25 1	53 36 33	4 53 2	15	2 5 22	105 43 30	4 17 11
16	3 22 17	67 50 59	5 7 7	16	3 3 5	19 4 9	3 28 11
17	4 19 33	82 0 39	5 2 22	17	4 0 49	32 10 26	2 28 57
18	5 16 50	96 1 7	4 39 32	18	4 58 35	45 1 51	1 23 7
19	6 14 7	109 48 9	4 0 39	19	5 56 23	57 38 25	0 14 22 S.
20	7 11 26	23 18 17	3 8 55	20	6 54 12	70 0 58	0 53 53 N.
21	8 8 44	36 29 19	2 8 3	21	7 52 2	82 11 8	1 58 36
22	9 6 3	49 20 37	1 1 55 S.	22	8 49 53	94 11 21	2 57 11
23	120 3 23	61 53 7	0 5 48 N.	23	9 47 46	206 4 47	3 47 34
24	1 0 44	74 9 17	1 11 56	24	150 45 40	17 55 17	4 28 1
25	1 58 4	86 12 36	2 13 48	25	1 43 35	29 47 2	4 57 6
26	2 55 26	98 7 24	3 9 8	26	2 41 31	41 44 38	5 13 39
27	3 52 47	209 58 30	3 56 4	27	3 39 29	53 52 41	5 16 34
28	4 50 9	21 50 53	4 32 59	28	4 37 29	66 15 38	5 5 2
29	5 47 32	33 49 24	4 58 22	29	5 35 29	78 57 24	4 38 33
30	6 44 55	45 58 37	5 10 51	30	6 33 31	92 0 59	3 57 6
31	7 42 19	58 22 23	5 9 13	31	7 31 34	305 28 4	3 1 33

Moon's Apogee and Perigee.

Perigee,	14th day,	3h.	M.	dist. 229,500 ms.	Perigee,	8th day,	10h. M. dist. 228,300 ms.
Apogee,	27		M.	251,000	Apogee,	24th	0 M. 251,500

Sun's Semidiameter, Horizontal Parallax, and Latitude, and the Obliquity of the Ecliptic, for every 5th day, at noon at Greenwich.

September.					October.				
D.	S. D.	H. P.	Lat.	Ob. of Ecl.	D.	S. D.	H. P.	Lat.	Ob. of Ecl.
	″	″	″	° ′ ″		″	″	″	° ′ ″
3	15 53.71	8.51	0.03 S.	23 27 32.77	3	16 1.62	8.58	0.36 S.	23 27 32.87
8	54.94	.52	.46	.83	8	3.01	.59	.45	.84
13	56.20	.53	.27	.85	13	4.39	.60	.04 N.	.79
18	57.52	.54	.33 N.	.87	18	5.75	.61	.54	.73
23	58.86	.55	.59	.88	23	7.10	.63	.42	.66
28	16 0.24	.56	.20	.89	28	8.40	.64	.15 S.	.59

Sun's and Moon's Longitude, and Moon's Latitude, at apparent Noon at Greenwich.

September.				October.			
D.	Sun's Longitude.	Moon's Longitude.	Moon's Latitude.	D.	Sun's Longitude.	Moon's Longitude.	Moon's Latitude.
	° ′ ″	° ′ ″	° ′ ″		° ′ ″	° ′ ″	° ′ ″
1	158 29 39	319 18 35	1 53 54 N.	1	187 46 55	356 9 45	1 26 49 S.
2	9 27 45	33 30 25	0 37 36 N.	2	8 45 59	011 8 38	2 41 50
3	160 25 53	347 59 30	0 42 39 S.	3	9 45 5	26 16 41	3 46 10
4	1 24 3	002 40 4	2 1 8	4	190 44 13	41 24 12	4 34 37
5	2 22 15	17 25 22	3 11 56	5	1 43 23	56 21 40	5 3 41
6	3 20 28	32 8 34	4 9 51	6	2 42 35	71 1 20	5 12 15
7	4 18 44	46 43 30	4 51 1	7	3 41 50	85 18 8	5 1 0
8	5 17 2	61 5 27	5 13 16	8	4 41 8	99 9 53	4 32 19
9	6 15 22	75 11 24	5 16 9	9	5 40 27	112 36 50	3 49 17
10	7 13 44	88 59 52	5 0 35	10	6 39 48	25 41 7	2 55 20
11	8 12 8	102 30 38	4 28 34	11	7 39 12	38 25 49	1 53 57
12	9 10 34	15 44 31	3 42 49	12	8 38 39	50 54 30	0 48 25 S.
13	170 9 2	28 42 48	2 46 24	13	38 8	63 10 36	0 18 12 N.
14	1 7 32	41 26 51	1 42 43	14	200 37 39	75 17 13	1 22 58
15	2 6 4	53 58 16	0 35 7 S.	15	1 37 12	87 16 58	2 23 18
16	3 4 39	66 18 30	0 33 7 N.	16	2 36 48	99 11 57	3 16 46
17	4 3 15	78 28 57	1 38 51	17	3 36 25	211 3 56	4 1 21
18	5 1 53	90 31 8	2 39 21	18	4 36 4	22 54 33	4 35 21
19	6 0 33	202 26 53	3 32 16	19	5 35 46	34 45 28	4 57 27
20	6 59 15	14 18 17	4 15 40	20	6 35 29	46 38 38	5 6 46
21	7 57 59	26 8 0	4 47 59	21	7 35 14	58 36 31	5 2 48
22	8 56 45	37 59 9	5 8 6	22	8 35 1	70 42 4	4 45 20
23	9 55 32	49 55 24	5 15 5	23	9 34 49	82 58 51	4 14 35
24	180 54 21	62 0 50	5 8 19	24	210 34 40	95 30 52	3 31 7
25	1 53 12	74 19 47	4 47 24	25	1 34 32	308 22 23	2 36 0
26	2 52 5	86 56 40	4 12 19	26	2 34 25	21 37 26	1 30 59
27	3 50 59	99 55 33	3 23 30	27	3 34 20	35 19 14	0 18 43 N.
28	4 49 56	313 19 39	2 22 12	28	4 34 18	349 29 27	0 57 0 S.
29	5 48 54	27 10 44	1 10 42 N.	29	5 34 17	004 7 5	2 11 14
30	6 47 53	41 28 27	0 7 18 S.	30	6 34 18	19 7 50	3 18 16
				31	7 34 21	34 24 2	4 12 12

Moon's Apogee and Perigee.

Perigee, 4th day, 10h. A. dist. 225,100 ms.		Perigee, 3d day, 3h. M. dist. 222,600 ms.	
Apogee, 20th	4 A. 252,100	Apogee, 18th	0 M. 252,500
		Perigee, 31st	2 A. 221,600

Sun's Semidiameter, Horizontal Parallax, and Latitude, and the Obliquity of the Ecliptic, for every 5th day, at noon at Greenwich.

November.					December.				
D.	S. D.	H. P.	Lat.	Ob. of Ecl.	D.	S. D.	H. P.	Lat.	Ob. of Ecl.
	″	″	″	° ′ ″		′ ″	″	″	° ′ ″
2	16 9.64	8.65	0.52 S.	23 27 32.50	2	16 15.61	8.71	0.49 S.	23 27 32.02
7	10.84	.66	.23	.41	7	16.27	.71	.06 N.	31.96
12	11.97	.67	.35 N.	.33	12	.81	.72	.50	.94
17	13.01	.68	.53	.24	17	17.25	.72	.29	.92
22	.99	.69	.06	.16	22	.55	.72	.29 S.	.94
27	14.86	.70	.48 S.	.09	27	.72	.72	.59	.96
					31	.78	.72	.37	32.00

Sun's and Moon's Longitude, and Moon's Latitude, at apparent noon at Greenwich.

November.				December.			
D.	Sun's Longitude.	Moon's Longitude.	Moon's Latitude.	D.	Sun's Longitude.	Moon's Longitude.	Moon's Latitude.
	° ′ ″	° ′ ″	° ′ ″		° ′ ″	° ′ ″	° ′ ″
1	218 34 26	49 45 0	4 48 13 S.	1	248 50 22	88 5 9	4 36 41 S.
2	19 34 32	64 59 12	5 3 28	2	49 51 14	102 45 8	3 58 1
3	220 34 40	79 56 2	4 57 36	3	250 52 8	16 57 19	3 5 28
4	21 34 50	94 27 59	4 32 28	4	51 53 3	30 39 14	2 3 45
5	22 35 2	108 30 29	3 51 27	5	52 53 59	43 51 43	0 57 19 S.
6	23 35 17	22 3 25	2 58 34	6	53 54 57	56 37 59	0 10 0 N.
7	24 35 34	35 8 46	1 57 54	7	54 55 56	69 2 41	1 14 59
8	25 35 53	47 50 23	0 53 6 S.	8	55 56 56	81 11 4	2 15 7
9	26 36 13	60 12 59	0 12 35 N.	9	56 57 58	93 8 27	3 8 18
10	27 36 36	72 21 26	1 16 21	10	57 59 0	204 59 48	3 52 47
11	28 37 0	84 20 15	2 15 46	11	58 0 4	16 49 21	4 27 5
12	29 37 26	96 13 20	3 8 35	12	260 1 9	28 40 37	4 49 53
13	230 37 55	208 3 54	3 52 54	13	61 2 14	40 36 16	5 0 10
14	31 38 25	19 54 23	4 27 2	14	62 3 20	52 38 8	4 57 15
15	32 38 56	31 46 36	4 49 36	15	63 4 27	64 47 21	4 40 51
16	33 39 29	43 41 54	4 59 34	16	64 5 34	77 4 40	4 11 13
17	34 40 4	55 41 24	4 56 24	17	65 6 42	89 30 40	3 29 16
18	35 40 41	67 46 27	4 39 54	18	66 7 50	302 6 7	2 36 31
19	36 41 19	79 58 39	4 10 28	19	67 8 59	14 52 9	1 35 2
20	37 41 57	92 20 13	3 28 55	20	68 10 8	27 50 28	0 27 33 N.
21	38 42 37	304 53 59	2 36 33	21	69 11 17	41 3 13	0 42 45 S.
22	39 43 19	17 43 21	1 35 13	22	270 12 26	354 32 42	1 52 15
23	240 44 1	30 51 58	0 27 18 N.	23	71 13 36	008 20 53	2 56 51
24	41 44 45	44 23 20	0 44 3 S.	24	72 14 46	22 28 43	3 52 15
25	42 45 30	358 19 59	1 54 55	25	73 15 55	36 55 21	4 34 10
26	43 46 16	012 42 38	3 0 40	26	74 17 4	51 37 38	4 58 55
27	44 47 3	27 29 17	3 56 7	27	75 18 14	66 29 49	5 3 57
28	45 47 51	42 34 31	4 36 19	28	76 19 24	81 23 58	4 48 28
29	46 48 40	57 49 33	4 57 25	29	77 20 34	96 11 7	4 13 45
30	47 49 31	73 3 28	4 57 23	30	78 21 44	110 42 51	3 23 0
				31	79 22 54	24 52 36	2 20 42

Moon's Apogee and Perigee.

Apogee, 14th day, 0h. M. dist. 252,500 ms.		Apogee, 11th day, 11h. M.	dist. 252,100 ms
Perigee, 29th	2 222,500	Perigee, 27th	9 225.800

PART II.

INFORMATION CONNECTED WITH THE CALENDAR, CELESTIAL CHANGES, AND ASTRONOMICAL PHENOMENA.

I. ALMANACS.

THE following account of the present state of Almanacs, compared with that of former times, is taken from the *Companion to the British Almanac*, for 1829, published under the superintendence of the *Society for the Diffusion of Useful Knowledge*.

The history of Almanacs, and even the etymology of the word Almanac, are involved in considerable obscurity. By some, the name is derived from the Arabic *al manach*, to count. Verstegan makes the word of German origin, *Almonat;* and says that our Saxon ancestors were in the practice of carving the annual courses of the moon upon a square piece of wood, which they called *Almonaught*—(al-moon-heed). Almanacs became generally used in Europe, within a short time after the invention of printing; and they were very early remarkable, as some are now in England, for the mixture of truth and falsehood which they contained. In 1579, their effects in France were found so mischievous, from the pretended prophecies which they published, that an edict was promulgated by Henry III, forbidding any predictions to be inserted in them, relating to civil affairs, whether those of the state or of private persons. No such law was ever enacted in England. It is singular that the earliest English Almanacs were printed in Holland, on small folio sheets; and these have occasionally been preserved, from having been pasted within the covers of old books. In the reign of James I. letters patent were granted to the two Universities and the Stationers' Company, for an exclusive right of printing Almanacs. These, in 1775, were declared to be illegal. During the civil wars of Charles I., and thence onward to our own times, English Almanacs became conspicuous for the unblushing boldness of their astrological predictions, and their determined perpetuation of popular errors. At the present day, none of the Almanacs of the continental states contain any misleading matters of this nature;—and the Almanacs most similar to some of those extensively circulated amongst our intelligent fellow-countrymen,

are produced in Persia. A modern Persian Almanac is thus described in the *Encyclopædia Metropolitana*:—'The first page contains a list of fortunate days for certain purposes; as, for example, to buy, to sell, to take medicine, to marry, to go a journey, &c. &c.; then follow predictions of events, as earthquakes, storms, political affairs, &c. after the manner of Moore's Almanac, except being apparently more concise.' This resemblance between the productions of a highly cultivated nation, and one which is remarkable for its general ignorance, is certainly no proof of our boasted emancipation from ancient prejudices.

Our popular superstitions with regard to the weather—the lingering belief, in which some still indulge, of the doctrine of nativities—and the settled opinion in a few minds, that what are called malignant aspects of the stars, as well as comets and meteors, portend evils to mankind, were the most cherished convictions of our Anglo-Saxon ancestors; and it may not be entirely fanciful to consider the prevalence of such notions still among us, as shoots of the tree of ancient prognostication. Mr. Sharon Turner, in his *History of the Anglo-Saxons*, has an interesting passage upon this subject:—

'Their prognostics, from the sun and moon, from thunder and from dreams, were so numerous, as to display and to perpetuate a most lamentable debility of mind. Every day of every month was catalogued as a propitious or unpropitious season for certain transactions. We have Anglo-Saxon treatises which contain rules for discovering the future fortune and disposition of a child, from the day of his nativity. One day was useful for all things; another, though good to tame animals, was baleful to sow seeds. One day was favorable to the commencement of business; another to let blood; and others wore a forbidding aspect to these and other things. On this day they were to buy, on a second to sell, on a third to hunt, on a fourth, to do nothing. If a child was born on such a day, it would live; if on another, its life would be sickly; if on another, it would perish early. In a word, the most alarming fears, and the most extravagant hopes, were perpetually raised by these foolish superstitions, which tended to keep the mind in the dreary bondage of ignorance and absurdity, which prevented the growth of knowledge, by the incessant war of prejudice, and the slavish effects of the most imbecile apprehensions.'

Many of our English Almanacs have had no inconsiderable share in keeping alive errors like those of a thousand years ago—errors which are equally opposed to the progress of knowledge, and to a pious confidence in the wisdom and goodness of an Almighty Providence. It may be curious, and not uninstructive, to observe how very similar are the prejudices which still maintain a decrepit existence among us, to those of our forefathers; and how very little the general progress of education has done towards the destruction of evil publications which long habit has rendered

popular. We will take the Almanacs of 1678, (the year the Habeas Corpus Act was passed, in the reign of Charles II.)—of 1771, (the eleventh year of the reign of George III.)—and those of 1829, which have just been published.

The most famous 'Astrologer' of the seventeenth century was William Lilly. He began to print his Ephemeris in 1644, during the greatest heat of the civil wars. He uses many hard words and much Latin in his predictions; and constantly invokes the Divine assistance to deduce a judgment of things to come, from what he calls '*rational* and experimental grounds of art.' The year 1677 had been distinguished by the appearance of a comet; and of course this is a fruitful subject with Lilly, whose business was to fill the minds of men with superstitious fears. He says, 'all comets signifie wars, terrors, and strange events in the world.' The venerable Bede, more than eight hundred years before him, had affirmed that comets 'portend change of kingdoms, or pestilence, or wars, or tempests, or droughts.' Lilly explains the prophetic character of these bodies very curiously: 'the *spirits*, well knowing what accidents shall come to pass, do form a star or comet, and give it what figure or shape they please, and cause its motion through the air, that people might behold it, and thence draw a signification of its events.' What is called the murrain was very common in those days, when the diseases of cattle as well as men were imperfectly understood; and, therefore, a comet, or blazing star, appearing in the sign Taurus, 'portends,' according to this crafty astrologer, 'mortality to the greater sort of cattle, as horses, oxen, cows, &c.' But the comet has not only to answer for this mischief, but it also portends, 'prodigious shipwracks, damage in fisheries, monstrous floods, and destruction of fruit by caterpillars and other vermine,'—evils which the most superstitious of men have now pretty well agreed to refer to their natural causes. Comets, according to Lilly, also produce 'very hard and nipping weather, frosty, dark, cloudy, much snow and wind, strange or unusual hail and tempest.' This is absurd enough; but it is not more absurd than an assertion that Saturn, the planet which, with the exception of Uranus, is the most distant from the Sun, should produce storms and tempests in January 1829, by its influence on that luminary. The following passage occurs in the first page of Moore's Almanac, for 1829.

'Saturn a direful ray
From Cancer's lofty mount
Darts at the king of day,
And clouds *on that account*
Will sure pervade our wintry skies,
And storms and tempests soon shall rise.'

But this prophecy about the influence of Saturn upon the weather is by no means original. In Tanner's *Ephemeris* for 1678, we are told, in December,—

'Just at beginning Saturn's cloudy eye
Causeth a very dark and cloudy skie.'

The modern falsehood is only different from being clothed in more lofty language.

The natural causes of Eclipses are now pretty generally known; and even the most ignorant of mankind, in civilized countries, have ceased to consider that they either produce, or are prophetic of evil. The certainty with which their exact time can be calculated, is a beautiful exemplification of the truth of the great principles of the science of astronomy. In this work for 1828, the folly of any superstition arising out of eclipses was exhibited. Almanacs, even to our own day, attempt to keep up the popular delusion upon such subjects; and the following parallel instances will show the little variation in the cheat:—

John Lord's Almanac and Prognosticator, for 1678.	*John Partridge's Merlinus Liberatus, an Almanac for* 1829.
'The fourth eclipse of the moon on October, the 19th day. This threateneth great and rich men with loss of goods, or decay of substance, likewise death and diseases among cattel, beasts and sheep, and such as chew the cud; also dearness of corn and seed sown upon the earth; this will or may chiefly belong to Ireland, Russia, Polonia the Great, and such others as are under Taurus.'	October, 1829. The late visible eclipse of the Moon, which happened in the latter part of the sign Pisces, may be considered to relate to Portugal and Spain, betokening insurrections, troubles, and discords, amongst the common people, with mutinies amongst the soldiers, &c.'

Our ancestors had a great many ridiculous notions about the possibility of prognosticating the future condition of the weather, from the state of the atmosphere on certain festival days. The festival of the Circumcision (January 1) was thus supposed to afford an evidence of the weather to be expected in the coming year. For St. Vincent's day (Jan. 22) there is an ancient admonition to note down whether the sun shine. The Conversion of St. Paul (January 25) was considered throughout Europe as particularly ominous, not only of future weather, but of coming events; and there were some Latin rhymes of the middle ages to this effect, which the English prognosticators thus rendered:

'If St. Paul's day be faire and cleare,
It doth betide a happy yeare.
But if by chance it then should raine,
It will make deare all kinds of graine:
And if the clouds make dark the skie,
The neate and foule this yeare shall die:
If blustering winds do blow aloft,
Then wars shall trouble the realm full oft.'

Candlemas day (February 2) supplied another of these irrational inferences from the weather of one day to that of a distant period:

'If Candlemas day be fair and bright,
Winter will have another flight:
But if Candlemas day be clouds and rain,
Winter is gone and will not come again.'

A few of these notions are still prevalent in remote districts. Mrs. Grant, in her account of the superstitions of the Highlands, says, that if the days between the 11th and 14th of February are particularly stormy, the prognostic for the weather of the coming year is most favorable. In many parts of Germany there is a belief that if St. Urban's day (May 25) be fair and calm, there will be a good vintage. The prognostications connected with St. Swithin's day (July 15) have kept the firmest hold upon the popular mind. A continuance of rainy weather generally takes place about this period; but the belief that if it rain on that day the rain will continue for forty days, is as absurd as any of the other prejudices we have mentioned. Ben Jonson laughs at the notion in one of his plays,* where a character, looking into his *penny* almanac, (almanacs were sold at a *penny* then, as they are to this day at Hamburgh), says, 'O here, *St. Swithin's, the 15th day, variable weather, for the most part rain*, good!—*for the most part rain?* why, it should rain forty days after, more or less; it was a rule held afore I was able to hold the plough, and yet here are two days no rain; ha! it makes me muse.'

We have mentioned these silly notions of former times, to observe how very nearly they have become eradicated by the real knowledge produced by a wider diffusion of education. But it is not so with the weather prophecies of the almanacs. They still continue to be printed, as in the days of Lilly; and are still believed by hundreds and thousands of credulous farmers and country people, who have their hay and corn too often spoiled through their reliance on these false predictions. That they contain as little novelty as wisdom, may be seen from the following extracts for the month of JUNE:

	Shepherd's Almanac, 1678.	*Moore's Almanac*, 1771.	*Moore's Almanac*, 1829.
5	Winds and rain at the beginning of the month.	A close air, with drisling showers. Fair and clear, but soon it lowers.	Intervals of fair weather.
10	Winds and rain about this time.	And now, my friends, you may again expect winds, thunder, and showers of rain.	A moist atmosphere, attended with rain and thunder in many places.
15	Some thunder about this time.	But now again it seems the air is moderate, serene, and clear. Sultry and hot some	
20	Blustering storms of wind and rain.	days together. But then comes some windy weather. But at this time the case is plain,	Fair and hot; charming weather for forwarding vegetation.
25	Some storms of rain and good weather	we shall have pleasant showers of rain. But	
30	intervened.	the air clears up and is fair again.	

According to these several prophecies of 1678, 1771, and 1829, rain and thunder invariably take place from the 10th to the 20th of June. It is perfectly impossible that these predictions can be any thing but mere guesses; often, of course, very false guesses,—and guesses certainly not applicable, if they even approached the truth, to all parts of the kingdom, —for it may rain in a mountainous country, and be fine in the neighboring

* 'Every Man out of his Humor,' Act I, Scene 1.

plain, on the same day. We know from scientific observation, that in the month of June the atmosphere is at its highest point of dryness, and that the average number of days on which rain falls is lower than the average of any other month of the year. With these established facts to contradict the prophecy, it is predicted by Moore's Almanac, that from the 10th to the 20th of June in the year 1829, the atmosphere will be moist, with rain and thunder in many places. If any farmer believe this nonsense, it is highly probable that from the 10th to the 20th of June he may lose some days of actual fine weather, in the dread of the rain which the almanac predicts, and thus his hay will remain on the ground, instead of being safely in the rick; and, further, that when he hopes for the fine weather which the same almanac ensures from the 24th to the end of the month, he may experience a heavy rain, and be driven on to the periodical rains of the middle of July, with no consolation for his losses but the conviction that it is better to trust to common-sense and experience, than to false predictions, expressly manufactured to impose upon the ignorant.

The 'Astrological Predictions of Mundane Affairs,' with which the most popular of our almanacs are still illuminated, are not more distinguished for veracity than their predictions of the weather. We do not suppose that many persons seriously believe in these absurdities; yet when they are perused by many thousands, as they still are, it is impossible that the mind should be able wholly to resist the influence of the deception; and in proportion as such thoughts find a place in the mind, will sound knowledge and a pure love of truth be shut out. As a matter of curious interest, we shall again give a specimen from the almanacs before us of the little variation which has prevailed for one hundred and fifty years in the language of imposture:

Andrews' News from the Stars, 1678, *July.*	*Moore's Almanac*, 1771, *July.*	*Moore's Almanac*, 1829, *July.*
Sudden fears possess some places—Jupiter turns retrograde, and Mars comes to conjunction with Saturn at the month's end. Weighty matters under consideration in some parts of Europe. Flying reports from beyond sea. Those places under Gemini again concerned. The influence both of Saturn and Mars they are perhaps now sensible of, to their detriment or disturbance.	There is some bustle in the world about this time, and where armies are blows must be expected. Jove affronts both the Sun and Mercury, and some sly contrivance brought to light. I hope no holy plot. Some good news from abroad about this time; and some ships despaired of likely to come home safe.	In this month there are no less than five conjunctions, three of which happen in the ascendant of Rome, the very focus of papal powers, and a fourth on the very verge of that sign. Here is a concatenation of circumstances; the effects of which may be expected to produce serious events in the Catholic church —perhaps the death of his Holiness.

It cannot fail to be perceived, that the tone of these predictions is not in the slightest degree altered by the progress of knowledge. The prophecy for 1829 would read just as consistently in the Almanac of 1678; and that of 1771 would be just as reasonable and true, if transposed to 1829. Indeed, we have observed in our inquiries into this subject, that the very slightest changes fit the predictions of a past year for revival, in some

future attempt at delusion. It is really wonderful, that such a clumsy imposture should so long have held a place amongst a thinking people. Several gross improprieties, however, have within the last year been removed from the old almanacs; and it is observable, that their attempts at delusion are very much softened. It is to be desired, that all astrological predictions should be removed from these productions; and they may then fairly be considered as amongst the most useful works of reference. We earnestly desire to see them become instruments of good, instead of continuing vehicles of evil.

II. CALENDAR.

THE divisions of time are either natural or artificial. The natural divisions are the day, the lunar month, and the year. The artificial divisions are the week, hour, minute, and second. The year is divided into 12 parts by the revolutions of the moon, with a remainder of about 11 days. How comes the day to be divided into 24 parts, called hours, rather than into any other number? and how happens it, that the hour is subdivided into 60 minutes, and the minute into 60 seconds? Having occasion for smaller portions of time than a day, this natural unit of duration was divided by man as nature had divided the year, by the revolutions of the moon; that is, the day properly so called, or the interval from sunrise to sunset, was divided into 12 parts, and the night into 12 parts; and as the month, or 12th part of the year, contained 60 such parts, namely, 30 days and 30 nights, so the hour, or 12th part of the day, was divided into 60 parts, called minutes, and the minute subdivided in a similar manner into 60 seconds. But the hour was formerly, among the Greeks, a 12th part of the interval from sunrise to sunset, and thus, instead of being a fixed and definite period, was of different lengths at different seasons. Indeed the hour, considered as the 24th part of the apparent entire revolution of the sun, would not he exactly the same through the year, since the days themselves, which are measured by the return of the sun to the same meridian, are unequal. They increase for a certain period from a few seconds to half a minute, and then decrease in a similar manner; so that we are obliged to strike a balance, or take an average of all the days in the year, and divide this average into 24 parts, in order to give to the hour a definite, fixed length. A good clock that goes uniformly, and is so regulated as to agree exactly with the sun at the beginning and end of the year, would indicate hours and minutes of a uniform length, according to the above method of taking an average or mean. But an accurate clock so adjusted, would differ from the sun in the course of the year about 16 minutes, or a little more than a quarter of an hour, being sometimes faster by this quantity, and sometimes slower. It would agree with the sun four times in the course of the year, namely, (at the

present time) on the 15th of April, 15th of June, 1st of September, and 24th of December; and it would differ most from the sun about the middle of the intervening periods. The difference, however, between the clock and the sun, would not be the same in each case. The following are the differences in question, between the clock and sun at the time of their greatest departure from each other in the several periods above mentioned; 11th of February, 14′ 36.6″; 15th of May, 3′ 55.6″; 26th of July, 6′ 7.3″; 3d of November, 16′ 16.8″.

The want of equality in the length of the solar days may be thought to imply a want of unformity in the apparent diurnal motion of the heavens, or in the real motion of the earth on its axis. This is not, however, the case. We have never been able to detect the slightest irregularity in these motions. The day, as measured by the return of a star to the meridian, or to the same point of the heavens, is always the same. It will naturally be asked then how it happens that the solar day, or period measured by the return of the sun to the meridian, should be different at different times of the year. This arises from two causes. If the sun's centre and a star were on the meridian at the same instant to-day, to-morrow when the star arrived at the meridian, the sun would be advanced towards the east about one degree, or two of its diameters, which would require, according to the uniform rate of the diurnal motion, about four minutes of time for it to reach the meridian. Thus a solar day is made up of a sidereal day, always the same, and a certain portion more. Now these additional portions are unequal. We have said that the sun will be found to have left the star, upon the return of the latter to the meridian, having departed from it toward the east. But these departures will be unequal, since the sun's apparent motion among the stars, produced by the real motion of the earth in her orbit, is alternately accelerated and retarded. This is one cause of the inequality of the solar days. Another is, that the sun's path among the stars is sometimes perpendicular to the meridian, and sometimes oblique. It is manifest, that if the sun, after coinciding with a star should move a degree north or south, instead of easterly, it would return to the meridian at the same time with the star, making a solar and sidereal day the same; and, according as the path of the sun approaches more and more to a perpendicular to the meridian, is the solar day increased, other things being the same. Now the sun's path is actually sometimes perpendicular to the meridian, and sometimes oblique. Its course among the stars is not exactly east, but is generally inclined, sometimes to the north and sometimes to the south. In this manner it happens that the days, as measured by the sun, alternately increase and decrease, and the time shown by the sun, as upon a dial, for instance, is called *apparent* time. On the other hand, the time furnished by a good clock, as above described, is called *mean* time. The difference, amounting, when greatest, to about 16 minutes, is called the *equation of time*.

Days.

The day is made to begin at different times in different countries. With the Italians, for instance, it is considered as beginning at sunset; with the modern Greeks, on the other hand, it is supposed to begin at sunrise; while with us, and many other people, its commencement dates from midnight. According to the two former modes, it is necessary to alter clocks and watches continually for the purpose of making the hours begin with the day. The manner of beginning the day at midnight seems to be decidedly the most convenient for the ordinary business of civil life. In this case, the same piece of work is seldom divided between two days, as must frequently happen when the day is made to begin at sunrise or sunset. With us it is rarely necessary to look at the clock or the sun to know what day of the month or week it is. Astronomers, however, find it most convenient to begin the day at noon, 12 hours after the commencement of the civil day, as the time of noon can be accurately determined by observation. They are accustomed, moreover, to count the hours continuously from 1 to 24, whereas, in civil reckoning, the hours being counted from 1 to 12, and then repeated, it is necessary to distinguish the two series by A. M. and P. M. Navigators also begin the day at noon, and count the hours from 1 to 24, after the manner of astronomers; but they begin their computation 12 hours *before* the commencement of the civil day, and consequently 24 hours before the commencement of the astronomical day.

Weeks.

The week approaches pretty nearly to a quarter of a lunation; but it has no very obvious foundation in nature. It appears, notwithstanding, to have prevailed very extensively over the world, and from the earliest times; and what is still more remarkable is, that the days of the week are so generally named after the sun and planets. This manner of distinguishing the series of seven days, "is found to be the same among the ancient Egyptians, Indians, and Chinese. Still the order is not that of the distances, magnitude, or brightness of the planets. It is an order that is apparently arbitrary, or which is at least founded upon reasons not known to us."* Sunday is the Sun's day, Monday is the Moon's day, Tuesday, Wednesday, Thursday, and Friday, are derived from Tuesco, Woden, Thor, and Freya, the Saxon names of Mars, Mercury, Jupiter, and Venus.

Months.

The months, with the exception of February, are either of 30 or 31 days; and the following lines, intended to assist the memory, are as useful as they are trite:

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

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* Bailly's Histoire d'Astronomie.

February hath twenty-eight alone,
And all the rest have thirty-one;
Except in leap year, then, in fine,
February's days are twenty-nine."

Our names of the months have come down to us from the Romans; January is said to be derived from Janus, an ancient king of Italy; February from *februo*, to purify; March, from Mars; April from *aperio*, to unfold; May, from Maia; June, from Juno; July and August were so named in honor of Julius and Augustus Cæsar. Before the time of Julius Cæsar, these months were called Quintilis and Sextilis, being the fifth and sixth months, reckoning, as the Romans did at that time, from March, as the commencement of their year. September, October, November, and December, signify the seventh, eighth, ninth, and tenth months from March, when the year began.

Year.

The year is a striking period of time obviously marked by the return of the sun to the same point in its course through the heavens, and its consequent effects in renewing the productions of the earth. The year in civil reckoning, that is, the period of the seasons, is not exactly the time of an apparent revolution of the sun in absolute space; in other words, it is not strictly the time employed by the sun in returning to the same star, since those points of the sun's course (or the ecliptic), on which the seasons depend, shift backward a little (50″) while the sun is going round. This is called the *precession of the equinoxes*. Now the sun is about twenty minutes, according to its ordinary rate of 360° in a year, in moving through this space of 50″. Hence the year of the seasons, technically called the *tropical* year, is about twenty minutes less than a sidereal year, or a complete period through the heavens. But this precession of the equinoxes, which thus shortens the year of the seasons, and which is caused by the attraction of the sun and moon exerted upon the matter accumulated about the equator, is not always the same. It is sometimes greater, and sometimes less. It is a little more now than it was two thousand years ago, the necessary consequence of which is, that the year is shorter than it was. The difference for the period above mentioned amounts to about 11 seconds.

As the year of the seasons, 365 days, 5 hours, 48 minutes, 50 seconds, does not consist of a certain number of entire days, it has been found difficult to allow for the fraction of a day, and keep the months to the same season. It is important, in civil reckoning, to have the year consist of a certain number of entire days; and Julius Cæsar, in framing the Calendar that is still in use under the title of the Julian Calendar, proceeded upon the supposition, that the year was 365 days and a quarter or 6 hours. He accordingly provided, that the civil year should be 365 days for three years in succession, and the fourth 366, thus making the average length 365¼.

But this was making the year too great by 11 minutes and 10 seconds, which would amount to a day in about 130 years. The error, however, remained uncorrected till the latter part of the 16th century, when Pope Gregory XIII. interested himself in this matter on account of its intimate connexion with the festivals of the church. It appeared from the facts that were submitted to his Holiness, that the vernal equinox at this time happened on the 11th of March, whereas it took place on the 21st of March in the year 325, when the Council of Nice was held. It was proposed to reduce the months to their former places, so that the vernal equinox should still happen on the 21st of March. The variation from this time amounted to about 10 days; and 10 days were accordingly to be suppressed, and actually were suppressed in the month of October, the day following the 4th, being called not the 5th, but the 15th. This correction took place in 1582, and was immediately adopted in all Catholic countries. The Julian intercalation of one day in four years was still retained; and to prevent the like inconvenience occurring in future, it was provided, that when the error of 11 minutes and 10 seconds, according to the Julian mode of reckoning, amounted to an entire day, it should be suppressed. Now the error in question, as we have said, amounted to a day in about 130 years. But instead of suppressing a day every 130th year, whether common or leap year, it was thought preferable to make the correction in leap years only, thus leaving always 365 days at least in the year. Moreover, as the centurial years 1600, 1700, &c. would be leap years, and memorable years, it was wisely determined, that the accumulated error of a day should be dropped in those years, by which they would be reduced to common years. Now the error of one day in 130 years is equivalent nearly to three days in 400 years. Thus by dropping a day every centurial year for three centurial years in succession, and retaining the 4th centurial year as a leap year, the desired effect would be produced, and the civil year would, by a very simple process, be made nearly equal to the tropical year, or year of the seasons. The very small error that still exists, will scarcely amount to a day in four thousand years.

This modification in the Julian Calendar, so simple in itself, and so obviously required, was reluctantly and tardily adopted by those states that did not acknowledge the authority of the Pope. The Reformation was now in its infancy, and every thing was viewed with jealousy that bore the sanction of the see of Rome. It was at length, however, introduced into the Protestant states of Germany in the year 1700; but it was not till half a century afterward, that it found its way into England. The error now amounted to 11 days, a day being suppressed in Catholic countries in the year 1700, and there was 11 days' difference in dates between those who had, and those who had not, adopted the *Gregorian reformation.* This is the foundation of what is called *old* and *new style.* According to an act

of Parliament, the 11 days' excess were suppressed in September, 1752. The day following the 2d, instead of being called the 3d, was reckoned the 14th.* By the same act the beginning of the year was transferred from the 25th of March to the beginning of January. A knowledge of this alteration is of great importance to the understanding of dates anterior to 1752, especially if they relate to events occurring between the 1st of January and the 25th of March. Washington, for instance, was born the 11th of February, 1731, according to the mode of reckoning in use at the time, but on the 22nd, 1732, according to the present improved Calendar. To prevent mistakes, both modes of dating are sometimes used with regard to events that happened before 1752. Thus Washington was born February $\frac{11}{22}$, $173\frac{1}{2}$.

Before the time of Edward IV. there seems to have been three different modes of reckoning, so far as relates to the beginning of the year. With some it began at the Nativity, 25th of December, with others at the Circumcision, the 1st of January. In Scotland, from time immemorial, it began with the 25th of March. From about the year 1462, the custom of beginning the year at the Annunciation, 25th of March, seems to have been fully settled; and this manner of beginning the year was fixed by civil and ecclesiastical authority in the reign of Henry VIII. The above times refer apparently to epochs in the history of the Christian religion. But Julius Cæsar, at the time of the adoption of his Calendar, transferred the beginning of the year from the 1st of March to the 1st of January. It was thought proper to begin the year as near as possible to the time when the sun begins to return, bringing with it the season of vegetation. It is to be recollected, moreover, that the precise time of our Saviour's birth is not known, and in this uncertainty, it was thought best to consider it as taking place on the 25th of December, for no other reason, than that this is the time when the light of the natural sun begins again to visit us.

It was the practice in England, in dating instruments, to refer to the accession of the reigning monarch, till the time of the Commonwealth, when the Puritans and Republicans made use of the Christian era, although chronologists are not agreed as to the precise year when our Lord was born. This custom, introduced during the time when there was no king in England, was found so convenient, that it has continued ever since.

Solar and Lunar Cycle.

The ordinary civil year being 365 days, or nearly 6 hours less than the time of the sun's complete revolution in the ecliptic, it will be seen that upon the return of the 1st of January, or any other date, the sun has not

* Russia has not yet adopted the reformed Calendar, and a day having been suppressed in the year 1800, the difference amounts now to 12 days. This is to be borne in mind in all dates that come directly from that country, as those of memorable battles, treaties, &c.

returned to precisely the same point in the ecliptic. But after four years, when one day is added at the end of February, to make up for the deficiency of a common year, all this is very nearly compensated, and the sun returns to the same point in the ecliptic on the same day of the month and time of the day. This, however, will not happen on the same day of the week. But if we take such a number of years as will exactly contain four (the number after which the sun returns to the same point on the same day of the month), and seven (the number after which the same day of the week returns), we shall have a period or cycle after which the sun comes to the same point of the ecliptic on the same day of the month and of the week. This number is 28, and is called the *solar cycle*. The 1st year of the Christian era was the 10th of the solar cycle. Accordingly, if we add 9 to the current year (1830), and divide the sum (1839) by 28, we shall have, for a remainder, 19, which will be the solar cycle for the year 1830; that for 1831 will be 20, and so on.

The *lunar cycle*, in like manner, is the period after which the moon changes, fulls, quarters, &c. at the same date, that is, the same month, day of the month, and time of the day. There are 12 revolutions of the moon in a year, and 11 days over; after two years the excess will be 22 days, &c. In 19 years these excesses will amount to a certain number of months, without a remainder, so that after the lapse of such a period the moon returns to the same place, and all her phases occur at the same time as before. This is not strictly exact. The new and full moon happen in fact about an hour earlier, after the lapse of each cycle of 19 years, so that the error would amount to an entire day in about 311 years. This cycle is sometimes called the *Golden Number*, from its importance in regulating festivals depending on the moon. It is also called the *Metonic* cycle, from a Greek astronomer, Meton, who invented it 400 years before the Christian era. The 1st year of our era was the 2d of the lunar cycle. Accordingly, if we add 1 to the current year, and divide by 19, the remainder will be the year of the cycle. We thus find that 1830 is the 7th of the lunar cycle.

Epact

Is the excess above mentioned, or number of days over an entire month. Accordingly, if we multiply the number of the lunar cycle, less one, by 11, and divide by 30, the remainder will be the epact. Thus six times 11 are 66, from which if we deduct two intercalary months, of 30 days, the remainder will be 6, which is the epact for 1830.

Roman Indiction

Is a period of 15 years, returning like the other cycles. It was used formerly to regulate the payment of certain taxes. It is combined with

the other cycles in what is called the *Julian Period*, a cycle of 7980 years, invented by Julius Scaliger, and formed by multiplying together the three cycles above described.

Dominical Letter,

Or *Sunday letter*, is that one of the seven first letters of the alphabet which falls on Sunday, the first day in the year being denoted by A, the second by B, and so on from week to week. In a common year of 365 days there are 52 weeks, and one day over; so that the year comes in and goes out on the same day of the week. The year 1829, for example, began on Thursday, and after 52 weeks were completed, there was one day left. It therefore ended on Thursday, and the present year, 1830, came in on Friday. Accordingly, calling Thursday, the first day of the year 1829, A, Friday would be B, Saturday C, and Sunday D. Thus D was the dominical letter for the year 1829; and as the year 1830 begins on Friday, calling this A, and Saturday B, and Sunday C, C is the dominical letter for 1830. By proceeding in a similar manner for 1831, we should find that B would be the dominical letter for this year. Thus we should fall back one letter every year, in common years of 365 days, and in leap year, when there are 52 weeks and 2 days over, we should fall back two letters, and there will be two dominical letters for the year, one till the end of February, and the preceding one for the rest of the year. If leap year begins on Sunday, it will end on Monday, and the next will begin on Tuesday, which being called A, according to the rule above given, Sunday will answer to F, and not G, as in a common year. Thus the order of the dominical letters is interrupted, and the series cannot return to its first state till after a number of years, in which 4 and 7 are contained without a fraction, that is, 28, after which the same days of any month return to the same days of the week.

The Dominical letters were introduced into the Calendar by the primitive Christians; and the seven first letters of the alphabet were set opposite the days of the year, to denote the days of the week, till about half a century ago, when the initial letters of the days of the week were used in their stead, except the Sunday letter, which is still sometimes retained.

III. HOLYDAYS OF THE CHURCH.

The Christian Year commences with the season of Advent, which embraces the four Sundays that immediately precede Christmas. These Sundays are intended to be observed, as a celebration of the general event of Christ's coming, or advent, and as a preparation for the great festival of

his birth. "It is the peculiar computation of the Church," says Wheatley, "to begin her year, and to renew the annual course of her service, at this time of Advent, therein differing from all other accounts of time whatsoever. The reason of which is, because she does not number her days, or measure her seasons, so much by the motion of the sun, as by the course of our Saviour; beginning and counting on her year with him, who being the true Sun of Righteousness, began now to rise upon the world, and, as the Day-star on high, to enlighten them that sat in spiritual darkness." The institution of this season of Advent is of very ancient date; there being proof that it was observed before the year 450.

Christmas Day follows the four Sundays in Advent, and is always commemorated on the 25th of December. It is not pretended that this is the exact date of our Saviour's birth, which it has been found impossible precisely to ascertain. It has been, however, from very early times, the established date of this festival in the Western Church. The derivation of Christmas is from the Latin *Christi Missa*, or Christ's Mass; meaning the Mass or service which is performed this day in honor of Christ.

The Sunday after Christmas requires no explanation.

The Circumcision of Christ is a feast observed on the eighth day after his birth-day, or Christmas; that being the day on which, according to the Jewish law and custom, he was circumcised. This festival was originally called the Octave of Christmas. It falls on the first day of January.

The Epiphany signifies the *appearance* or *manifestation* of Christ to the Gentiles, and is celebrated on the twelfth day after his birth, and of course on the sixth of January. It is also called Twelfth Day. The particular event commemorated on this day, is the visit of the eastern Magi to the child Jesus. After the Epiphany there come four, five, or six Sundays, according to the day in each year on which the moveable feast of Easter occurs.

Septuagesima Sunday is the ninth Sunday before Easter, and the third before Lent, and is followed by Sexagesima and Quinquagesima Sundays. The reason of their being designated by these Latin numerals, is, that the first Sunday in Lent, being forty days from Easter, was called Quadragesima, or the Fortieth, and the three Sundays preceding it were called from the nearest round numbers, Quinquagesima, Sexagesima, and Septuagesima, or Fiftieth, Sixtieth, and Seventieth, reckoning backward from Easter.

Ash Wednesday is the first day in Lent, and was anciently called *Caput Jejunii, the Head of the Fast;* or *Dies Cinerum, the Day of Ashes.* The first name was given to it, because it begins the great Christian fast, and the second, because it was an ancient custom for penitents to appear at church on that day, clothed in sackcloth and ashes. Lent

begins on Wednesday, because, Sunday never being a fast day, the Sundays in the six weeks of Lent are deducted, leaving thirty-six days of fasting, to which are added the four days preceding the first Sunday, to complete the number of forty.

The season of LENT, or the great season of church fasting, comprises, as was said before, six Sundays. It commemorates the fast of our Saviour in the wilderness. The word *Lent* is said to be Saxon, signifying merely *the Spring*, at the opening of which season of the year Lent occurs. The fourth Sunday in Lent is sometimes called Midlent Sunday; the fifth, Passion Sunday; and the sixth, or the Sunday before Easter, Palm Sunday, because it was on that day that our Saviour made his triumphal entry into Jerusalem, while the multitude strewed palm branches in his way.

GOOD FRIDAY is the Friday before Easter, and is so called on account of the blessed effects of the sufferings and death of Christ on the cross, which are on this day commemorated.

EASTER SUNDAY is the great church festival, and celebrates the resurrection of Christ from the dead. On this day depend all the moveable feasts of the church, that is, all those feasts which are not fixed on a certain day of the month. Easter Sunday is celebrated on the first Sunday after the full moon, which happens after the 21st of March. The reason of this is, that Christ rose from the dead on the third day after the 14th of the Jewish first month, or Nisan, on which day the Paschal lamb was eaten, and which corresponds to the day of the full moon immediately after the 21st of our month of March. The subject of the famous dispute, which raged between the Eastern and Western Churches, was, whether the feast of Easter should be kept on the *third day* after the 14th of Nisan, whatever might be the day of the week, as was maintained by the former Church, or whether it should be kept on the *first day of the week*, which should come after the 14th of Nisan, as was alleged by the latter. On either computation, the time at which Easter must occur, varies with the year; but the limits within which it must fall are the 22d of March and the 25th of April, inclusive, making a period of thirty-five days. The derivation of the word *Easter* is uncertain. Some say that it comes from the Saxon *oster*, signifying *to rise*, and others, that it is named after a Saxon goddess, called *Easter*, who was particularly honored at this season of the year.

After Easter are numbered six Sundays.

ASCENSION DAY is the fortieth day from Easter, and is otherwise called Holy Thursday. It commemorates our Saviour's ascension into Heaven.

WHITSUNDAY is the seventh Sunday after Easter, and corresponds with the Jewish Pentecost, which was so called from its being *fifty* days after the Passover. On the day of Pentecost, the Holy Spirit was poured out upon the apostles of our Lord, and it is this event which is commemorated on

Whitsunday, the Christian Pentecost. The derivation of the term Whitsunday is likewise uncertain. According to some, the name is borrowed from the circumstance, that, in the ancient church those who were baptized since Easter, appeared in white vestments on this day. Others would derive it from the French *huit*, this Sunday being the *eighth* from Easter, counting Easter the first. However this may be, it is merely an English appellation, the original term, Pentecost, being retained for this day throughout the Roman Church.

Trinity Sunday is the next Sunday to Whitsunday, of which it was originally but the Octave.

The remaining Sundays in the year, till the return of Advent, are numbered after Trinity Sunday by the English and American Episcopal churches, but after Whitsunday by the Roman Church, according to ancient usage. There are from 23 to 25 Sundays after Trinity, and from 24 to 26 after Whitsunday or Pentecost.

Besides the foregoing principal holydays of the church, there are others which are observed with more or less attention.

St. Andrew's Day is kept on the 30th of November; St. Thomas's on the 21st of December; St. Stephen's on the 26th of December; St. John the Evangelist's on the 27th of December.

The 28th of December is called Holy Innocents', and is kept in honor of the children who were massacred by order of Herod.

The Conversion of St. Paul is commemorated on the 25th of January.

The 2d of February is the Purification of the Virgin Mary, or Candlemas. It commemorates the presentation of Jesus in the temple, by his mother, and is called Candlemas, because the ancient Christians were accustomed to burn abundance of candles in their churches on this day, in allusion to the words of Simeon, who declared Christ to be a light to lighten the Gentiles.

Valentine's Day is the 14th of February.

Shrove Tuesday is the day before Ash Wednesday.

The 24th of February is consecrated to the remembrance of St. Matthias.

On the 25th of March is celebrated the Annunciation of the Virgin Mary. It is likewise called Lady Day.

St. Mark's Day is on the 25th of April; St. Philip's and St. James's on the 1st of May; St. John the Baptist's on the 24th of June; St. Peter's on the 29th of June; St. James's the Greater on the 25th of July; St. Bartholomew's on the 24th of August; St. Matthew's on the 21st of September.

The 29th of September is devoted to St. Michael and All Angels, and is called Michaelmas.

St. Luke is commemorated on the 18th of October; and the 28th of the same month is consecrated to St. Simon and St. Jude.

All Saints' Day is the 1st of November. Hallowe'en is the eve of this day.

IV. THE SEASONS.

The year is remarkably diversified by the seasons, which depend upon the oblique position of the sun's path through the heavens, whereby this luminary rises to different heights above the horizon, making the days sometimes longer, and sometimes shorter, than the nights. When the sun rises highest at noon, its rays fall most nearly in the direction of a perpendicular, and consequently a greater number is received upon any given spot; their action also at the same time continues the longest. These circumstances make the difference between summer and winter. It is true, that the sun is sometimes nearer to us by one thirtieth of his whole distance than at others. This is evident from his diameter being found, by actual measurement, to be one thirtieth larger at one time of the year than at the opposite. But the influence derived from this cause, is directly opposed to that which arises from the perpendicularity of the rays, and the duration of their action; that is, the sun is farthest from us in July, and nearest in January; and the difference between summer and winter temperature would undoubtedly be greater than it now is, if the sun were to remain at the same invariable distance through the year. This, however, applies only to the northern hemisphere. In southern latitudes mid-winter occurs in July, when the sun is at his greatest distance. This may be one cause of the excessive cold which prevails in high southern latitudes, as at Cape Horn and about the south pole, beyond that which belongs to similar latitudes on this side of the equator.

The intensity of the heat in summer, as we have remarked, depends upon the greater or less height to which the sun rises at midday, and its long continuance above the horizon; and the cold of winter, in like manner, is the natural and necessary consequence of the small elevation of the sun at this season, and the shortness of the day. Now it is found, that the sun does not rise so high in summer, or descend so low in winter, at the present time, as it did formerly; in other words, the obliquity of the ecliptic, which is half the difference between the sun's greatest and least meridian altitudes, is growing less and less continually, and the seasons are thus tending, though slowly, toward one unvaried spring. This diminution of the sun's utmost range north and south, since the time of the earliest observations, or during a period of 3000 years, amounts to nearly a fiftieth part of the whole quantity. It may be one of the causes of a melioration of winter, which seems to be

so considerable in those places, where there are the means of making a comparison of the degree of cold, that has prevailed at different times.

The year is naturally divided into four periods by the equinoxes and solstices, or those epochs when the day is equal to the night, namely, 21st of March and 23d of September, and those when there is the greatest difference, namely, 21st of June and 22d of December. Our Winter, Spring, Summer, and Autumn, have reference to these epochs, although their commencement and termination does not correspond exactly to the astronomical times above indicated.

We are apt to imagine, that the four seasons are equal to each other, and that spring and summer are together just half the year. This is not the case, however, more especially with respect to the natural periods so denominated. If, for example, we compare the time from the 21st of March to the 23d of September, with the rest of the year, we shall find a difference of about one week, the former being the longer. We may thus be said to have a week more summer than winter. But this benefit of a long summer is confined to the northern hemisphere, which is so distinguished by natural advantages, and not less certainly by moral and political ones. We must not forget, however, that this natural distinction is not a permanent one, whatever the others may be. This longer continuance of the sun in the northern hemisphere arises from the particular position of the sun's oval orbit, or path through the heavens. We have already stated, that the sun is nearest to us in the winter season; in other words, the earth is nearest to the sun, and on this account its motion is more rapid, so that the part of the orbit from the autumnal equinox (September 23d) to the vernal (March 21st), is completed a week sooner than the other half, in which the motion is slower. But the point of the sun's nearest approach, or perihelion, on the position of which the above mentioned physical advantages depend, is in motion, whereby we are gradually losing the benefit of a prolonged summer, and in about 5000 years shall cease to enjoy any such privilege. In about 10,000 years the condition will be reversed, and the southern hemisphere will be the favored portion of the globe. It may be worth mentioning, that at the date fixed by chronologists for the first residence of man upon the earth, the sun's influence was equally distributed to the two hemispheres.

V. THE ZODIAC.

The term *zodiac* comes from a Greek word signifying animal, because most of its divisions are named after certain animals. It is a broad zone or belt in the heavens extending each way from the ecliptic, or sun's path, so as to comprehend the orbits of all the planets that were known to the ancient astronomers. It is divided into twelve parts, answering to the

twelve months of the year, or twelve revolutions of the moon. These divisions of the zodiac comprehend certain collections of stars, and are thence denominated *constellations.* They are also called *signs*, because they indicated, as the sun approached them, or was in them, the season of the year; and thus, before almanacs were invented, they were of great importance as a guide in the labors of the field. These divisions began at the vernal equinox, or point in the spring where the sun is when the days and nights are equal all over the earth, which, in the temperate climates of the northern hemisphere, is about the beginning of the season of vegetation, and corresponded nearly, in ancient times, to the beginning of the year. The first divisions, Aries, Taurus, Gemini, in which the sun is from the 21st of March to the 21st of June, indicated the season of reproduction. The 4th sign, *Cancer, the Crab*, an animal that moves sideways and backward, commences at that point of the sun's annual course in which he begins to move back toward the south. The 5th sign, *Leo*, is thought to denote the period of the sun's greatest power. The 6th sign, *Virgo*, which is represented by a female with an ear of corn in her hand, is supposed to be descriptive of the season of harvest. The sign *Libra*, is probably so named from the circumstance that the sun, when it enters this sign, imparts equal day and night to all parts of the earth. The *Scorpion*, or 7th sign, may have been intended to mark that part of autumn in which diseases are most prevalent. Of the remaining signs, *Sagittarius* is understood to mark the season of hunting; and *Capricornus* the point in the ecliptic from which the sun begins to mount toward the north. *Aquarius* and *Pisces* have been explained as referring respectively to the rainy season and the season of fishing.

It is a great mistake to suppose, as some are apt to do, that there is any resemblance between the collections of stars belonging to these signs and the animals whose names they bear. There is some foundation for such a supposition with regard to some of the constellations out of the zodiac, as the *Swan*, the *Crown*, &c. But with respect to those of which we have been speaking, and most of the constellations in other parts of the heavens, no such idea probably ever entered into the mind of the persons who first gave them their names.

The signs and constellations, commencing as they both did formerly at the vernal equinox, coincided with each other throughout the zodiac. But the equinox is continually shifting backward, contrary to the direction of the sun's annual motion, thus departing farther and farther from the stars which once occupied their place. But the first division of 30°, reckoned from the equinox, is still called Aries, the second Libra, &c., since they continue to denote the same season. They are, however, no longer the same constellations. The collections of stars, known by these names, are left far removed from the part of the sun's path in which they formerly

indicated a particular season. The sun enters the sign Aries on the 21st of March, but it does not enter the constellation Aries till a month later. Still the sun, on entering the sign Aries, brings with it the same season that it did 2000 years ago, when it entered the sign and constellation at the same time. By this retrograde motion of the points on which the seasons depend, known by the name of the *precession of the equinoxes*, the signs have withdrawn from the constellations about one-twelfth part of the whole circuit of the heavens, and in 24,000 years more, they will have gone entirely round, so as to resume their former places. Hence it will be seen that, although the ancients made use of particular positions of the stars with respect to the sun, as their rising just before the sun, or their setting just after it, as indicative of the seasons, yet this method would lead to great errors after the lapse of a considerable period.

VI. ASTROLOGY.

The greatest absurdities that have prevailed in the world, if thoroughly examined, will be found to have some decent apology, some plausible foundation; for they have been received with favor by men of the same nature with ourselves. It is admitted on all hands, that the heavenly bodies determine our physical condition. The obliquity of the ecliptic, the precession of the equinoxes, the progressive motion of the apsides, the nutation of the earth's axis, may be mere sounds to most ears; but, understood or not, they stand for facts, the influence of which is felt by all. Whether a man shall be 4 or 6 feet high, whether he shall be, in strictness of language, a rational being, or a mere slave of his passions, may depend upon the latitude in which he happens to be born. Not only the plague, the yellow fever, the malaria, the sirocco, and east wind, are determined by geographical limits, but also, to a greater or less degree, moral and political diseases, the contagion of licentiousness, and the storms of the passions. The physical man and the moral man are united by the closest communication and sympathy. They are, like the Siamese twins, bound to each other by a strong and indissoluble tie. Now the material frame, with its exquisite structure, its wonderful mechanical contrivances, and fine organs of sense, grows up like animals and plants, by a continual accession from surrounding matter. It is nourished and matured by fire, air, earth, and water. As a greater degree of heat accelerates the progress of a plant, so a tropical sun brings to maturity those physical and intellectual powers, which require twice the number of revolutions of the sun to perfect them in a more northern clime, where his rays exert but half the energy. Thus the developement of mind, like the opening of a flower, takes place sooner or later, according to the state of the thermometer; moreover, in the subsequent period of manhood, the more or less perfect predominance of reason

and the higher principles of our nature, is intimately connected with the physical character of the world about us.

It will not be denied, that whatever belongs to soil and climate, to scenery, to animal and vegetable productions, to the air we breathe, and the light by which we see, is derived more or less directly from celestial influences. Day and night, summer and winter, seed-time and harvest, with their mighty train of consequences, are the simple and natural results of our different positions with respect to the sun. This has been felt by those who have attained to little that deserves the name of science; and it required but little observation and study to be able to predict the return of the same season, and the time of the rising and setting of the sun. A longer series of observations and more elaborate calculations, resulted in foretelling also the particular aspects and positions of other heavenly bodies. At length the wonderful phenomena of eclipses of the sun and moon, were announced, long before they took place, with a degree of truth and exactness, that astonished the world. This being accomplished, it was an easy transition in the minds of the mass of mankind, in an unenlightened age, to extend this prescience and foresight to other natural events, as earthquakes, famine, and pestilence. Those who could predict the extraordinary phenomena of eclipses, might well be presumed to understand every thing relating to such minor occurrences as rain, hail and snow, winds and tempests; and in an ignorant age, and among a debased and credulous people, such predictions would be readily confounded with those of a moral and political nature.

Our knowledge extends to the future with respect to those events, all the causes and circumstances of which we perfectly understand. Eclipses of the sun and moon, planets and stars, depend simply upon their relative positions. Now the motions of these bodies result from a few simple laws, which we have succeeded in discovering, so as to be able to tell where one of these bodies will be at any particular time, almost to a hair's breadth. We are thus able to predict eclipses accurately, and men rely fully upon these predictions, because they have so long been found by the experience of the world to prove true. Now the motion of the air, or wind, depends upon the same general principles, as the motion of the heavenly bodies. But here on the earth there are, for the most part, so many things to be taken into consideration, that we are unable, except in some of the most simple cases, to anticipate the result. We could predict the motion of a cannon ball as we do that of a planet or comet, if the air were removed, and we knew the initial velocity and direction; and we can allow for these modifying circumstances according to the accuracy of our knowledge of these circumstances. We can also predict, to a certain degree, the direction, velocity, &c. of the wind in certain parts of the earth, as between the tropics, on small islands, &c. where we are acquainted with

all the leading circumstances of the phenomena. But in the temperate latitudes the causes affecting the direction and force of the wind, are very numerous, and too imperfectly known, to admit of any such attempt. We can calculate accurately the length of a particular day at any place, and the altitude of the sun at any hour of the day. In other words, we can state accurately the general causes which determine the temperature of such a day in such a place. But there are many modifying circumstances, as the direction of the wind, the clearness of the atmosphere, &c. which we cannot take into consideration; and therefore we can predict the temperature only in a general way, without being able to say precisely at what degree the thermometer will stand.

Fair weather and foul are the result of so many causes, some of which, as the chemical changes that are going on in the atmosphere, are so imperfectly understood, that we can make no pretensions whatever to foreknowledge in these particulars, as we do in regard to eclipses. There are, it is true, certain states of the air, and certain appearances in the heavens, that are generally followed by a change in the weather; and a long habit of observation may enable seamen and others deeply interested, to anticipate the weather for a few hours. But no one can lay claim to such knowledge a week beforehand, and still less in season to insert it in an Almanac. All such predictions, therefore, from whatever authority, are to be regarded as a species of quackery, the relics of astrology, of a system of fraud, which the selfish and designing are always ready to practise upon the credulous and unthinking part of society.

Some of our Almanacs continue to give the name of *dog-days* to a certain period extending from the latter part of July to the beginning of September; and many persons perhaps still believe, that the Dog-Star, or Sirius, has something to do with the warm and sultry weather which we usually have at this season. The fact is, that the sun was formerly in the neighbourhood of this star at this time of the year; and before other and better means were devised, the near approach of the sun to a star was used to denote the season. Two thousand years ago it so happened, that the sun passed this star in the warmest part of summer. But it does not pass it so soon now by a month, on account of the precession of the equinoxes; and in about 8000 years, it will be later still by five months, and dog-days would happen in the middle of winter. Aware of this, Almanac-makers were in doubt for some time whether they should give the name of dog-days to the warmest part of summer, or to the time when the sun is near this star. But finding at length, that if they conformed to the original idea, they should gradually carry this period into autumn, they left the star, and returned to the season intended to be marked by it.

VII. MOON'S PHASES, HARVEST MOON, ECLIPSES, &c.

The moon does not shine by its own light. It is illuminated, like the objects about us, by the rays of the sun. Accordingly, only that part appears bright, which is turned toward the sun. As the moon revolves round the earth in nearly the same direction in which the sun revolves, it is sometimes between us and the sun, passing, however, for the most part, a little to the north or south, instead of coming into an exact line joining the earth and sun. At these times the illuminated part of the moon is turned directly from us, and for a day or two we lose sight of the moon entirely. This is called the *change* or *new moon*. But as the moon moves among the stars so much faster than the sun as to go round and come up with the sun again in about 29½ days, it soon departs so far from the sun, that a narrow streak of light is discernible; that is, the hemisphere presented to the sun, and of course always illuminated, is slightly turned toward the earth, exhibiting at first a semicircular thread of light, which soon enlarges to a crescent; and, at the end of seven days, becomes a semicircle. This is what we call the *first quarter*. At this time the line joining the earth and moon is at right angles to the line joining the earth and sun, and half the illuminated hemisphere is turned towards us. The moon now rises about noon, and passes the meridian about 6 P. M. The moon pursuing its course farther and farther from the sun, the phase enlarges beyond a semicircle, and in about 7 days more it presents an entire circle, and is called the *full moon*. It is now opposite to the sun in the heavens, rising when the sun sets, and setting when the sun rises. From this time it begins to approach the sun on the other side, going through the same changes as before, only in an inverted order; so that in a little more than a week after the full, it becomes again a semicircle, rising near midnight, and setting near noon. This is called the *third quarter*. It thence decreases, becomes a crescent, and overtakes the sun again, at which time it disappears as before, and recommences the same changes.

As the moon completes a revolution in about 29½ or nearly 30 days, it must move at the rate of $\frac{360}{30}°$, or 12° a day nearly. Now the daily apparent motion of the heavens, or real motion of the earth on its axis, is at the rate of $\frac{360}{24}°$, or 15° in an hour. If therefore, the sun and moon are on the meridian at the same time to-day, to-morrow, when the sun comes to the meridian, by the diurnal motion, the moon will be 12° to the east, and will of course arrive at the meridian nearly an hour (50m.) after the sun. This interval of 50 minutes will be doubled the second day, tripled the third, and so on. Similar intervals will take place also between the rising of the sun and moon; in other words, the moon will rise at a mean about 50 minutes later and later every night. We say at a mean, because the

moon's path is much more oblique to the horizon at some times than at others, on which account there is a much less difference in the time of rising and setting two successive nights. On the supposition that the moon's orbit coincides with the ecliptic (it is inclined only about 5°), it would make the least angle with the horizon when in the 1st of Aries, and it would rise two successive nights with a difference much less than 50 minutes. But we take little note of the moon's rising, except when near the full, and there can be in a year only one full moon, or at most but two full moons, when the moon is near the 1st of Aries, or the vernal equinox, at which time the sun would be near the 1st of Libra; that is, this favorable circumstance in the moon's rising, will happen in the latter part of September or the beginning of October; and being at the busy season of harvest, when the light of this prolonged full moon facilitates the labors of the husbandman, it has obtained the name of the *Harvest moon.* The next full moon, having in some degree the same character, is sometimes called the *Hunter's moon.*

When the moon thus rises for several successive nights with the least difference of time, on account of the smallness of the angle which its path makes with the horizon, it sets with the greatest difference, since, at setting, the angle which its path makes with the horizon, is now the greatest. Each of these circumstances tends to prolong the time that the moon is above the horizon.

The conditions of the harvest moon are reversed at the opposite season, namely, in March, when the full moon takes place in Libra; and now it rises for several successive nights with the greatest difference, and sets with the least.

We have considered the moon's orbit or path as coinciding with the ecliptic, whereas it is inclined about 5°; and it will accordingly be sometimes inclined to the horizon 5° more and sometimes 5° less, than the ecliptic. On this account the difference in the time of rising of the harvest moon is continually varying from year to year, through a period of nearly 19 years, in which the series is completed.

Since the angle which the moon's path makes with the horizon becomes less and less as we increase our latitude, so the circumstance above noted, of the small difference in the rising of the harvest moon, is more conspicuous in high latitudes, and less so as we approach the equator. Thus those parts of the earth are most favored in this respect, which, on account of the shortening of the days, most need this benefit of the moon's presence.

We have already mentioned, that at new moon, or when the moon comes between us and the sun, it generally passes a little to the north or south of the sun, and hardly ever falls exactly in a line joining the earth and sun. This is owing to the oblique position of the moon's orbit to the

sun's, or the ecliptic. But when new moon happens near the time the moon is passing its node or the point of intersection of its orbit with the ecliptic, then it will come into a line joining the sun and some part of the earth, and the sun will be more or less obscured. This is called an *eclipse of the sun;* and it will be seen, from what has been said, that this phenomenon can occur only at the time of new moon, and when the moon is near its node or the point of intersection of its orbit with the ecliptic. The moon passes between us and the sun just as a cloud does, which is driven along by the wind, and the eclipse will happen, in each case, only to those who are in the shadow cast by the opaque object. To those who are without the shadow, there will be no eclipse. It should be remarked, however, that there is, surrounding a shadow caused by the sun, an imperfect shade, called the *penumbra*, throughout which a part of the sun is seen. This penumbra surrounds the proper shadow of all objects where the luminary is an extended surface, like the sun. Let a balloon be supposed to pass directly between us and the sun. If it is so near to us as to appear larger than the sun, it will completely hide it from us, and we shall then be in the proper or perfect shadow of the balloon. But let the balloon be raised so high as to appear smaller than the sun, or whether larger or smaller, let it pass directly between us and a part only of the sun's disc, and we shall fall into the penumbra, where the sun's light is only partially interrupted. Now, by far the greater part of the eclipses of the sun are of this description. Only a part of the moon is interposed between us and the sun, the sun's and moon's centre and the spectator not being in a straight line. Moreover, the moon is generally too small to cover the whole of the sun. Under the most favorable circumstances, that is, when the moon is in perigee, or approaches nearest to the earth, and the sun is at its greatest distance, the proper shadow would cover only a very small space, compared with the whole extent of the earth, and would pass by the spectator in eight minutes. This is the longest total eclipse of the sun that can ever take place; and it requires such a concurrence of circumstances as will scarcely ever be united.

When the moon's centre passes very nearly over the sun's centre, and it is at the same time too small to cover the sun, a ring of light appears all round the circumference. This is called an *annular* eclipse.

When the moon at the full comes very nearly into a line joining the earth and sun, it will cross the earth's shadow, and be obscured. This is an *eclipse of the moon.* It will be seen, that it can happen only at the full. The earth having a diameter nearly four times as great as that of the moon, will project a shadow nearly four times as far. It is worthy of remark, that the moon seems to have been so placed, by the hands of the Creator, that its shadow shall, for the most part, just fall short of the earth. But the earth's shadow, at the distance of the moon, has a diameter considerably

more than double that of the moon itself, so that a total eclipse of the moon may often happen, without the moon being exactly in the ecliptic, at the full. Total eclipses of the moon, therefore, are not unfrequent, and they may be of considerable duration. The eclipse, from beginning to end, under the most favorable circumstance, may last nearly four hours; and it may continue total for very nearly two hours.

An eclipse of the moon comes on so gradually, that it is difficult to find the beginning and end very accurately. This is on account of the imperceptible gradation of the penumbra. Eclipses of the moon, therefore, are of much less value in determining the longitude than those of the sun, the beginning and end of which can be noted with the greatest precision.

The earth presents a larger surface, in eclipses of the sun, for the moon's shadow to fall upon, than the section of the earth's shadow, at the distance of the moon, presents for the moon itself to pass over in eclipses of the moon. Hence there are, absolutely considered, more eclipses of the sun than of the moon. But what we call eclipses of the sun, being only eclipses of the spectator, they are, in fact, of very limited extent; while those of the moon, being real obscurations of the luminary itself, take place with respect to an entire hemisphere, or throughout the extent to which the luminary is visible at the time. Accordingly, although there are more eclipses of the sun put down in the calendar, than of the moon, yet in any one place there are more actually seen of the latter than of the former.

The stars which are situated near the ecliptic, are liable, like the sun itself, to have their light intercepted by the moon. This phenomenon is called an *occultation*. As the moon moves among the stars about 12° a day, it moves about half a degree, that is, one diameter, in an hour; and consequently, a star may remain about an hour behind the moon, when it happens to take the direction of a diameter. The disappearance of the star, by the interposition of the moon, is denominated the *immersion*, and its reappearance, the *emersion*. Each of these phenomena is very sudden, and affords a favorable means, like the different phases of a solar eclipse, of determining the longitude of a place.

VIII. TIDES.

The ebb and flow of the sea are evidently connected with the moon's motions. The level of the ocean is slightly disturbed by the attraction which is alternately exerted and withdrawn. The waters for a large space under the moon, being more attracted than the great body of the earth, are thus rendered lighter than those parts of the ocean which are at the same distance as the earth's centre; and being lighter, they are forced up-

ward a little by the surrounding mass, which is heavier; just as water and oil will stand at different heights in the two branches of a syphon tube; or just as ice, which is lighter than water, is made to rise a little higher, on that account, when placed in water.

If the earth rested immovably upon a fixed support, there would be a tide, or rising of the waters, only on the side toward the moon. But the great body of the earth is just as free to move as a single particle of the ocean, and if suffered to yield to the moon's attraction, would be carried just as fast. Hence, for the same reason that a particle of water on the side of the earth toward the moon is drawn away from the centre, or has its downward tendency diminished, so the solid earth itself is drawn away from the mass of waters, on the side of the earth farthest from the moon. It is the difference of attraction, in both cases, between the surface and the centre, which causes the lightness of the waters, and the consequent elevation. It will be seen, therefore, that, taking the whole earth into view, there are always two high tides diametrically opposite to each other, and two low tides also, midway between the high ones. The high tides are two great waves or swells, of small height, but extending each way through half a right angle. These waves follow the moon in its monthly motion round the earth, while the earth, turning on its axis, causes any given place to pass through each of these swells and the intervening depressions, in a lunar day, or 24h. 50m.

What we have said with respect to the moon's influence in disturbing the level of the ocean, may be applied also to that of the sun; only, in the case of the sun, although its absolute action is about double that of the moon, yet, on account of its very great distance, the relative action upon the surface of the earth, compared with that at the centre, is about one third as great as that of the moon. At new and full moon, when the sun's and moon's actions conspire, the tides are highest, and are called *spring* tides. But at the first and last quarters of the moon, the action on one body tends to counteract that of the other, and the tides, both at ebb and flow, are smallest, and are called *neap* tides.

We have supposed the highest tides to happen at new and full moon, and the lowest at the quarters. But the waters do not yield instantly to the action exerted upon them; the greatest effect takes place some time after the attractive influence has passed its point of greatest power. Thus the spring and neap tides actually occur about a day and half after the times above indicated. So, also, for a similar reason, the real time of high water, in the daily tides, happens about three hours after the moon has passed the meridian.

It will be perceived, from what has been said, that the sun's and moon's influence will vary with a change of distance, being greatest when the attracting body is nearest, and *vice versâ*.

The phenomena of the tides are modified, moreover, by the situation of the sun and moon with respect to the equator, and the particular latitude of the observer. When, for instance, the moon passes near the zenith of the observer, supposed to be in one of the temperate zones, the opposite high tide will be in the same latitude on the other side of the equator; consequently, under the above circumstances, the high tide, when the moon is above the horizon, exceeds the high tide when the moon is below the horizon; and at a point in the direction of the nearest pole, 50° from the place where the moon is vertical, there will be only one tide in 24 hours.

The different heights to which the same tide rises in places but little distant from each other, depend upon local circumstances; as the particular form of the coast, the meeting of currents, &c. Where a bay grows narrower and narrower, like a tunnel, as it runs up from the ocean into the land, the swell of water must rise higher, as the passage becomes more contracted in breadth. Thus in the Bay of Fundy, which answers to this description, and is of great extent, the tide sometimes rises to the height of 70 feet.

It is frequently asked, why there are not tides in the inland seas and larger lakes. If we observe, upon an artificial globe, the very small space occupied by the largest bodies of water of this description, we shall readily perceive, that there can be no appreciable difference in the action of the moon upon so small a portion of the earth's surface; the whole of the lake or sea, therefore, becomes lighter when the moon is over it, and there is no heavier mass of water 90° distant to force it above its natural level.

IX. SPOTS ON THE SUN.

The sun's spots have now been observed and speculated upon, for more than two hundred years. There is nothing like regularity in their form and appearance. They are as various in magnitude, and as diversified in figure, as the clouds of our atmosphere, and some of them are as fleeting. Sometimes twenty, thirty, and even fifty may be seen at once; sometimes none are to be found for a number of years. They have been known to occupy an extent, equal to a fifth of the sun's diameter in length, and a twentieth in breadth.

Some spots are darker, and others brighter, than the rest of the disc. They are often found to succeed each other alternately in the same place. The dark spot consists generally of two parts, a centre and a border, or *nucleus* and *umbra*, as they are called. The centre is of a darker shade than the border, and the border is darkest towards its outer edge, and is distinguished from the deeper colored nucleus, by a well defined and very marked difference of light. But a circumstance of the utmost importance,

as indicating the nature of these spots, is, that they are all in motion, and all move with the same rapidity, and in the same direction, and if they continue long enough, they all return in nearly the same time. They are about fourteen days in passing over the sun, from east to west apparently, and in the same time reappear again in the east. Few remain long enough to make an entire revolution. One has been observed during nearly three complete periods. It appears also that these spots, at particular seasons of the year, move over the sun in straight lines, at all other times in lines more or less curved; and the paths described by different spots, observed at the same time, are always parallel to each other, and always have their curvature and position determined by the season.

These few facts will enable us to judge of the value of most of the hypotheses that have been proposed respecting the nature of the phenomena in question.

If our lakes Superior, Ontario, Erie, &c. were visible to a spectator at the sun, they would exhibit an appearance very similar to that which the solar spots do to us. They would not appear to pass over the centre of the earth's disc; they would all move across in the same time. They would describe straight lines, when our days and nights are equal, about the middle of March and middle of September. At all other times, their paths would be curved, and most so, at the time of our longest and shortest days. Besides, they would appear broadest when near the middle point of their passage; and at their entering and going off, they would be contracted in breadth, their length, in the direction parallel to the sun's limb, being undiminished.

We conclude, therefore, from the facts that have been stated, that the sun's spots adhere to his surface, and that their motion is produced by the motion of the sun upon an axis not quite perpendicular to the ecliptic. They cannot be Mercury or Venus, for these planets are only a few hours in passing over the sun, and they always appear round, and move apparently in straight lines. They cannot consist of a collection of small planets nearer the sun, for similar reasons. Their motion is too slow, and they ought not to be so long between us and the sun, as they are in describing the rest of their orbits. If half of the orbit described, is comprehended within the sun's breadth, it is a sufficient proof that it coincides with his surface. Their dilating and contracting also, according as they are near the centre or border, seem to be a natural consequence of such a coincidence. This circumstance, moreover, seems not very favorable to the supposition, that these appearances proceed from elevated objects, as mountains or rocks, rising above the luminous matter of the sun. We should expect, were this the case, that they would exhibit a greater breadth and more of a triangular form, when viewed in a direction perpendicular to their basis, and that we should have the same spot return, after a certain

interval of time, presenting the same appearance, and occupying the same place. But nothing of this kind is to be found in the history of these appearances.

There was a remarkable spot in 1769, which appeared to be depressed below the surface of the sun. As it approached the limb, the umbra, or shadowy margin nearest the centre of the sun, disappeared first. On its return to the other limb, the other margin, being nearest the centre, was invisible. It was hid apparently by the intervening portion of the sun's body. As the spot advanced upon the disc, it came into view. Sir W. Herschel observed many appearances of this kind, and was fully persuaded, that these dark specks were below the surface of the sun. He has given views and observations, which tend very much to confirm this opinion. He undertook to measure the sides of the depression, and to determine its depth. He thought that the phenomena of the spots arise, not from excavations in the body of the sun, but from openings in his atmosphere; that the solid substance of the sun is opaque, like the planets, and that, like the planets, it is surrounded by an atmosphere; that this atmosphere is transparent to the height of about 2000 miles, and gives support at this elevation to a stratum of dark clouds, on which, as the outer substance of the sun, rests the flood of luminous matter, which presents itself to the surrounding planets. This light is supposed to be produced by the combustion of gases, which are generated below, and which in their ascent drive away the clouds and billows of flame that float upon them, and thus give us a glimpse both of the opaque surface of the sun, and of the cloudy stratum above it, and that these form the nucleus and umbra of a spot. Our earth probably presents similar appearances to the inhabitants of the moon. Where it is covered with clouds, it will exhibit a uniform brightness; where there are breaks and interruptions, the naked body of the earth will be seen of a darker shade, on account of those clouds, which intercept much of the light. The sides of the opening also would present themselves alternately, as the earth revolved on its axis, by which means their depth might be ascertained, as Herschel ascertained the depth of the openings in the solar clouds.

The sun's spots, then, according to this hypothesis, are chasms in his atmosphere, occasioned by ascending currents of gaseous fuel, and they are succeeded by *faculæ*, as they are called, or bright spots, on account of this additional supply of combustible matter, which, it may be supposed, is most completely on fire soon after the opening has closed. But how is the sun ordinarily furnished when there are no spots? The gas may be more diffused, and by ascending in smaller quantities, may produce no sensible disturbance of the luminous fluid. Besides, there are probably openings, that are too small to be seen, and the sun may never be free from them. It is only when their absolute magnitude is very great, that they become an object of any attention.

Herschel observed, that the luminous matter of the sun, when viewed with his best telescopes, is far from preserving always the same aspect. It is sometimes even and tranquil, and sometimes it is thrown up into ridges, and appears to be agitated, like the sea in a storm. The changes, when in this state, are often very rapid, small openings are formed and closed in a few minutes, and clouds are seen passing with a rapidity, that considerably alters their situation in the course of an hour. These fluctuations are more particularly observed during the time of large and frequent spots. Hence Herschel inferred, that there is a variable emission of light and heat, intimately connected with the appearance and disappearance of spots, and that seasons of uncommon heat and cold, of fertility and barrenness, so far as they depend upon the supply of heat, are to be traced not so much to accidental causes near at hand, as to the inconstancy of the fountain. We are like plants in a green-house, that are healthy and vigorous, or chilled with the frost, according as the flues are well or ill attended to. We depend for the very means of subsistence, as well as for all the comforts of climate, upon operations, that are going on ninety millions of miles off; upon the more or less rapid compositions and decompositions, that are taking place in this great laboratory of nature.

As the sun's spots move across the disc all in the same direction, and in the same time, and are as long behind the sun as they are before it, we infer that they belong to the surface of the sun, and are carried about by the sun's rotation. From the position of the paths described by the spots, we are able, moreover, to calculate the position of the axis on which the sun turns. It is not exactly perpendicular to the ecliptic, but inclined about 6°. As the spots are about 14 days in passing across the disc, it will be readily seen that the time of an apparent rotation is about 28 days. We say apparent, because, as the earth is carried round the sun in the same direction, a spot must describe as much more than a real revolution, as the earth has moved in the same time. Whence, to a spectator at rest, the sun would complete a revolution in between 25 and 26 days.

X. ROTATION &c. OF THE PLANETS.

It is a curious fact that the motions of the planets, both in their annual course round the sun, and in their rotations on their axes, are nearly in the same direction, namely, from west to east. The same remark is applicable, also, to the satellites, so far as our knowledge extends, with the exception of those of Uranus or Herschel.*

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* Herschel's six satellites have their orbits nearly perpendicular to the ecliptic. As to their rotation, and that of six of Saturn's satellites, and that of the new planets, we have no information whatever.

It may be remarked further, that the smaller planets take the longer time to complete their rotations. An attempt has been made to explain this on the supposition that the motion in the orbit, and that on the axis, are the result of a single impulse. In this case the larger body would admit of a direction more favorable to a rotatory motion; just as a foot-ball is more likely to turn on its axis, while it is impelled forward, than a batting-ball.

Time of Rotation.

	h.	m.	s.
Mercury	24	5	28.3
Venus	23	21	7.2
Earth	23	56	4.1
Mars	24	39	16
Jupiter	9	55	49.7
Saturn	10	29	16.8
Uranus	Unknown.		

Dimensions of the Planets.

	Mean Diameters of the Planets, in miles.	Mean Diameters of the Planets, that of the Earth being 1.	Surfaces of the Planets, that of Earth being 1.	Bulks of the Planets, that of the Earth being 1.
The Sun	884444	111.7851	12496.0	1396856.0
Mercury	3036	0.3837	0.1472	0.0565
Venus	7590	0.9593	0.9202	0.8828
Earth	7912	1.0000	1.0000	1.0000
Mars	4140	0.5233	0.2738	0.1433
Vesta	269	0.034	0.0012	0.00004
Juno	1393	0.176	0.0310	0.0055
Ceres	1582	0.2	0.0400	0.008
Pallas	2025	0.256	0.0655	0.0168
Jupiter	83937	10.8616	117.97	1281.3
Saturn	79168	9.9831	99.66	994.9
Uranus	35112	4.2630	18.77	77.5

XI. ORBITS OF THE PLANETS.

A fruitful source of error in the ancient systems of astronomy, was the supposition that the motions of the planets took place in circular orbits. Kepler laid the foundation of the present improved state of the science, by establishing the following propositions known by the name of *Kepler's Laws.*

1. *The planets revolve in* ovals, *or elliptical curves, the sun being in the focus of the ellipse.*

2. *The spaces passed over by a line drawn from the sun to the revolving body, in different parts of the orbit, are equal, when equal times are allowed.* In other words, *A planet, as it approaches nearer to the*

sun, moves just so much faster, as to make the space passed over by the revolving radius, in a day, for instance, always the same.

3. *If we take the times in which any two planets complete their revolution, and multiply each by itself; and then take their mean distances from the sun, and multiply each by itself twice; the two first results will have the same proportion to each other, as the two last; in other words, the squares of the times are as the cubes of the distances.*

There are several particulars respecting a planet, given in the following tables, which being known, we are able to calculate its position or place at any time. These are termed the *elements of a planet's orbit*, and are as follows.

1. The time employed in making a complete circuit of the heavens, which is called the *sidereal revolution.*

2. The average distance of the planet from the sun, which is half the greatest diameter of the elliptical orbit. This is called the *mean distance.*

3. The *eccentricity*, or the proportion which the distance from the focus to the centre, bears to the mean distance. This is subject to a slight change, the amount of which, for a century, is put down under the title of *secular variation.*

4. The position or *mean longitude* of the planet, for any given time, as the beginning of the century. This longitude is reckoned from the vernal equinox, or the 1st of Aries, as longitude on the earth is reckoned from any assumed meridian, as that of Greenwich. But celestial longitude is *counted on the ecliptic*, and only in one direction, namely, from west to east, in the direction of the planetary motions.

5. The position of the point of nearest approach of the planet to the sun, is called the *perihelion* (from two Greek words, which signify *about the sun.*) This point is referred, also, to the 1st of Aries, and its position is determined, like that of the planet itself, by its distance from the vernal equinox, reckoned on the ecliptic. This distance is denominated the *longitude of the perihelion.* As the perihelion has a slow motion, its position is given for a particular time, or *epoch*, and also its change of position in a century, termed the *secular variation.*

6. The orbits of the planets not being coincident with, or parallel to the ecliptic, their oblique position with respect to the ecliptic, is of great importance in calculating their places. This is called the *inclination of the orbit.* Like the other elements, it is subject to a slight change; hence the inclination is given for a particular epoch, together with the alteration in a century.

7. The two points in which the orbit of a planet cuts the ecliptic are called its *nodes.* That node through which the planet passes in coming from the south to the north, is distinguished as the *ascending* node. The position of this point is determined, like that of other points, by its distance

from Aries. It is called the longitude of the ascending node. The node, in like manner, has a slight motion; accordingly its position is given for a particular epoch, together with the *sidereal* and *secular variation*, or change with respect to a star in a century.

TABLE OF THE ELLIPTICAL MOTION OF THE PLANETS.

(1.) *Sidereal Revolution.*

	Days.	Years.
Mercury	87.9692580	or $\frac{1}{4}$ nearly.
Venus	224.7007869	$\frac{3}{5}$ "
The Earth	365.2563835	1
Mars	686.9796458	2 nearly.
Jupiter	4332.5848212	12 "
Saturn	10759.2198174	$29\frac{1}{2}$ "
Uranus	30686.8208295	84 "

(2.) *Mean Distance, or Half the Major Axis of the Orbit.*

Mercury	0.3870981 or	37,000,000 miles.
Venus	0.7233316	68,000,000
The Earth	1.0000000	95,000,000
Mars	1.5236923	144,000,000
Jupiter	5.202776	490,000,000
Saturn	9.5387861	900,000,000
Uranus	19.182390	1900,000,000

(3.) *Ratio of the Eccentricity to the Mean Distance, at the Beginning of* 1801, *with the Secuar Variation. The Sign — indicates a Diminution.*

Mercury	0.20551494	0.000003867
Venus	0.00686074	— 0.000062711
The Earth	0.01685318	— 0.000041661
Mars	0.0933070	0.000090176
Jupiter	0.0481621	0.000159350
Saturn	0.0561505	— 0.000312402
Uranus	0.0466108	— 0.000025072

(4.) *Mean Longitude, for the Minute which separates the* 31*st of December*, 1800, *from the* 1*st of January*, 1801, *Mean Time at Paris.*

Mercury	163°	56′	27.0″
Venus	10	44	21.6
The Earth	100	09	13

Mars	64° 06′ 59.9″
Jupiter	112 12 51.3
Saturn	135 19 05.5
Uranus	177 48 01.1

(5.) *Mean Longitude of the Perihelion, for the same Epoch, with the Sidereal and Secular Variation. The Sign — indicates a Retrograde Motion.*

Mercury	74° 21′ 46.9″	9′ 43.5″
Venus	128 43 53.1	— 4 27.8
The Earth	99 30 05.0	19 39.8
Mars	332 23 56.7	26 22.4
Jupiter	11 08 34.4	11 3.9
Saturn	89 09 29.6	32 17.1
Uranus	167 32 06.0	3 59.3

(6.) *Inclination of the Orbit to the Ecliptic, at the Beginning of* 1801, *with the Secular Variation of the Inclination to the true Ecliptic.*

Mercury	7° 00′ 09.1″	18.2″
Venus	3 23 28.5	— 4.6
The Earth	0 00 00.0	0.0
Mars	1 51 06.2	0.2
Jupiter	1 18 51.3	— 22.6
Saturn	2 29 35.7	— 15.5
Uranus	0 46 28.4	3.1

(7.) *Longitude of the Ascending Node, at the Beginning of* 1801, *with the Sidereal and Secular Motion.*

Mercury	45° 57′ 30.9″	13′ 2″
Venus	74 54 12.9	— 31 10
The Earth	0 00 00.0	0 00
Mars	48 00 03.5	— 38 48
Jupiter	98 26 18.9	— 26 18
Saturn	111 56 37.4	— 37 46
Uranus	72 59 35.5	— 59 58

(1.) *Sidereal Revolution.*

	Days.	Years.
Ceres	1681.3931	or $4\frac{3}{5}$ nearly.
Pallas	1686.5388	$4\frac{3}{5}$
Juno	1592.6608	$4\frac{1}{3}$
Vesta	1325.7431	$3\frac{2}{3}$

(2.) *Mean Distance.*

Ceres	2,767245	263,000,000 miles.
Pallas	2.772886	263,000,000
Juno	2.669009	252,000,000
Vesta	2.36787	225,000,000

(3.) *Ratio of the Eccentricity to the Mean Distance.*

Ceres	0.078439
Pallas	0.241648
Juno	0.257848
Vesta	0.089130

(4.) *Mean Longitude at the Beginning of* 1820.

Ceres	123° 09′ 41″.4
Pallas	108 18 28.7
Juno	200 09 32.4
Vesta	278 21 45.1

(5.) *Longitude of the Perihelion at the same Epoch.*

Ceres	147° 07′ 31″.5
Pallas	121 07 04.3
Juno	53 33 46.0
Vesta	249 33 24.4

(6.) *Inclination of the Orbit to the Eliptic.*

Ceres	10° 37′ 26″.3
Pallas	34 34 55.1
Juno	13 04 09.7
Vesta	7 08 09.0

(7.) *Longitude of the Ascending Node, at the Beginning of* 1810.

Ceres	78° 53′ 24″.5
Pallas	172 39 26.8
Juno	171 07 40.4
Vesta	103 13 18.2

XII. SYNODIC REVOLUTIONS OF THE PLANETS.

Each of the planets, after a certain period, returns to the same position with regard to the sun. This period is called the *synodic* revolution, from two Greek words, which signify, *to come together*. It is readily found from the motion of the planet, compared with the apparent motion of the

sun, or, which is the same thing, the real motion of the earth. Mercury, for instance, after coming into a line of conjunction with the sun, will return to the same position, after it has gained one revolution, or 360°; just as the hour and minute hands of a watch, after being together at 12 o'clock, will come together again when the minute hand has gained one revolution of the hour hand. We find the daily motion of Mercury, by dividing 360° by 88, the number of days in a sidereal revolution. The daily motion of the sun, in like manner, is $\frac{360}{365}$ or 1 degree nearly. Mercury, therefore, gains of the sun nearly 3° in a day. Whence, as 3° : 1 day : : 360° : 120 days. By taking the daily motions more accurately, we should obtain a more accurate result. It is thus found that the mean synodic revolution of Mercury is 116 days; that is, after being in any particular position with respect to the sun, as that of a morning or evening star, Mercury returns to the same position again, at a mean, in 116 days. We say at a mean, since this period is subject to some variation, according as the time happens to embrace more or less of that part of the orbit in which the motion is most rapid.

It will be seen by the tables, that the planets move round the sun in less time according as they are nearer or move in less orbits; and while one planet is thus passing another, the slower planet, when referred to the stars, seems to have a motion in the opposite direction. Thus when the earth is passing Mars, that is, when Mars is on the side of the earth opposite to the sun, rising when the sun sets, and crossing the meridian at midnight, Mars seems to move among the stars in a direction opposite to its real motion. Mars is then said to be *retrograde;* and this retrograde motion becomes slower and slower, according as the planet deviates more from the point opposite to the sun, till at length it reaches a position in which it appears for a short time to have no motion among the stars. It is then said to be *stationary*. When Mars thus seems stationary, as viewed from the earth, the earth will seem stationary as seen from Mars. Moreover, when Mars appears retrograde to an inhabitant of the earth, the earth will seem to have a retrograde motion to a spectator in Mars. Thus all the planets, whether nearer the sun than we are, or more remote, are sometimes apparently stationary, sometimes retrograde, and sometimes direct in their motions.

It will be readily perceived, that those planets will have the longest arcs of retrogradation which are nearest to us, while those will appear retrograde for the longest time, that are most distant, and slowest in their motions, as will be manifest from the following table.

	Mean Duration of the Synodic Revolution.	Angular Distances between the Planet and the Sun, at the instant of being stationary.	Mean Arc of Retrogradation.	Mean Duration of the Retrograde Motion.
	Days.	° ′ ″	° ′	Days.
Mercury	116	18 00	13 30	23
Venus	584	28 48	16 12	42
Mars	780	136 48	16 12	73
Jupiter	399	115 12	9 54	121
Saturn	378	108 54	6 18	139
Uranus	370	103 30	3 36	151

XIII. COMETS.

[The following account of Comets is taken from the *Companion to the British Almanac.*]

Objects and phenomena, which are remote in their situations, apparently irregular in the time, or singular in the mode of their appearance, have, in the uninstructed ages of the world, been taken hold of by the cunning, and, being invested with superstitious and supernatural powers, have been made the means of enslaving the human mind. In this way, many pages of the volume of nature have been read as evil, long before the investigations of philosophy taught men to read them for good. Nor is it easy, even with all the intellectual improvement of modern times, to guard completely against abuses of this kind; wherever there is ignorance, there is sure to be credulity; and where credulity exists, there is always found some one ready to impose on it. Hence it becomes the duty of every one who is anxious, in matters of knowledge and action, to separate the wheat of belief from the chaff, to advert to, and, as far as is possible, to explain, those subjects upon which the popular or partially-informed mind is in greatest danger of being abused.

With respect to the several bodies that compose the material universe, and their several appearances and changes, be they ever so distant, ever so singular, or ever so contrary to the current of one's own past experience, there is a general philosophy of common sense, which if we could keep it constantly in mind, would remove, at once, all superstition, and change what have been objects of apprehension to the ignorant, into subjects of instruction and delight. That philosophy is this:—The universe, with every thing of which it is made up, from the smallest animalcule that the microscope can discover—haply not equal to the millionth part of a grain of sand,—to planets and suns, and systems more extended and magnificent than the telescope, or even the imagination of man can reach, is the workmanship of One Almighty Artist, who sees all its parts, and its movements, infinitely better than any human being can discern the working of the simplest tool that he takes in his hand. The workmanship, too, is here perfect at once; the law of every body is not only implanted in itself, but

is the constituent principle of its existence; and, therefore, every appearance which is put on by nature, throughout all its variety, depends upon a cause, as inscrutable in its origin, but as certain and uniform in its operation, as the alternation of day and night, or the succession of the seasons.

Of natural appearances there are few that have been regarded with more superstitious apprehensions than those bodies which occasionally appear in the sky, luminous like the stars, but generally distinguished from these by a tail, or train of fainter light, bearing some resemblance to a tuft or lock of hair. Of this the Latin name is *coma*, and in consequence these bodies are called comets, to distinguish them from the other luminaries, which, whether near or remote, apparently fixed or movable, have not this train-like accompaniment.

Comets are one of the three classes into which astronomers divide those celestial bodies that adorn the sky during the night. The stars, which retain their relative positions with regard to each other, and are at so great distances from the earth, that no means or instruments hitherto invented can measure them, are one class,—and a class not apparently connected with our sun, or deriving light or heat from that luminary. The planets, which change their relative positions among the stars, and of which our earth is one, form the second class. They are solid bodies, and not luminous in themselves, but shine merely by reflecting the light of the sun. The masses of the planets, their magnitudes, and their motions, have been all determined with the greatest accuracy; and the place that any one of them will occupy at any proposed point of time, can be calculated with the greatest ease, by any one acquainted with practical astronomy. The planets are, in their motions, governed by one uniform law. [This law we have already stated, page 83. It is usually expressed in the following terms; "*The squares of the periodic times are to each other as the cubes of the mean distances.*"] This is the grand law of planetary motion; and it is proved by the most careful, and, therefore, the most satisfactory observations, through a period of time that leaves not the least room for mistake or error. Indeed, the theory of this part of astronomy has been found to agree so well with the facts, that, as it is one of the most splendid, so it is one of the most perfect departments of science. The improvements of telescopes, and the watchfulness of observers, have added to the list of the planets a few small ones, which are not visible to the naked eye; but from the time (about the beginning of the seventeenth century) that Kepler* deduced the law of the planetary motions from the observations made on the planet Mars, that law has remained unshaken and undoubted.

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* Those who wish to appreciate the great and successful labors of that illustrious man, may consult Dr. Robert Small's work on Kepler's discoveries, published in 1804.

In the early ages, the planets were held to have certain influences upon individuals and nations. The comets, which are more singular in their form, and more varied in the times of their appearance, were still better adapted for superstitious purposes; and accordingly we find that their visits have been attempted to be connected with the great, more especially the calamitous, events of nations. They were favorite themes with the poets; and they are thus introduced by Shakspeare, in the lamentation which the Duke of Bedford makes over the bier of Henry V.

> 'Comets, importing change of times and states,
> Brandish your crystal tresses in the sky;
> And with them scourge the bad revolting stars,
> That have consented unto Henry's death.'

Milton, too, though he lived after the days of Galileo and Kepler; though he was imbued with all the learning and philosophy of his time; and though he shows that he was well acquainted with the labors of those philosophers, does not scruple to call in the aid of the malign power of comets, in order to heighten his picture of Satan when preparing for combat.

> 'On the other side,
> Incensed with indignation, Satan stood,
> Unterrified, and like a Comet burned,
> That fires the length of Ophiuchus huge
> I' the Arctic sky, and from its horrid hair
> Shakes pestilence and war.'

When such a man alludes to the subject, even for the purpose of illustration, it may well be supposed that the visits of comets were regarded with great apprehensions by the illiterate and the unphilosophical.

The appearance of a comet is, however, no more a prodigy, and has no more influence upon the fate of men or of nations, than the appearance of the moon, or of a leaf upon a deciduous tree in spring. Indeed it has not nearly so much; for the moon, by causing tides, affects the atmosphere and the weather, and must thence, to some extent or other, affect the human body; and the leaf is an indication of the season; but the comets are so distant, and either their motions are so rapid, or their substance is so rare, that none of them have been found to have any material action upon such of the planets as they have come near, although the planets have had a considerable influence upon them.

What the comets are, or what purposes they serve in the economy of creation, we do not know; and they are subjects upon which conjecture would be quite useless. As far as observation has gone—and beyond that one word need not be said—they are subject to the same laws as the planets, revolving about the sun in orbits or paths, with this difference, that they are much more eccentric, or differ much more from circles, than the

orbits of the planets; and thus, while they approach much nearer to the sun at one time of their revolutions, they recede correspondingly farther from it at another. The time since men had rational opinions on the subject has, however, been too short for verifying, by observation, the theory as applicable to the whole, or even the greater number of these bodies that have from time to time made their appearance.

Tycho Brahe, who was an astronomer of Nature's own making, who could not be driven from the pursuit of it by all the influence of his guardian and preceptor, and to whose twenty-one years of close and regular observation at Uranibourg, in the little Danish isle of Huena, the science is more indebted than to the observations of any other individual, was the first who expressed a decidedly rational opinion on the subject of comets. Finding, by careful observation, that the comet of 1577 had no diurnal parallax, which he could detect,—that is, that its place, when viewed from the surface of the earth, was not different from what it would have been if viewed from the centre,—he properly concluded that its distance from the earth must be greater than that of the moon, in which this parallax was apparent to him. This was one step; and it was an important one; it removed comets to such a distance from the earth, that their use could not well be supposed to be for it, or their influence upon it very great.

Kepler, a pupil every way worthy of his illustrious master Brahe, turned the observations on this comet to account in determining (or, at all events guessing at) the motions and paths of comets, just as he did the observations of the planets to the determining of the laws of their motions. His first conjecture was that the comets moved in straight lines; but as that did not agree with the observations, he again concluded that they were parabolic curves, having the sun near the vertex, and running indefinitely into the regions of space at both extremities. Though sixteen comets had been mentioned in history previous to the time (about 1636) when Kepler attempted to determine the form of their paths, there was nothing to fix their identity, so as to lead him to conclude that any one was the reappearance of a former; and thus there was nothing to suggest to him the necessity of a comet's moving in an orbit, so as to return and re-appear at a future period. To do that was reserved for one of the most industrious as well as sagacious of astronomers, Dr. Halley, the contemporary and friend of Newton. The discovery of the law of gravitation by the latter, its being a confirmation of the doctrine of Kepler, and its being found constant and universal, in every situation, whether on the earth or in the solar system, in which it could be traced, gave to the physical sciences generally, and to that of astronomy in particular, a generalization and harmony which had not previously been known. The general law of the motion of bodies in free space, as well as his own particular observations on the comet of 1680, led Newton to conclude that the orbits of the comets must, like those of the planets, be ellipses, having the sun in one focus,

but far more eccentric, and having their *aphelions*, or greatest distances from the sun, far remote in the regions of space.

The idea thus thrown out by Newton, was taken up by Dr. Halley, who collated the observations which had been made of all the twenty-four comets, of which notice had been taken previous to 1680. The results were abundantly curious; with but few exceptions they had passed within less than the earth's shortest distance from the sun; some of them within less than one third of it; and the average about one half. Out of the number, too, nearly two-thirds had had their motions retrograde—or moved in the opposite way to the planets.

While Halley was engaged on these comparisons and deductions, the comet of 1682 made its appearance, and he set about observing it with great care, in order to determine the elements of its orbit. Having done so, he found that there was a wonderful resemblance between it and three other comets that he found recorded,—the comets of 1456, of 1531, and of 1607. The times of the appearance of these comets had been at very nearly regular intervals,—at least the differences had been only fractional parts a year—the average period being between seventy-five and seventy-six years. Their distances from the sun, when in *perihelion*, or nearest to that luminary, had been also nearly the same—being nearly six-tenths of that of the earth, and not varying more than one-sixtieth from each other. The inclination of their orbits to that of the earth had also been nearly the same, between 17° and 18°; and their motions had all been retrograde. Putting them together, Dr. Halley concluded, that the comets of 1456, 1531, 1607, and 1682, were re-appearances of one and the same comet, which revolved in an elliptic orbit round the sun, performing its circuit in a period varying from a little more than 76 years, to a little less than 75,—or having, as far as the observation had been carried, a variation of about fifteen months in the absolute duration of its year, as measured in turns of that of the earth. For this variation in the time of its revolution Dr. Halley accounted upon the supposition that the form of its orbit had been altered by the attraction of the remote planets, Jupiter and Saturn, as it passed near to them; and thence he concluded, that the period of its next appearance would be lengthened, but that it would certainly re-appear in 1757, or 1758. Its doing so was, of course, the fact that was to be decisive of the orbits of comets, and that they were regular and permanent bodies, obeying the general laws of matter.

Halley did not live to see the verification of his prediction; he died in the year 1742, at the advanced age of eighty-four. Soon after his death, Clairault, D'Alembert, and Euler, three of the most eminent mathematicians of Europe, set about the solution of what is called 'the problem of the three bodies,' that is, to determine the paths described by three bodies, projected from three given points, in given directions, and with given velocities, their gravitating forces being directly as their quantities of matter,

and inversely as the squares of their distances. The object of this problem is to find the disturbing effects that the bodies composing the solar system have upon each other; and it applies to comets, when within the limits of planetary action, as well as to the planets themselves. After some errors into which all the three had been led, and which gave a result that seemed to overturn the whole doctrine of gravitation, Clairault succeeded in obtaining an approximate solution, which agreed with and confirmed that theory. Having done so, he applied it to the calculation of the disturbing influence of Jupiter and Saturn, which Halley had predicted would retard the comet of 1682, in its re-appearance about 1758. The results of Clairault's calculations were, that the comet would be retarded 100 days by the attraction of Saturn, and 518 days by that of Jupiter, so that it would not come to the perihelion, or point of its orbit nearest the sun, till the 13th of April, 1759. Clairault, however, fixed certain limits, within which his calculations might probably be erroneous. It was eventually found that the difference between calculation and observation was less than that which he assigned.

Clairault read his investigations to the Academy of Sciences in November, 1758; and, in little more than a month afterwards, the comet made its appearance; and it reached its perihelion on the 13th of March, in the following year, being thirty days earlier than he had calculated. Subsequent calculations enabled him to reduce the error to nineteen days; and, though the calculations of the disturbing forces were only approximations, enough had been done to prove the return, and determine the orbit of one comet, and give every reason for concluding that all comets, being bodies of the same class, are subject to the same general laws as the planets, and only vary from each other in the proportion and magnitude of their orbits. There was one further confirmation; Clairault had calculated that the *node* of the comet's orbit, or the point in which it cut the plane of the orbit of the earth, would advance 2° 33′ in absolute space, or 1° 29′ more than the equinoctial points, the precession of which, in the time of the comet's revolution, was 1° 4′; and observation gave exactly the same result,—so that the only difficulty that remained in the doctrine of comets was in the estimation of the disturbances to which they are exposed from the other bodies of the system, more especially in the parts of their orbits most remote from the sun, where their motions are comparatively slow.

Along with the period of this comet, and its perihelion distance, the magnitude and form of its path were known. Estimating the mean distance of the earth from the sun at 95,000,000 miles, the mean distance of the comet is 1,705,250,000 miles, its greatest distance from the sun, 3,355,400,000; its least distance, 55,100,000; and the transverse, or largest diameter of its orbit, 3,410,500,000. Therefore, though its aphelion distance be great, its mean distance is less than that of Herschel; and, great as is the aphelion distance, it is but a very trifling fraction less than one five-thousandth part

of that distance from the sun, nearer than which the very nearest of the fixed stars cannot be situated; and, as the determination of their distance is negative and not positive,—a distance within which they cannot be, and not one at which they actually are, the nearest of them may be at twice or ten times that distance.

The comet of 1750 is, therefore, a body belonging to the solar system, and quite without the attraction of any body which does not belong to that system; and, as this is determined of one comet, analogy points it out as being the case with them all. Their appearances and disappearances have, therefore, no connexion with the affairs of men; but, like the planets, form part of the proper province of astronomical observation, the chief difference being that the study of them is more recent and difficult, and the knowledge, consequently, more imperfect.

Besides the comet of 1759, of which there have been four authenticated returns, and which may be expected again about 1833, there are two others, of which something like a return has been traced at long intervals. One of these passed its perihelion at about eight on the morning of the 6th of July, 1264, reckoning mean time at Greenwich; and again, at a little past eight on the evening of the 21st of April, 1556. Thus its period is about 292 years, and it may be expected in 1848. The perihelion distance, however, of this comet, which was more than half that of the earth, in 1264, had diminished an eighth part by 1556; and, as this must have caused a great elongation of its orbit, and as, from the length of its period, it must go far into the regions of space, there is no knowing how both the time of its revolution, and the form and position of its orbit, may have been altered.

The other comet, in the elements of whose orbit there is a similarity, from which its identity might be with probability inferred, appeared in 1532, and again in 1661, having thus a period of about 129 years. The return of that comet should, therefore, have been about 1790. In that year, three comets made their appearance; but neither of them resembled the one of 1661. Two of them moved in the opposite direction; and the remaining one was more than twice the distance from the sun in its perihelion, and its orbit at nearly double the angle with that of the earth.

The comet, denominated Encke's comet, which has engrossed the public mind generally, and the scientific world in particular, has justly claimed and received the careful attention of astronomers, since its appearance in 1818 engaged Professor Encke to consider the elements of its orbit. He was enabled to identify it with a comet decribed by Messrs. Mechain and Messier in 1786, in the constellation Aquarius; also with a comet discovered in 1795 by Miss Herschel in the constellation Cygnus; and with the comet in 1805. The investigation of the diligent professor enabled him to foretell its re-appearance in 1822, and to state the probability of its not being observable in our climate. This anticipation was realized by the fortunate circumstance of the attachment to astronomical pursuits of Sir

Thomas Brisbane, who was then governor of New South Wales, and had fitted up an observatory there, and provided himself with the able assistance of Mr. Rumker. The latter gentleman appears to have discovered the comet on June 2, 1822; and his accurate observations afforded Encke the means of reconsidering the true elements of its orbit, and with additional confidence to compute its return for 1825. This occurred as was expected; the fresh data afforded by that return were carefully collated by the professor, to enable him still more satisfactorily to define the orbit, and with increased confidence to predict its return this year. It was observed by Mr. South first on October 30, 1828. This comet affords particular interest to the mind of the astronomer, though it does not offer a splendid object to his eye. Its orbit is an ellipse of comparatively small dimensions, wholly within the orbit of Jupiter; its period is about three years and three-tenths, —a much shorter period than has hitherto appeared to comprise the revolution of any other comet, with the exception of one seen in 1770, which did not satisfy, as far as observation has been able to show, the prediction of the period of five years and a half which was attributed to it. In opinion of Encke and other astronomers, this comet may afford an opportunity of proving that the heavens oppose a resisting medium to the motion of bodies. The subject has been discussed in the Transactions of the Astronomical Society of London, by the able mathematician, Massotti; and that gentleman offers reasons for considering comets capable of affording a demonstration of a resisting medium in the heavens, though planets may give no indication of it. Another comet which encourages the anticipation of much astronomical gratification, is one which Biela discovered, February 27, 1826, and which was afterwards seen by Gambart and others. It seems to possess similar claims to the attention of astronomers as that of Encke, it being conceived to revolve about the sun in about six years seven-tenths, and to be the same as the comet which appeared in 1772, and that which appeared in 1806. Encke's comet was in its perihelion, by computation, on 10th January, 1829.

The comet of 1770, to which allusion has been made, would lead us to conclude that we are still ignorant of many of the causes by which the form of the orbits of comets, and the times of their revolution and return, may be disturbed. That comet moved almost in the plane of the earth's orbit, having an inclination of only about a degree and a half; it had been observed with great care; and the result of the observations was, that it should return about every five years and a half. Instead of going out of the system, as may be presumed to be the case with those comets that have long periods and eccentric orbits, its greatest distance could not be much greater than that of Jupiter, while its mean distance from the sun was not much more than three times the perihelion distance of the earth. No comet, at all answering to that one, has, however, been again discovered; and therefore the conclusion is, that there are, within the system itself,

causes which can completely alter the motions of these bodies; but what those causes are, other than the attraction of the planets, has not yet been ascertained.

One remarkable difference between the comets and the planets, is in the angles which their orbits make with that of the earth. Leaving out the small planets that have recently been discovered, all the others are contained within a zone extending only 7° on each side of the earth's orbit; and, with the exception of Mercury (by far the smallest of the *old* planets), they are within half that space. But the orbits of the comets are at all possible angles; and the number increases with the angle, so that they approximate to an equal distribution, in all directions, round the sun as a centre. The numbers that have been observed are as follows:—Under 10° of inclination, 8; under 20°, 19; under 30°, 26; under 40°, 37; under 50°, 47; under 60°, 63; under 70°, 79; under 80°, 88; and under 90°, about 100. Thus, by far the greater number of the comets have their paths out of the direction of those of the planets; and hence, though they be bodies of such consistency as that their collision with the planets would produce serious consequences, there is but little chance that such collision can take place. The comets that have been observed have made their passages through very different parts of the solar system;—24 have passed within the orbit of Mercury; 47 within that of Venus; 58 within that of the Earth; 73 within that of Mars; and the whole within that of Jupiter. Of the hundred, or thereabouts, that have appeared, about one half have moved from west to east, in the same direction as the planets, and the other half in the opposite direction. The direct and retrograde ones do not appear to follow each other acording to any law that has been discovered. From 1299 to 1532, all that are mentioned were retrograde; and five that were observed from 1771 to 1780 were all direct.

Being quite ignorant both of the size of the comets, and their quantities of matter, we can form no conclusion as to their effects, even upon the positions of the planets. Hitherto, their influence, if anything, has been very small; for, within the limits that must be allowed for error, even in the best tables that are calculated upon an approximation, the whole of the irregularities are explainable upon the hypothesis of planetary disturbance alone; and the system appears to have gone on just as if there had been no comets in it. That the comets are formed of matter of some sort or other we know, from the dense and opaque appearance of their nucleus, as well as from the action of the planets upon them; but, as their action upon the planets has not been great, or even almost perceptible, we are led to the conclusion that they are not bodies of the same density or magnitude as even the smallest and rarest of the planets. When a comet is viewed through a telescope of considerable power, there appears a dense nucleus in the centre of the luminous and apparently vaporous matter, of which the external parts are composed; and the opacity of this nucleus varies in

different comets. On its first appearance, and again when it recedes, the luminous part of the comet is faint, and does not extend far from the nucleus; but, as it moves on towards the perihelion, the brightness increases, and the luminous matter lengthens into a train, which, in some cases, has extended across a fourth of the entire circumference of the heavens. But, though the general fact of the increased brightness of comets, and length of their tails, with their approach to the sun, and the consequent inclination of their motion, has been established, the observations have not been uniform or minute enough for proving what proportion the increase of brightness bears to the increase of the velocity, and the diminution of the distance from the sun. No doubt all the comets of which there are well-authenticated accounts, of great brightness and length of tail, have passed near the sun in their perihelion. Thus the comet of 1769, which was not a fifth of the earth's perihelion distance from the sun, had a tail of 60° in length, as seen at Paris; while that of 1759, which was more than half the earth's perihelion distance distant, had a train of only 2° or 3°. The length of the tail varies, however, not only with the time at which it is observed, but with the place of observation;—a difference probably depending on the difference of clearness and purity in the air. The tail of the comet of 1759, was 25° long, as measured at Montpelier in the south of France, and considerably more than that, as measured at the Isle of Bourbon, in the Indian Ocean. That of 1769 was 60° at Paris, 70° at Boulogne, 90° between Teneriffe and Cadiz, and 97° at Bourbon. Generally speaking, they appear to be brighter and larger when seen at sea than on land, and in the warmer regions more than in those nearer the poles.

When the superstitious fear of comets, as portending harm to the inhabitants of the earth, had vanished before the light of philosophy, that light was in some danger of giving rise to fear of another sort,—fear of physical harm to the earth itself, by the collision of some comet that might cross its path. We have no evidence, however, that such a collision ever did happen, either with the earth or with any other planet; and we have not absolutely correct means of so calculating the place of a comet as to be able to say with certainty that, on a given day, during a given month, or even during a given year, it shall cross the orbit of a planet. The motion of the earth in its orbit is, in round numbers, more than a million and half of miles in a day; and as Clairault, with all his care, did not come nearer the truth than nineteen days, though the collision of a comet and the earth should be calculated from any known data, the earth might, in fact, be, at the time, far enough from the comet.

Indeed, though the fact of the return of two comets be established, namely, Halley's and Encke's, and the return of every one, if not affected by physical causes that lie beyond the limits of our present knowledge, has been rendered exceedingly probable; yet we can observe them for so short

a portion of their courses, and these seem so very apt to be altered, that we ought not to speak of them with anything like the certainty with which we speak of the planets. As far as we have been able to examine them, they appear to obey the same laws as the other distinct masses that make up the known part of the system of the universe. Beyond this we know nothing of their nature; and as for their effects, moral or physical, we need give ourselves no trouble about them, for there is not a trace of the existence of such effects, upon any authentic record.

PART III.

MISCELLANEOUS DIRECTIONS, HINTS, AND REMARKS.

XIV. WASHINGTON'S AGRICULTURAL NOTES.

NOTWITHSTANDING the numerous public avocations and duties, in which Washington was engaged for a large portion of his life, it is known, that to no one object did he give so much of his time and attention as to Agriculture. The frequency and minuteness of his directions to his managers on this head, and the unceasing correspondence, which he kept up during his absence from Mount Vernon, are truly astonishing, when it is considered in what important and absorbing interests his mind was perpetually occupied. We have selected a few particulars from his manuscript papers, which, at the same time they illustrate his agricultural habits, may in part serve as practical hints, or salutary maxims, to farmers in general.

1. DIRECTIONS TO THE MANAGER OF HIS FARMS.

A *system* closely pursued, although it may not in all its parts be the best that could be devised, is attended with innumerable advantages. The conductor of the business, in this case, can never be under any dilemma in his proceedings. The overseers, and even the laborers, know what is to be done, and what they are capable of doing, in ordinary seasons. The force to be employed may be in due proportion to the work which is to be performed, and a reasonable and tolerably accurate estimate may be made of the product. But when no plan is fixed, when directions flow from day to day, the business becomes a mere chaos, frequently shifting, and sometimes at a stand, for want of knowing what to do, or the manner of doing it. Thus is occasioned a waste of time, which is of more importance, than is generally imagined.

Nothing can so effectually obviate the evil, as an established *system*, made known to all who are actors in it, that all may be enabled thereby to do their parts to advantage. This gives ease to the principal conductor of the business, and is more satisfactory to the persons who immediately overlook it, less harassing to the laborers, as well as more beneficial to the employer.

Under this view of the subject, the principal service, which you can render me, is to explain to the overseers (who will be furnished with duplicates) the plan, in all its parts, which is hereafter detailed; to hear their ideas with respect to the order in which the different sorts of work therein pointed out shall succeed each other, for the purpose of carrying it on to the best advantage; to correct any erroneous projects they may be disposed to adopt; and then to see that they adhere strictly to whatever may be resolved on, and that they are always (except when otherwise permitted) on their farms, and with their people. The work, under such circumstances, will go on smoothly; and, that the stock may be well fed, littered, and taken care of according to the directions, it will be necessary to inspect the conduct of the overseers in this particular, and those also whose immediate business it is to attend upon them, with a watchful eye; otherwise, and generally in severe weather, when attention and care are most needed, they will be most neglected.

Economy in all things is as commendable in the manager, as it is beneficial and desirable to the employer; and, on a farm, it shows itself in nothing more evidently, or more essentially, than in not suffering the provender to be wasted, but, on the contrary, in taking care, that every atom of it be used to the best advantage; and, likewise, in not permitting the ploughs, harness, and other implements of husbandry, and the gears belonging to them, to be unnecessarily exposed, trodden under foot, run over by carts, and abused in other respects. More good is derived from attending to the minutiæ of a farm, than strikes people at first view; and examining the farm-yards, fences, and looking into the fields to see that nothing is there but what is allowed to be there, is oftentimes the means of producing more good, or at least of avoiding more evil, than can be accomplished by riding from one working party, or one overseer, to another. I have mentioned these things not only because they have occurred to me, but because, although apparently trifles, they prove far otherwise in the result.

To request that my people may be at their work as soon as it is light, work till it is dark, and be diligent while they are at it, can hardly be necessary, because the propriety of it must strike every manager, who attends to my interest, or regards his own character, and who, on reflecting, must be convinced that lost labor is never to be regained. The presumption is, that every laborer does as much in twenty-four hours, as his strength, without endangering his health or constitution, will allow. But there is much more in what is called head work, that is, in the manner of conducting business, than is generally imagined. For take two managers, and give to each the same number of laborers, and let the laborers be equal in all respects. Let both these managers rise equally early, go equally late to rest, be equally active, sober, and industrious, and yet, in the course of the year, one of them, without pushing the hands under him more than the other, shall have performed infinitely more work. To what is this owing? Why, simply to contrivance, resulting from that forethought and arrangement, which will guard against the misapplication of labor, and doing it unseasonably. In ploughing, for instance, though the field first intended for it, or in which the ploughs may actually have been at work, should, from its situation, be rendered unfit (by rain or other cause) to be worked, and other spots, even though the call for them may not be so urgent, can be ploughed, this business ought to go on, because the general operation is promoted by it. So with respect to other things, and particularly carting, where nothing is more common, than, when loads are to go to a place, and others to be brought from it, though not equally necessary at the same moment, to make two trips, when one would serve. These things are only mentioned to show, that the manager, who takes a comprehensive view of his business, will throw no labor away.

For these reasons it is, that I have endeavoured to give a general view of my plans, as to the business of the year, that the concerns of the several plantations may go on without application daily for orders, unless it be in particular cases, or where these directions are not clearly understood.

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2. PARTICULAR DIRECTIONS FOR CULTIVATING A FARM NEAR MOUNT VERNON.

The directions alluded to in the preceding article, for the management of the farms in the neighbourhood of Mount Vernon, were given in December, 1799, a few days before Washington's death, and intended for the year 1800. We shall select here the part relating to one farm only (called the *River Farm*), which may serve as a sample of the whole.

Crops for the River Farm, and Operations thereon, for the Year 1800.

FIELD No. 1,—Is now partly in wheat; part is to be sown with oats; another part may be sown with pease, broad cast; part is in meadow, and will remain so; the most broken, washed, and indifferent part is to remain uncultivated, but to be harrowed and smoothed in the spring, and the worst portions (if practicable) to be covered with litter, straw, weeds, or any kind of vegetable rubbish, to prevent them from running into gullies.

No. 2.—One fourth is to be in corn, and to be sown with wheat; another fourth in buckwheat and pease, half of it in the one, and half in the other, sown in April, to be ploughed in as a green dressing, and by actual experiment to ascertain which is best. The whole of this fourth is to be sown with wheat also; another fourth part is to be naked fallow for wheat; and the other and last quarter to be appropriated for pumpkins, cymlins, turnips, Yateman pease, (in hills,) and such other things of this kind as may be required; and to be sown likewise with rye, after they are taken off, for seed.

No. 3,—Is now in wheat, to be harvested in the year 1800; the stubble of which, immediately after harvest, is to be ploughed in and sown thin with rye; and such parts thereof as are low, or produce a luxuriant growth of grain, are to have grass-seeds sprinkled over them. The whole for sheep to run on in the day (but housed at night) during the winter and spring months. If it should be found expedient, part thereof in the spring might be reserved for the purpose of seed.

No. 4,—Will be in corn, and is to be sown in the autumn of that year with wheat, to be harvested in 1801; and to be treated in all respects as has been directed for No. 3, the preceding year. It is to be manured as much as the means will permit, with such aids as can be procured during the present winter and ensuing spring.

Nos. 5, 6, 7, and 8,—Are to remain as they are, but nothing suffered to run upon them; as ground will be allotted for the sole purpose of pasturage, and invariably used as such.

Clover Lots.

No. 1,—Counting from the Spring Branch is to be planted in potatoes.

No. 2,—That part thereof which is now in turnips is to be sown with oats and clover; the other part, being now in clover, is to remain so until it comes into potatoes, by rotation.

No. 3,—Is also in clover at present, and is to remain so, as just mentioned, for No. 2.

No. 4,—Is partly in clover and partly in timothy, and so to be, until its turn for potatoes.

The rotation for these lots invariably is to be, 1. Potatoes, highly manured; 2. Oats, and clover sown therewith; 3. Clover; 4. Clover. Then to begin again with potatoes, and proceed as before. The present clover lots must be plastered.

All green sward, rough ground, or that which is heavily covered with weeds, bottle brush grass, and such things as being turned in will ferment, putrefy, and meliorate the soil, should in autumn be ploughed in, and at such times in winter as can be done while the ground is dry, and in condition for it.

Pasture Grounds.

The large lot adjoining the Negro houses and orchard, is to have oats sown on the potatoe and pumpkin ground; with which, and on the rye also in that lot, and on the melon part, orchard-grass seeds are to be sown; and thereafter to be kept as a standing calf pasture, and for ewes (which may require extra care) at yeaning, or after they have yeaned.

The other large lot, northeast of the Barn lane, is to be appropriated *always* as a pasture for the milch cows; and probably working oxen during the summer season.

The woodland, and the old field commonly called Johnston's, are designed for *common* pasture, and to be so applied always. To which, if it should be found inadequate to the stock of the farm, field No. 8, and the woodland therein, may be added.

Meadows.

Those already established and in train must continue, and the next to be added to them is the arms of the creek, which runs up to the spring-house, and forks, both prongs of which must be grubbed up, and wrought upon at every convenient moment when the weather will permit, down to the line of the ditch, which encloses the lots for clover, &c.

And as the fields come into cultivation, or as labor can be spared from other work, and circumstances will permit, the heads of all the inlets in them must be reclaimed, and laid to grass, whether they be large or small, forasmuch as nothing will run on, or can trespass upon, or injure the grass; no fencing being required.

Mud for Compost.

The season is now too far advanced, and too cold to be engaged in a work, that will expose the hands to wet; but it is of such essential importance, that it should be set about seriously and with spirit next year, for the summer's sun and the winter's frost to prepare it for the corn and other crops of 1801, that all the hands of the farm, not indispensably engaged in the crops, should, so soon as corn-planting is completed in the spring, be uninterruptedly employed in raising mud from the Pocosons, and from the bed of the creek, into the scow; and the carts, so soon as the manure for the corn and potatoes in 1800 is carried out, are to be incessantly drawing it to the compost heaps in the fields, which are to be manured by it. What number of hands can be set apart for this all-important work, remains to be considered and decided upon.

Penning Cattle and folding Sheep

On the fields intended for wheat, from the first of May, when the former should be turned out to pasture, until the first of November, when they ought to be housed, must be practised invariably; and to do it with regularity and propriety, the pen for the former, and the fold for the latter, should be proportioned to the number of each kind of stock; and both these to as much ground as they will manure sufficiently in the space of a week for wheat, beyond which they are not to remain in a place, except on the poorest spots; and even *these* had better be aided by litter or something else, than to depart from an established rule, of removing the pens on a certain day in every week. For in this, as in everything else, system is essential to carry on business well, and with ease.

Feeding.

The work-horses and mules are always to be in their stalls, and all littered and cleaned, when they are out of harness; and they are to be plenteously fed with cut straw, and as much chopped grain, meal, or bran, with a little salt mixed there-

with, as will keep them *always* in good condition for work; seeing also, that they are watered as regularly as they are fed; this is their winter feed. For spring, summer, and autumn, it is expected, that soiling them on green food, first with rye, then with lucern, and next with clover, with very little grain, will enable them to perform their work.

The oxen, and other horned cattle, are to be housed from the first of November until the first of May; and to be fed as well as the means on the farm will admit. The first (oxen) must always be kept in good condition; housed in the stalls designed for them; and the cows (so many of them as can find places) on the opposite side. The rest, with the other cattle, must be in the newly erected sheds; and the whole carefully watered every day; the ice, in frozen weather, being broken, so as to admit them to clean water.

With respect to the sheep, they must receive the best protection that can be given them *this* winter; against the next, I hope they will be better provided for.

And with regard to the hogs, the plan must be, to raise a given number of *good ones*, instead of an indiscriminate number of *indifferent ones*, half of which die or are stolen before the period arrives for putting them up as porkers. To accomplish this, a sufficient number of the best sows should be appropriated to the purpose; and so many pigs raised from them as will insure the quantity of pork, which the farm ought to furnish.

Whether it will be most advisable to restrain these hogs from running at large or not, can be decided with more precision after the result of those *now* in close pens is better known.

The exact quantity of corn used by those, which are now in pens, should be ascertained and regularly reported, in order to learn the result.

Stables and Farm Pens.

These ought to be kept well littered, and the stalls clean; as well for the comfort of the creatures that are contained in them, as for the purpose of manure; but as straw cannot be afforded for this purpose, *leaves* and such spoiled straw or weeds as will not do for food, must serve for the stables; and the first, that is, leaves and corn-stalks, is all that can be applied to the pens. To do this work effectually, let the corn-stalks be cut down by a few careful people with sharp hoes, so low as never to be in the way of scythes at harvest; and whenever the wheat will admit carts to run on it without injury, let them be bronght off and stacked near the farm pens. In like

manner let the people, with their blankets, go every evening, or as often as occasion may require, to the nearest wood, and fill them with leaves for the purposes above mentioned; bottoming the beds with corn-stalks, and covering them thick with leaves. A measure of this sort will be, if strictly attended to, and punctually performed, of great utility in every point of view. It will save food, make the cattle lie warm and comfortable, and produce much manure. The hogs also in pens must be well bedded in leaves.

Fencing.

As stock of no kind, according to this plan, will be suffered to run on the arable fields or clover lots, (except sheep in the day on the rye fields, as has been mentioned before,) partition fences between the fields, until they can be raised of quicks, may be dispensed with. But it is of great importance, that all the exterior or outer fences should be substantially good; and those also which divide the common, or woodland pasture, from the fields and clover lots, are to be very respectable.

To accomplish this desirable object in as short a time as possible, and with the smallest expense of timber, the post and rail fence which runs from the Negro quarters, or rather from the corner of the lot enclosing them, up to the division between fields Nos. 7 and 8, may be placed on the bank (which must be raised higher) running to the creek. In like manner, the fence from the gate, which opens into No. 2, quite down to the river, along the Cedar Hedge Row, as also those rails which are between Nos. 1 and 2, and between Nos. 2 and 3, may all be taken away, and applied to the outer fences, and the fences of the lanes from the barn into the woodland pasture, and from the former (the barn) into No. 5; for the fences of all these lanes must be *good*, as the stock must have a free and uninterrupted passage along them, at all times, from the barnyard to the woodland pasture.

All the fencing from the last mentioned place, (between me and Mr Mason,) until it joins Mr Lear's farm, and thence with the line between him and me, until it comes to the river, will require to be substantially good; at its termination on the river, dependence must placed in a water fence; for if made of common rails, they would be carried off by boatmen for firewood. The fences separating fields Nos. 1 and 8 from the woodland pasture must also be made good, to prevent depredations on the fields by my own stock.

Crops &c. for 1801.

No. 5, is to be in corn, and to be invariably in that article. It is to be planted (if drills are thought to be ineligible until the ground is much improved) in rows, 6 feet by 4, or 7 feet by $3\frac{1}{2}$, the wide part open to the south. These hills are to be manured as highly as the means will admit; and the corn planted every year in the middle of the rows of the preceding year; by doing which, and mixing the manure and earth by the plough and other workings, the whole in time will be enriched.

The washed and gullied parts of this field should be levelled, and as much improved as possible, or left uncultivated. Although it is more broken than some of the other fields, it has its advantages. 1st, It has several inlets extending into it, with easy ascents therefrom; 2dly, It is convenient to the mud in the bed of the creek, whensoever (by means of the scow) resort is had thereto, and good landing places; and, 3dly, It is as near to the barn as any other, when a bridge and causeway shall be made over the Spring Branch. To these may be added, that it is more remote from squirrels than any other.

Nos. 6 and 7, or such part thereof as is not so much washed or gullied, as to render ploughing ineligible, are to be fallowed for wheat. One of which, if both cannot, is to have the stubble ploughed in and sown with rye, and the low and strong parts to have timothy or orchard-grass seeds, perhaps both, in different places, sprinkled over them, for the purpose of raising seed. On the rye pasture the sheep are to be fed in winter and spring, and treated in all respects as No. 3 in 1800.

In the Years 1802, 1803, *and so on.*

The corn ground remaining the same, two fields, in the following numbers, will be fallowed for wheat, and treated in all respects as mentioned above; and if pumpkins, cymlins, turnips, pease, and such like growth, are found beneficial to the land, or useful and profitable for stock, ground may readily be found for them.

These are the great outlines of a plan, and the operations of it, for the next year, and for years to come, for the *River Farm.* The necessary arrangements, and all the preparatory measures for carrying it into effect, ought to be adopted without delay, and invariably pursued. Smaller matters may, and undoubtedly will, occur occasionally, but none, it is presumed, that can militate against it materially.

To carry it into effect advantageously, it becomes the indispensable duty of him, who is employed to overlook and conduct the operations, to take a prospective and comprehensive view of the whole business, which is laid before him, that the several parts thereof may be so ordered and arranged, as that one sort of work may follow another sort in proper succession, and without loss of labor or of time; for nothing is a greater waste of the latter, and consequently of the former, (time producing labor, and labor money,) than shifting from one thing to another before it is finished, as if chance or the impulse of the moment, not judgment and foresight, directed the measure. It will be acknowledged, that weather and other circumstances may at times interrupt a regular course of proceedings, but if a plan is well digested beforehand, they cannot interfere long, with a man who is acquainted with the nature of the business, and the crops he is to attend to.

Every attentive and discerning person, who has the whole business of the year laid before him, and is acquainted with the nature of the work, can be at no loss to lay it out to advantage. He will know, that there are many things which can be accomplished in winter as well as in summer; others, that spring, summer, and autumn only are fit for; in a word, to use the wise man's saying, that "there is a time and a season for all things," and that unless they are embraced, nothing will thrive or go on smoothly. There are many sorts of *in-doors* work, which can be executed in hail, rain, or snow, as well as in sunshine; and if they are set about in fair weather, (unless there be a necessity for it,) there will be nothing to do in foul weather; the people therefore must be idle. The man of prudence and foresight will always keep these things in view, and order his work accordingly, so as to suffer no waste of time, or idleness. These same observations apply with equal force to frozen ground, and to ground too wet to work in, or which if worked will be injured thereby.

These observations might be spun to a greater length, but they are sufficient to produce reflection,—and reflection, with industry and proper attention, will produce the end that is to be wished.

There is one thing, however, I cannot forbear to add, and in strong terms; it is, that whenever I order a thing to be done, it must be done; or a reason given at the time, or as soon as the impracticability is discovered, why it cannot be done, which will produce a countermand or change. But it is not for the person receiving the order to suspend, or dispense with its

execution; and after it has been supposed to have gone into effect, to be told, that nothing has been done in it, that it *will* be done, or that it could not be done,—either of these is unpleasant and disagreeable to me, having been all my life accustomed to more regularity and punctuality. Nothing but system and method are required to accomplish any reasonable requests.

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3. ROTATION OF CROPS.

Washington studied and practised for several years a system of *rotation of crops*, on some of his farms. The four following tables, printed from a copy in his own handwriting, will give some idea of his method in this respect. They apply to one farm only, which contained 525 acres, and was divided into seven fields. The rotation in this instance is extended to seven years. The first part of each table indicates the kind of products destined for each field, under the respective years. Then follow the times for ploughing the different fields, and the number of days it will take. Next, an estimate of the probable quantity and value of the products. Lastly, remarks on the plan of the table, and the results of the rotation.

In a note attached to these tables Washington says, "The ploughing is calculated at three fourths of an acre per day. If, then, one plough will go over a seventy-five acre field in one hundred days, five ploughs will do it in twenty days. In some ground, according to the state of it, and to the seasons, an acre at least ought to be ploughed per day by each team; but the estimate is made at three fourths of an acre in order to reduce it to more certainty.

"The fields are all estimated at seventy-five acres each (although they run a little more or less) for the sake of more easy calculation of the crops, and to show their comparative yield."

The following tables are a selection from a great many, in which the same general system is pursued.

Rotation No. 1.

No. of the Fields.	1793.	1794.	1795.	1796.	1797.	1798.	1799.
3	Corn and Potatoes.	Wheat.	Buck-wheat for Manure.	Wheat.	Clover or Grass.	Clover or Grass.	Clover or Grass.
4	Clover or Grass.	Corn and Potatoes.	Wheat.	Buck-wheat for Manure.	Wheat.	Clover or Grass.	Clover or Grass.
5	Clover or Grass.	Clover or Grass.	Corn and Potatoes.	Wheat.	Buck-wheat for Manure.	Wheat.	Clover or Grass.
6	Clover or Grass.	Clover or Grass.	Clover or Grass.	Corn and Potatoes.	Wheat.	Buck-wheat for Manure.	Wheat.
7	Wheat.	Clover or Grass.	Clover or Grass.	Clover or Grass.	Corn and Potatoes.	Wheat.	Buck-wheat for Manure
1	Buck-wheat for Manure.	Wheat.	Clover or Grass.	Clover or Grass.	Clover or Grass.	Corn and Potatoes.	Wheat.
2	Wheat.	Buck-wheat for Manure.	Wheat.	Clover or Grass.	Clover or Grass.	Clover or Grass.	Corn and Potatoes.

Number of Ploughings, Times at which they must be given, and number of Days it will take.

	Acres.		Fall.	Wint.	March	April.	May.	June.	July.	Aug.	Sept.	Total.
No. 3.	75	Corn and Potatoes.										
		Breaking up . .	100	..	..	..	..	..	..	..	..	100
		Laying off, & listing	..	..	60	..	..	..	..	..	..	60
		Crossing for planting	..	..	..	10	..	..	..	..	..	10
		Ploughing balks .	..	..	..	..	70	..	..	..	..	70
		Crossing them .	..	..	..	..	..	70	..	..	..	70
		Re-crossing . .	..	..	..	..	..	..	70	..	..	70
		Sowing wheat .	..	..	..	..	..	..	..	75	..	75
4 5 6	225	Clover or Grass . .	..	..	..	..	..	..	..	..	..	
1.	75	Buckwheat for manure.										
		Breaking up .	100	..	..	..	..	..	..	..	..	100
		Crossing for sowing	..	..	..	100	..	..	..	..	..	100
		Ploughing in . .	..	..	..	..	..	100	..	..	..	100
2.	75	Wheat . Corn ground	..	..	..	..	..	..	..	..	..	
7.	75	Ditto or Buckwheat	..	..	..	..	..	..	..	100	..	100
	525		200	..	60	110	70	170	70	175	..	855

Probable Yield.

No. 3.	75	acres in Corn & Potatoes	a.	12 1-2 bushels 12 1-2			937 1-2 bushels 937 1-2		a.	2*s.* 6*d.* 1		£117. 46	3*s.* 9*d.* 17 6
2. 7.	150	- Wheat	-	10	-	-	1500	-	-	5	-	375	0 0
1.	75	- Buckwheat for manure.											
4. 5. 6.	225	- Clover or Grass.											
	525						3375					£539.	1*s.* 3*d.*

REMARKS.

The above rotation favors the land very much; inasmuch as there are but three corn crops taken in seven years from any field, and the first wheat crop is followed by a buck-wheat manure for the second wheat crop, which is to succeed it, and which, by being laid to clover or grass, and continued therein three years, will afford much mowing or graz-ing, according as the seasons happen to be, besides being a restorative to the soil. But then, the produce of the saleable crops is small, unless increased by the improving state of the fields. Nor will the grain for the use of the farm be adequate to the consumption of it in this course, and this is an essential object to attend to. And *quære* whether the clover does not remain too long.

Rotation No. 2.

No. of the Fields.	1793.	1794.	1795.	1796.	1797.	1798.	1799.
3	Corn and Potatoes.	Buck-wheat.	Buck-wheat for Manure.	Wheat.	Clover.	Wheat.	Clover.
4	Clover.	Corn and Potatoes.	Buck-wheat.	Buck-wheat for Manure.	Wheat.	Clover.	Wheat.
5	Pasture.	Pasture.	Corn and Potatoes.	Buck-wheat.	Buck-wheat for Manure.	Wheat.	Clover.
6	Pasture.	Wheat.	Clover.	Corn and Potatoes.	Buck-wheat.	Buck-wheat for Manure.	Wheat.
7	Wheat.	Clover.	Wheat.	Clover.	Corn and Potatoes.	Buck-wheat.	Buck-wheat for Manure.
1	Buck-wheat for Manure.	Wheat.	Clover.	Wheat.	Clover.	Corn and Potatoes.	Buck-wheat.
2	Wheat.	Buck-wheat for Manure.	Wheat.	Clover.	Wheat.	Clover.	Corn and Potatoes.

Ploughings &c. &c. for the above Crops.

	Acres.		Fall.	Wint.	March.	April.	May.	June.	July.	Aug.	Sept.	Total.
No. 3.	75	Corn and Potatoes, same as No. 1.	100	..	60	10	70	70	70	75	..	455
4. 6.	150	Clover	..	..	..	..	..	..	..	..	..	
1.	75	Buckwheat crop.										
		Breaking up	..	..	100	..	..	..	..	..	..	100
		Second ploughing	..	..	..	..	..	100	..	..	..	100
2.	75	Wheat. Corn ground	..	..	..	..	..	..	..	..	..	
7.	75	Ditto or Buckwheat.										
		Breaking up	100	..	..	..	..	..	..	..	..	100
		Crossing and sowing	..	..	..	100	..	..	..	..	..	100
		Ploughing in Buckw.	..	..	..	..	..	100	..	..	..	100
		Sowing Wheat	..	..	..	..	..	..	..	10	..	100
5.	75	Buckwheat for manure, as above.	..	..	..	..	..	..	..	..	..	
	525		200	..	160	110	70	270	70	175	..	1055

Probable Yield.

	Acres.		Bushels.		Bushels.				
No. 3.	75	in Corn - a.	12 1-2	-	937 1-2	- a.	2*s.* 6*d.*	£117.	3*s.* 9*d.*
		and Potatoes -	12 1-2	-	937 1-2	-	1 -	46	17 6
4. 5. 6.	225	Clover and Grass.							
2. 7.	150	Wheat - - -	10	-	1500	-	5 -	375	0 0
1.	75	Supposed in Buckwheat	12	-	900	-	1 8	75	0 0
	525				4275			£614.	1*s.* 3*d.*

REMARKS.

By the above rotation, 900 bushels of buckwheat, amounting to £75, is added to the proceeds of No. 1, at the expense of 200 days' more ploughing; and no two corn crops follow in immediate succession. Wheat, in one instance, follows a clover lay on a single ploughing; the success of this, though well ascertained in England, may not answer so well in this country, where our lands, from the exhausted state of them, require more manure than the farm can afford, and our seasons are very precarious.

Rotation No. 3.

No. of the Fields.	1793.	1794.	1795.	1796.	1797.	1798.	1799.
3	Corn and Potatoes.	Wheat.	Buck-wheat.	Clover.	Wheat.	Buck-wheat.	Clover.
4	Clover.	Corn and Potatoes.	Wheat.	Buck-wheat.	Clover.	Wheat.	Buck-wheat.
5	Buck-wheat.	Clover.	Corn and Potatoes.	Wheat.	Buck-wheat.	Clover.	Wheat.
6	Clover.	Buck-wheat.	Clover.	Corn and Potatoes.	Wheat.	Buck-wheat.	Clover.
7	Wheat.	Clover.	Buck-wheat.	Clover.	Corn and Potatoes.	Wheat.	Buck-wheat.
1	Buck-wheat.	Wheat.	Clover.	Buck-wheat.	Clover.	Corn and Potatoes.	Wheat.
2	Wheat.	Buck-wheat.	Wheat.	Clover.	Buck-wheat.	Clover.	Corn and Potatoes.

Ploughings &c. &c. for the above Crops.

	Acres.		Fall.	Wint.	March.	April.	May.	June.	July.	Aug.	Sept.	Total.
No. 3.	75	Corn and Potatoes . .	100	..	60	10	70	70	70	75	..	455
4. 6.	150	Clover	..	..	..	..	..	..	..	..	..	
5. 1.	150	Buckwheat.										
		Breaking up	..	..	..	100	100	..	..	..	..	200
		Sowing	..	..	..	..	..	100	100	..	..	200
7. 2.	150	Wheat.										
		1 field follows Corn	..	..	..	..	..	..	..	..	..	
		The other Clover, one ploughing	..	..	..	..	..	..	..	100	..	100
	525		100	..	60	110	170	170	170	175	..	955

Probable Yield.

	Acres.		Bushels.	Bushels.			
No. 3.	75	in Corn - a.	12 1-2 - -	937 1-2 - -	a. 2*s.* 6*d.* -	£117.	3*s.* 9*d.*
		Same in Potatoes	12 1-2 - -	937 1-2 - -	1 -	46	17 6
4. 6.	150	Clover.					
5. 1.	150	Buckwheat - -	12 - -	1800 - -	1 8 -	150	0 0
7. 2.	150	Wheat - - -	10 - -	1500 - -	5 -	375	0 0
	525			5175		£689.	1*s.* 3*d.*

REMARKS.

This rotation, for quantity of grain and the profit arising from it, is more productive than either of the preceding; and with no more ploughing, excepting No. 1. No field gives more than three corn crops in seven years, except the crop of buckwheat; the last of which, with the Indian corn, will be more than adequate for all the demands of the farm. The clover is to be sown with the buckwheat in July; and by being only one year in the ground, may be too expensive on account of the seed. Nor will the fields in this course receive much manure; and the advantages of sowing wheat on a clover lay, in this country, are not well ascertained. Again, preparing two fields for buckwheat may, in practice, be found difficult. Wheat stubble might be ploughed in here for spring food.

Rotation No. 4.

No. of the Fields.	1793.	1794.	1795.	1796.	1797.	1798.	1799.
3	Corn and Potatoes.	Wheat.	Clover.	Wheat.	Clover.	Wheat.	Buck-wheat.
4	Buck-wheat.	Corn and Potatoes.	Wheat.	Clover.	Wheat.	Clover.	Wheat.
5	Wheat.	Buck-wheat.	Corn and Potatoes.	Wheat.	Clover.	Wheat.	Clover.
6	Clover.	Wheat.	Buck-wheat.	Corn and Potatoes.	Wheat.	Clover.	Wheat.
7	Wheat.	Clover.	Wheat.	Buck-wheat.	Corn and Potatoes.	Wheat.	Clover.
1	Clover.	Wheat.	Clover.	Wheat.	Buck-wheat.	Corn and Potatoes.	Wheat.
2	Wheat.	Clover.	Wheat.	Clover.	Wheat.	Buck-wheat.	Corn and Potatoes.

Ploughings &c. &c. for the above Crops.

	Acres.		Fall.	Wint.	March.	April.	May.	June.	July.	Aug.	Sept.	Total.
No. 3.	75	Corn and Potatoes .	100	..	60	10	70	70	70	75	..	455
4.	75	Buckwheat.										
		Breaking up . .	..	100	..	..	..	..	..	..	..	100
		Second ploughing .	..	..	..	..	..	100	..	..	..	100
6. 1.	150	Clover	..	..	..	..	..	..	..	..	..	
2.	75	Wheat. Corn ground .	..	..	..	..	..	..	..	..	..	
5. 7.	150	Ditto or Clover, one ploughing	..	..	..	..	..	..	..	105	105	210
	525		100	100	60	10	70	170	70	180	105	865

Probable Yield.

	Acres.		Bushels.		Bushels.		
No. 3.	75	in Corn - a.	12 1-2 - -	937 1-2 - -	a. 2*s.* 6*d.* -	£117.	3*s.* 9*d.*
		Same in Potatoes	12 1-2 - -	937 1-2 - -	1 -	46	17 3
4.	75	Buckwheat - -	12 - -	900 - -	1 8 -	75	0 0
6. 1.	150	Clover.					
2. 5. 7.	225	Wheat - - -	10 -	2250 - -	5 -	562	10 0
	525			5025		£801.	11*s.* 0*d.*

REMARKS.

By the above rotations, the quantity of grain is *nearly* equal to that of No. 3, and the value of it greater; occasioned by the increase of wheat. This rotation is effected with as little ploughing as No. 1, and with less than in either of the other two numbers, 2 and 3. But in this course no green manure is introduced, except ploughing in clover is so considered; and the quality of the clover on much reduced land is to be questioned, and the practice of sowing on it, as has been observed in some of the other numbers, not much used, nor the advantages of it well ascertained. Besides, there is the expense of clover-seed for 150 acres every year to be encountered.

4. EXTRACT FROM AN AGRICULTURAL JOURNAL.

For many years Washington kept an Agricultural Journal, in which he recorded from day to day the principal operations on his farms, the state of vegetation, and other particulars. The following short extract is from the journal for April, 1786.

April 18th. Began to plant Irish potatoes in drills between the corn (ten feet apart), four rows allotted therefor, two of which had manure put upon each set, which were at the distance of one foot asunder; the other two rows were planted in all respect like these, but without manure.

Began to sow barley in drills near the Siberian wheat.

20th. Finished sowing fifty rows of barley at Dogue Run, with thirty-five quarts of seed. The ground was prepared in the following manner. 1. Thrice ploughed (or listed as it is called) into five feet ridges. 2. Rolled with the spiked roller. 3. Harrowed. 4. Sowed with the barrel plough, and harrowed with the small harrow following the plough.

21st. Sowed a bushel of orchard-grass seed in the turnip patch, at the Home house. The ground in which these seeds were sown had been twice ploughed, chopped over, and the clods broken with hoes, and twice harrowed. The seeds were scratched in with a light bush.

22d. The heavy rain last night washed, and laid above ground almost all the Albany pease, which had been sown broad-cast. Those which were sown in drills two or three days before were coming up.

Finished sowing barley in the Neck between the corn rows; seventy-six rows, alternately.

Prevented from planting corn and pease with the barrel plough by the wetness of the ground.

25th. Planted Irish potatoes, in ground prepared as above, and in the manner described—ground wet.

Timothy seed sown on the oats, and the ground being too wet to roll, it was scratched in with a bush harrow, which was wrong, as the blades and roots were injured thereby.

26th. The drilled wheat from the Cape propped to prevent its lodging.

27th. Irish Potatoes planted in the Neck, ten rows (between the corn rows) as at the other places; the alternations being manured.

28th. Three acres of flax sown in the Neck, and harrowed in.

Pease, consisting of two kinds, sown with the same plough at the same place; the ground in all these operations being wet.

XV. POOR RICHARD REVIVED,

OR

REMARKS ON INDUSTRY, ATTENTION TO BUSINESS, AND FRUGALITY.

[Dr Franklin published for many years in Philadelphia an Almanac, which he called Poor Richard's Almanac, and in which he inserted various maxims and proverbs. Although these were much quoted at the time, and have not since been forgotten, yet no apology need be given for reprinting them here, as they were drawn up by the author himself in the form of a preface to one of his Almanacs.]

I have heard, that nothing gives an author so great pleasure, as to find his works respectfully quoted by others. Judge, then, how much I must have been gratified by an incident I am going to relate to you. I stopped my horse lately, where a great number of people were collected, at an auction of merchants' goods. The hour of the sale not being come, they were conversing on the badness of the times; and one of the company called to a plain, clean old man, with white locks, Pray, Father Abraham, what think you of the times? Will not these heavy taxes quite ruin the country? How shall we ever be able to pay them? What would you advise us to?—Father Abraham stood up, and replied, If you would have my advice, I will give it to you in short, "for a word to the wise is enough," as Poor Richard says. They joined in desiring him to speak his mind, and gathering round him, he proceeded as follows.

Friends, says he, the taxes are indeed very heavy, and if those laid on by the government were the only ones we had to pay, we might more easily discharge them; but we have many others, and much more grievous to some of us. We are taxed twice as much by our idleness, three times as much by our pride, and four times as much by our folly; and from these taxes the commissioners cannot ease or deliver us, by allowing an abatement. However, let us hearken to good advice, and something may be done for us; "God helps them that help themselves," as poor Richard says.

I. It would be thought a hard government, that should tax its people one tenth part of their time, to be employed in its service; but idleness taxes many of us much more; sloth, by bringing on diseases, absolutely shortens life. "Sloth, like rust, consumes faster than labor wears, while the used key is always bright," as poor Richard says. "But dost thou love

life, then do not squander time, for that is the stuff life is made of," as poor Richard says. How much more than is necessary do we spend in sleep! forgetting, that "the sleeping fox catches no poultry, and that there will be sleeping enough in the grave," as poor Richard says.

"If time be of all things the most precious, wasting time must be," as poor Richard says, "the greatest prodigality;" since, as he elsewhere tells us, "lost time is never found again; and what we call time enough, always proves little enough;" let us then up and be doing, and doing to the purpose; so by diligence shall we do more, with less perplexity. "Sloth makes all things difficult, but industry all easy; and he that riseth late, must trot all day, and shall scarce overtake his business at night; while laziness travels so slowly, that poverty soon overtakes him. Drive thy business, let not that drive thee; and early to bed, and early to rise, makes a man healthy, wealthy, and wise," as poor Richard says.

So what signifies wishing and hoping for better times? We may make these times better, if we bestir ourselves. "Industry need not wish, and he that lives upon hope will die fasting. There are no gains without pains; then help hands, for I have no lands," or if I have, they are smartly taxed. "He that hath a trade, hath an estate; and he that hath a calling, hath an office of profit and honor," as poor Richard says; but then the trade must be worked at, and the calling well followed, or neither the estate nor the office will enable us to pay our taxes. If we are industrious, we shall never starve; for, "at the working man's house, hunger looks in, but dares not enter." Nor will the bailiff or the constable enter, for "industry pays debts, while despair increaseth them." What though you have found no treasure, nor has any rich relation left you a legacy, "diligence is the mother of good luck, and God gives all things to industry. Then plough deep, while sluggards sleep, and you shall have corn to sell and to keep." Work while it is called to-day, for you know not how much you may be hindered to-morrow. "One to-day is worth two to-morrows," as poor Richard says; and farther, "never leave that till to-morrow, which you can do to-day." If you were a servant, would you not be ashamed that a good master should catch you idle? Are you then your own master? Be ashamed to catch yourself idle, when there is so much to be done for yourself, your family, your country, and your king. Handle your tools without mittens; remember, that "the cat in gloves catches no mice," as poor Richard says. It is true, there is

much to be done, and perhaps you are weak-handed; but stick to it steadily, and you will see great effects, for "constant dropping wears away stones; and by diligence and patience the mouse ate in two the cable; and little strokes fell great oaks."

Methinks I hear some of you say, "must a man afford himself no leisure?" I will tell thee, my friend, what poor Richard says; "employ thy time well, if thou meanest to gain leisure; and since thou art not sure of a minute, throw not away an hour." Leisure is time for doing something useful; this leisure the diligent man will obtain, but the lazy man never; for "a life of leisure and a life of laziness are two things. Many, without labor, would live by their wits only, but they break for want of stock;" whereas industry gives comfort, and plenty, and respect.

II. But with our industry we must likewise be steady, settled, and careful, and oversee our own affairs with our own eyes, and not trust too much to others; for, as poor Richard says,

> "I never saw an oft-removed tree,
> Nor yet an oft-removed family,
> That throve so well as those that settled be."

And again, "three removes is as bad as a fire;" and again, "keep thy shop, and thy shop will keep thee;" and again, "if you would have your business done, go, if not, send." And again,

> "He that by the plough would thrive,
> Himself must either hold or drive."

And again, "the eye of a master will do more work than both his hands;" and again, "want of care does us more damage than want of knowledge;" and again, "not to oversee workmen, is to leave them your purse open." Trusting too much to others' care is the ruin of many; for, "in the affairs of this world, men are saved, not by faith, but by the want of it;" but a man's own care is profitable; for, "if you would have a faithful servant, and one that you like, serve yourself. A little neglect may breed great mischief; for want of a nail the shoe was lost, and for want of a shoe the horse was lost, and for want of a horse the rider was lost," being overtaken and slain by the enemy; all for want of a little care about a horse-shoe nail.

III. So much for industry, my friends, and attention to one's own business; but to these we must add frugality, if we would make our industry more certainly successful. A man

may, if he knows not how to save as he gets, "keep his nose all his life to the grindstone, and die not worth a groat at last. A fat kitchen makes a lean will;" and

> "Many estates are spent in the getting,
> Since women for tea forsook spinning and knitting,
> And men for punch forsook hewing and splitting."

"If you would be wealthy, think of saving, as well as of getting. The Indies have not made Spain rich, because her outgoes are greater than her incomes."

Away, then, with your expensive follies, and you will not then have so much cause to complain of hard times, heavy taxes, and chargeable families; for

> "Women and wine, game and deceit,
> Make the wealth small, and the want great."

And farther, "what maintains one vice, would bring up two children." You may think, perhaps, that a little tea, or a little punch now and then, diet a little more costly, clothes a little finer, and a little entertainment now and then, can be no great matter; but remember, "many a little makes a mickle." Beware of little expenses; "a small leak will sink a great ship," as poor Richard says; and again, "who dainties love, shall beggars prove;" and moreover, "fools make feasts, and wise men eat them."

Here you are all got together to this sale of fineries and nicknacks. You call them *goods*, but if you do not take care, they will prove *evils* to some of you. You expect they will be sold cheap, and perhaps they may, for less than they cost; but if you have no occasion for them, they must be dear to you. Remember what poor Richard says, "buy what thou hast no need of, and ere long thou shalt sell thy necessaries." And again, "at a great penny-worth pause a while." He means, that perhaps the cheapness is apparent only, and not real; or the bargain, by straitening thee in thy business, may do thee more harm than good. For in another place he says, "many have been ruined by buying good penny-worths." Again, "it is foolish to lay out money in a purchase of repentance;" and yet this folly is practised every day at auctions, for want of minding the almanac. Many a one for the sake of finery on the back, have gone with a hungry belly, and half starved their families; "silks and satins, scarlet and velvets, put out the kitchen fire," as poor Richard says. These are not the necessaries of life, they can scarcely be called the conveniencies; and yet, only because they look pretty, how many want to have them? By these and other extravagancies, the genteel are

reduced to poverty, and forced to borrow of those whom they formerly despised, but who, through industry and frugality, have maintained their standing; in which case it appears plainly, that "a ploughman on his legs is higher than a gentleman on his knees," as poor Richard says. Perhaps they have had a small estate left them, which they knew not the getting of; they think "it is day, and it will never be night;" that a little to be spent out of so much is not worth minding; but "always taking out of the meal-tub, and never putting in, soon comes to the bottom," as poor Richard says; and then, "when the well is dry, they know the worth of water." But this they might have known before, if they had taken his advice; "if you would know the value of money, go and try to borrow some; for he that goes a borrowing goes a sorrowing," as poor Richard says; and indeed so does he that lends to such people, when he goes to get it again. Poor Dick farther advises, and says,

> "Fond pride of dress is sure a curse;
> Ere fancy you consult, consult your purse."

And again, "pride is as loud a beggar as want, and a great deal more saucy." When you have bought one fine thing, you must buy ten more, that your appearance may be all of a piece; but poor Dick says, "it is easier to suppress the first desire than to satisfy all that follow it;" and it is as truly folly for the poor to ape the rich, as for the frog to swell in order to equal the ox.

> "Vessels large may venture more,
> But little boats should keep near shore."

It is, however, a folly soon punished; for, as poor Richard says, "pride that dines on vanity, sups on contempt; pride breakfasted with plenty, dined with poverty, and supped with infamy." And, after all, of what use is this pride of appearance, for which so much is risked, so much is suffered? It cannot promote health, nor ease pain; it makes no increase of merit in the person; it creates envy, it hastens misfortune.

But what madness must it be to *run in debt* for these superfluities! We are offered, by the terms of this sale, six months' credit; and that perhaps has induced some of us to attend it, because we cannot spare the ready money, and hope now to be fine without it. But ah! think what you do when you run in debt; you give to another power over your liberty. If you cannot pay at the time, you will be ashamed to see your creditor; you will be in fear when you speak to him, when you will make poor, pitiful, sneaking excuses, and by degrees come to

lose your veracity, and sink into base, downright lying; for, "the second vice is lying; the *first* is running in debt," as poor Richard says; and again to the same purpose, "lying rides upon debt's back;" whereas a free-born Englishman ought not to be ashamed nor afraid to see or speak to any man living. But poverty often deprives a man of all spirit and virtue. "It is hard for an empty bag to stand upright." What would you think of that prince, or of that government, who should issue an edict forbidding you to dress like a gentleman or gentlewoman, on pain of imprisonment or servitude? Would you not say, that you were free, have a right to dress as you please, and that such an edict would be a breach of your privileges, and such a government tyrannical? And yet you are about to put yourself under that tyranny, when you run in debt for such dress! your creditor has authority, at his pleasure, to deprive you of your liberty, by confining you in goal for life, or by selling you for a servant, if you should not be able to pay him. When you have got your bargain, you may, perhaps, think little of payment; but, as poor Richard says, "creditors have better memories than debtors; creditors are a superstitious sect, great observers of set days and times." The day comes round before you are aware, and the demand is made before you are prepared to satisfy it; or, if you bear your debt in mind, the term, which at first seemed so long will, as it lessens, appear extremely short; time will seem to have added wings to his heels as well as his shoulders. "Those have a short Lent, who owe money to be paid at Easter." At present, perhaps, you may think yourselves in thriving circumstances, and that you can bear a little extravagance without injury; but

> "For age and want save while you may,
> No morning sun lasts a whole day."

Gain may be temporary and uncertain, but ever, while you live, expense is constant and certain; and, "it is easier to build two chimneys than to keep one in fuel," as poor Richard says; so, "rather go to bed supperless than rise in debt."

> "Get what you can, and what you get hold;
> 'T is the stone that will turn all your lead into gold."

And when you have got the philosopher's stone, sure you will no longer complain of bad times, or the difficulty of paying taxes.

IV. This doctrine, my friends, is reason and wisdom; but, after all, do not depend too much upon your own industry, and frugality, and prudence, though excellent things; for they may

all be blasted, without the blessing of Heaven; and therefore ask that blessing humbly, and be not uncharitable to those that at present seem to want it, but comfort and help them. Remember Job suffered, and was afterwards prosperous.

And now, to conclude, "experience keeps a dear school, but fools will learn in no other," as poor Richard says, and scarce in that; for, it is true, "we may give advice, but we cannot give conduct;" however, remember this; "they that will not be counselled, cannot be helped;" and farther, that "if you will not hear reason, she will surely rap your knuckles," as poor Richard says.

Thus the old gentleman ended his harangue. The people heard it, and approved the doctrine; and immediately practised the contrary, just as if it had been a common sermon, for the auction opened, and they began to buy extravagantly.—I found the good man had thoroughly studied my almanacs, and digested all that I had dropt on those topics during the course of twenty-five years. The frequent mention he made of me must have tired any one else; but my vanity was wonderfully delighted with it, though I was conscious, that not a tenth part of the wisdom was my own, which he ascribed to me, but rather the gleanings that I had made of the sense of all ages and nations. However, I resolved to be the better for the echo of it; and, though, I had at first determined to buy stuff for a new coat, I went away, resolved to wear my old one a little longer. Reader, if thou wilt do the same, thy profit will be as great as mine.

XVI. ON THE USE OF FRUIT.

There are a great many opinions current with regard to the use of particular kinds of food, which are not founded in truth; and these opinions frequently contribute in no small degree to injure the health and diminish the comforts of mankind. We intend to refer at the present time to a prejudice generally entertained against the use of fruit as an article of diet. It is commonly believed that it contributes to the production of summer and autumnal diseases; especially in warm climates. That many diseases of the stomach and bowels in summer and autumn are produced by the *improper* use of fruit, that is, its use in improper quantity, in an unfit state, or at improper times, cannot be denied; but it is, on the other hand, undeniably true, that its *proper* use, is, with some exceptions, rather preventive of those same diseases.

The tendency of the warm weather of summer, particularly in southern climates, is to increase the discharge of fluid from the skin, and as a natural consequence to lessen the quantity which passes off by the internal parts of the body, namely, by the bowels, with their accompanying secreting organs, and by the kidneys. The first effect therefore of the heat of summer is to produce a degree of torpidity in the stomach, liver, and bowels. Hence arise the bilious complaints, as they are called, of the latter end of spring and the beginning of summer. It is not pretended that this is the only cause, and perhaps it is not in any considerable degree the cause; but the fact is certain, that there is apt to be, at this period of the year, a torpid and inactive state of the bilious and digestive systems, whether the cause assigned for it be the right one or not.

As the season advances, a reaction takes place, and instead of this torpidity, diseases of an increased activity manifest themselves in these same organs. Hence cholera, diarrhœa, and dysentery prevail towards the latter part of summer and the beginning of autumn, and are far more severe and intractable diseases than those which have preceded; indicating that their cause has been longer in operation in the system.

Now the use of fruit we believe to be the natural remedy, intended by that Providence, which always compensates the evils which arise in the course of events, by corresponding provisions of good, to counteract that state of the system, which, from some cause or other, arises during the warmer part of the year. Thus we observe, that in proportion as the climate is warmer, the heat more intense, and the tendency to these diseases more decided, fruit is produced with greater facility, and in greater abundance. Hence in tropical countries, it requires but little cultivation; it is in fact almost the spontaneous growth of the soil; it is produced during almost the whole year; and exists in more numerous and more delicious varieties. This may be taken as an indication, that Nature, who provides nothing in vain, intended that it should constitute in these climates a large proportion of the food of man. Another circumstance which indicates the intention of Nature in the same respect, is the common preference which exists for a fruit and vegetable, over an animal diet, during the hotter months. The taste of fruit is then always grateful to the palate; and its effects upon the health of those who indulge with moderation, are generally salutary. It obviates the tendency to disease which has been before spoken of, from its supplying by its juicy texture, its slightly acescent and laxative qualities, that want of secretion and of action in the digestive organs, upon which the diseases

in question depend. It maintains, by means of these qualities, a regular, equal, and moderate state of the alimentary canal. It acts as a gentle stimulus to the digestive organs, constantly keeping up in them a sufficient activity to prevent their falling into that state of torpor which has been spoken of; and thus also to obviate that excessive reaction which is its natural consequence.

It may be asked then, why it is, if the use of fruit be thus salutary, that there is so general a prejudice against it, and why it has obtained the reputation of producing those very diseases which we assert that it has a tendency to prevent; and why in fact it does often prove very injurious, and sometimes fatal in its effects? We answer that this arises from its abuse. Few persons understand the right manner of using it; and, in general, all the evil consequencès which arise from it may be ascribed to its use when of an improper quality or in an improper state; in an improper quantity; and at improper times.

A great deal of fruit is eaten of an improper quality and in an improper state. In large towns where early fruit bears a high price, it is brought to market before it is fairly ripe; in a crude, green state, not possessed of its natural taste or qualities. When ripe, fruit consists chiefly of acid, sugar, and mucilage; when green, the acid predominates very much over the other ingredients, renders the whole mass of it indigestible and irritating to the stomach, and thus excites disorder. When fully grown, some kinds of fruit may be plucked from the tree, and ripened afterwards, as well and often better than if it had not been gathered. But when this is done before it is fully grown in order to force an artificial ripeness, its qualities, as an article of diet, though less injurious than when it is absolutely green, are far from beneficial.

Fruit, therefore, to be healthy as food, should be well grown and well ripened. When it is not in this state it is positively injurious, especially if eaten raw; though its bad qualities are in some measure obviated if it be well cooked. Indeed if good fruit cannot be had, the use of in this state, in small quantities, is probably rather beneficial than otherwise.

Fruit, however, even if perfectly ripe, and of a proper kind, may injure from being eaten in immoderate quantities, and at improper times. People generally regard it as a luxury rather than as an article of food, and hence they are apt to indulge in it, at all times of the day, between their meals, and late in the evening. The consequence is that they eat, in the first place, their usual quantity of other food, and then fill themselves with an additional allowance of fruit; which, from its delicious taste

and texture, they are able to force down upon a distended stomach, when they could eat nothing else. In this case the stomach having more to do than it can readily accomplish, becomes gradually disordered by a continuance in this excess, is finally irritated and oppressed by its load, and either relieves itself by vomiting, or passes the undigested mass downward, and a diarrhœa, or even dysentery, may be thus created.

In order to answer a salutary purpose in the system, *fruit should take the place of part of our other food, and should be eaten at the same time with it.* This is the most important and essential particular to be regarded in its use. Generally it should be eaten at our meals, and for our meals, and not at odd times between them. There is an old saying, which like many other ones is founded in truth; "*Fruit is gold in the morning, silver at noon, and lead at night.*" The best time for eating fruit is at breakfast, and for breakfast; that is, as constituting a part of that meal. There is no objection to its forming a part of our dinner. It is a common opinion, indeed, that fruit is better before dinner than after. This is only so far true, as it depends upon the fact, that if we begin dinner with fruit we shall in some manner satiate the appetite, and hence be able to eat a less quantity of other food. Whereas if we make a dessert of fruit, we shall first make a full meal of the usual articles, and then indulge to excess in fruit. Neither is there any objection to a moderate indulgence in fruit at supper, under the same general principle, that we are to regard it as nourishment and not as a luxury; and to partake more cautiously and sparingly at that meal, for the same reason that we should do so of all other kinds of food; since at the period of the day when this meal is generally taken, the digestive powers are less active, and the system stands in need rather of repose than of nourishment.

It would be well if fruit were never eaten except at the regular meals. Those particularly who are of feeble constitutions and subject to disordered stomachs, ought by all means to avoid it at other times. The strong and hearty may perhaps indulge with impunity at all times and under all circumstances; but their example must not be followed by those who truly value their health, since the strongest constitutions are sometimes undermined by a continued disregard of the rules of moderation.

It is a common impression that wine or spirits are necessary after eating fruit, in order to prevent its injurious effects. This is not true of wine, which so far from preventing, often increases the bad effects of fruit. Brandy and spirits do

perhaps prevent some of these effects, but not all; and every one who finds it necessary to have recourse to either of them after eating fruit, may be very sure that he has eaten too much.

Fruit is not injurious to children, if due regard be had to these considerations, after the usual time of weaning; but somewhat more caution should be used with respect to quantity, than in the case of adults. It is also more important that it should be eaten, part of the time at least, in a cooked state. But nothing is more injurious to the health of children than indulgence, to an unlimited degree, in fruit of every kind, green and ripe, at all times.

XVII. FACTS CONCERNING THE USE AND ABUSE OF ARDENT SPIRITS.

A VARIETY of attempts have been made to ascertain with exactness, the amount of evil produced in the United States by the excessive use of spirituous liquors. The results which have been obtained do not by any means correspond in all particulars. Some inquirers represent the evil as greater than others; some represent it as increasing, others as diminishing; some regard it as without remedy by human means, and others believe that much may be done to remove it. There is one thing, however, in which they all agree, namely, that the evil is very great, and threatens to be a most serious impediment to our prosperity as a nation. Minor differences of opinion therefore are of no consequence; and it is not important whose estimate of amount, extent, and numbers we take, since those, who make them the smallest, make them large enough to astonish and terrify us.

Intemperance produces death, directly and indirectly; *directly*, by the actual effects of intoxication, and the diseases immediately produced by the use of ardent spirits; and *indirectly*, by rendering the intemperate more liable to be affected by the causes of all diseases, than the temperate person, and less able to struggle with those diseases and be carried safely through them. It will be obvious then how uncertain a matter it is to attempt to determine how much the whole amount of deaths is increased by the use of ardent spirits. We can only at best make an approximation to the truth, but this is enough for our present purpose.

To take the city of Boston as an example; the Bills of Mortality for the two latest years give us on an average fifty deaths,

occasioned so directly by intemperance, as to be entered under names of disease to which none but drunkards fall victims. This is about 1 in 24 of the whole number of deaths; and as most drunkards perish between 20 and 70 years of age, and about 10 deaths out of every 24 occur between these ages, it follows that about one of every ten adult persons who die in this city, dies not merely a drunkard, but so directly and notoriously a drunkard, that his character is as it were proclaimed to the world on his tombstone. We do not claim for the population of this city any higher character in point of temperance, than belongs to other parts of our country, neither do we believe that it deserves a lower one. Supposing therefore that, on an average throughout our country, the deaths from intemperance bear about the same proportion to the whole number that they do in Boston, it will not be difficult to estimate the number of victims that fall a sacrifice directly to the use of ardent spirits in the course of a year in the whole United States.

The population of the United States at the present time can not fall much short of 12,000,000 and probably exceeds it. We shall be within the truth if we suppose that 1 person in 50 of this number dies annually. In some districts the mortality is probably greater, in some it is probably less. Out of the whole then, there will not be less than 240,000 deaths every year. The proportion of persons in Boston dying directly of intemperance was stated to be 1 in 24. The same proportion will give us ten thousand persons in the United States dying in the course of every year directly and notoriously of drunkenness.

But this estimate presents the subject in the most favorable point of view. We do not in this way get at half the actual ravages committed by this formidable destroyer. Where there is one man dying of actual drunkenness, three or four, to speak within bounds, die of diseases which have been either gradually produced, or at least rendered fatal, by the effects of hard drinking upon the constitution. There is no reasonable doubt that between thirty and forty thousand persons die annually in the United States, in this way.

This is an appalling result. But this simple statement does not include the whole evil. A large proportion of these deaths occur among persons in the prime of life. A vast many are young men just beginning the world, having or about to have young families. In ten years, therefore, there is not only a loss to the country in its population of three or four hundred thousand lives, actually destroyed by intemperance, but of a much larger

number, the probable offspring of those who have been thus untimely cut off.

But the loss of life is not the only one to be taken into account. The loss and waste of property is equally remarkable. It has been estimated that forty-five millions of gallons of ardent spirits are annually consumed in the United States, at an expense to the consumers of at least thirty millions of dollars. This amount of property, though not perhaps wholly thrown away in an economical point of view, is at best employed to promote the most unprofitable kind of labor, and is diverted from many valuable kinds of investment. It is no doubt true that the consumption of ardent spirits promotes some species of honest and productive labor. It increases the amount of our importations and thus aids our commerce; it increases the consumption of, and creates a demand for several kinds of fruit and grain, and thus promotes the prosperity of the agricultural interest. But there are other ways of laying out the same money which would equally contribute to advance the public interest and industry, and which would not be liable to the same drawbacks.

Thus if we take the sum which the citizens of Massachusetts yearly pay for ardent spirits at one million and a half—and we are careful to make all our estimates within the truth—let it be devoted, but for four years, to purposes of public improvement, and we might have all the rail-roads which have been projected in different directions, without exacting a cent in the way of direct tax from the inhabitants. In this way the same sum of money would call forth ten times the amount of productive labor that it does when expended in the purchase of ardent spirits. It would promote the interests both of the merchant and agriculturist merely by the expenditure of so large a sum in the community during their construction. Then, besides this, when all was done, there would be a permanent piece of property, not only paying annual interest to those who had invested their money, but constantly promoting the industry and prosperity of the whole community in a thousand indirect ways.

The habit of drinking to excess also occasions a direct loss to the community, by the increase in the number of paupers which it occasions. Indeed throughout the United States it seems to have been universally found, that a majority of those who are supported at the public expense are drunkards. In different parts of the country, from two thirds to four fifths of the paupers have been reduced to that situation by habits of intemperance. According to reports and estimates made by

public authority in the state of Massachusetts, it seems probable that the actual amount of taxes levied for the support of intemperate paupers does not fall short of three hundred thousand dollars. If the expense of the same department in other states, is in the same proportion to their population, the total amount of money expended in public charity for the relief and support of those who are intemperate, or their families, will not fall short of six millions of dollars. If we include the sums contributed and dealt out for the relief of the intemperate and their families, in private, by societies and individuals, this estimate would be very far too low. Was ever a tax levied upon any community, so burdensome in its operation, so ruinous in its effects, as this, by the most oppressive tyrant that ever existed ?

Another loss to society from the habit of drinking arises from the actual waste of time. Almost every man who drinks *moderately* is occupied more or less of his leisure in going to and from the dram-shop ; whilst those who are so far advanced in the habit as to be called hard drinkers, spend probably on an average at least half the working time of the year in tippling or in that state of stupidity and inactivity which follows hard drinking.

But to say nothing of the waste of time, even the money actually spent by those who drink, if laid by and carefully invested would amount in the common life of a man, to a handsome property for his wife and children after his death, or provide him with a comfortable maintenance in his old age. We suppose the drinking expenses of intemperate persons, taking all things together, can hardly be less than 50 dollars a year. If this sum, instead of being thus squandered by the drunkard, should be paid for an insurance on his life, a handsome provision would be made in the event of his death for those whom he might leave behind him.

It is fair to ask then, what great good do ardent spirits do to compensate for the great hurt they do. If no such thing existed, it is clear we should avoid a great deal of evil, not only the evil of which we have spoken, but a great deal of other kinds, of which we have not spoken. In what respect should we have been worse off, had the distillation of alkohol never been discovered ? In what respect should we be worse off, were its distillation now to be no longer permitted ?

The laborer will say that it is necessary for him in order to refresh him and support his strength during labor.

The poor man will say that it is necessary to him as a cheap and exhilarating draught after the labor of the day, as a solace

for his cares, and as enabling him to lose the recollection of his hard and painful lot.

The wealthy man will say that it is necessary in order to promote the digestion of his food, to keep up the tone of his stomach, and prevent the evil consequences of an indolent life and a luxurious diet upon his health.

The man of pleasure, will say that it is necessary to the excitement of the convivial board; that life is nothing without the pleasures of the table, and that without this stimulus, society would lose its zest.

And so every one who uses ardent spirits in any form, would find some sufficient reason for ranking them among the necessaries of life.

But it is clear that in none of these respects do ardent spirits do any good which can be weighed in the balance against the evils above mentioned, unless it be indeed true that they serve to support the strength and preserve the health of those who are engaged in hard labor. If they really have this effect, there will be some reason for their use by that class at least who are subjected to severe and constant bodily exertions. This question therefore it is important to determine. All the other excuses which are generally offered are frivolous and groundless.

But it appears, upon the very best evidence, that ardent spirits, even in moderate quantities, do by no means promote bodily strength; and do not enable persons to bear fatigue or exposure better than other liquids of a less stimulating character. A great many facts tend to establish this conclusion.

Men were accustomed to labor, before the introduction of ardent spirits, as hard as they do now; they executed works requiring as great and as continued an exertion of strength as any which have been projected in modern times. The want of the stimulus of alkohol seems never to have impeded the prosecution of their most stupendous and extensive plans for building cities, fortifications, &c.

The Roman soldiers, who used to march with a great weight of armour about them (sixty pounds, as is said), and who underwent immense hardships and accomplished as much as any troops of modern times, drank only vinegar and water. Upon this simple beverage they conquered the world.

Dr. Jackson, a distinguished army medical writer, asserts that so far from ardent spirits being a proper drink for soldiers on hard duty, it is an injurious one, and that they endure labor and hardship better on a simple and spare diet, with tea for drink.

It has been universally found, when ships have been wrecked especially in cold weather, that those who abstain from spirits endure the fatigue, exposure, and cold, better than those who indulge in them. Hence the lives of the officers are more frequently preserved than those of the men, simply because their general habits and responsibility for the safety of the ship make them keep sober, and thus preserve them.

A traveller in South America tells us that the heaviest loads he ever saw carried, were borne on the backs of some Indians whom he saw at work in the mines. These men were never allowed ardent spirits.

The individuals trained in Europe for pugilistic combats, are never allowed ardent spirits. Yet nothing requires more bodily strength than boxing, or is more likely entirely to exhaust the whole frame.

Within a few years various kinds of labor have been carried on without the use of spirits, which have been generally supposed to require their use particularly, such as haying, *raising*, shipbuilding, &c., and the result has always been in favor of abstinence.

The testimony of medical men concurs to show that an entire abstinence from ardent spirits is most favorable to perfect health, and of course to bodily strength and ability to labor.

There is nothing then to counterbalance the evils produced by the abuse of ardent spirits. The best that can be said of them is that their use in small quantities does not impede us in our labor, though perhaps even this is not universally true. There is no good reason, then, why they should not be banished entirely from common use. The only way to avoid the *abuse* is to get rid of the *use*, to get rid of them, in short, altogether.

All who are in the habit of taking a moderate quantity of ardent spirits with their meals, or while at labor, should be willing to relinquish this indulgence. They should consider that all drunkards have been once moderate drinkers; and, that, however safe they may feel themselves, yet all drunkards once felt as secure. No man is secure so long as he drinks at all. Let every man quit it therefore at once, entirely, and for ever. If it is not necessary for our own safety, it is for that of others.

The reform must come from the moderate drinkers. The excessive ones never will reform. Let all who drink moderately resolve in future, not to drink at all, and we shall soon see a change in the face of society. Even to the moderate drinkers, in an economical point of view, the relinquishment of ardent spirits is something of an object. Suppose a man to spend but

twenty dollars a year for his liquor, which is a small allowance for all the expenses of a moderate drinker, and in thirty years, from the age of 20 to 50, if this sum were laid by and regularly invested every year with the interest, so as to bring compound interest, it would amount at the end of that time to more than fifteen hundred dollars.

XVIII. ON CLOTHING.

[From the Companion to the British Almanac.]

A VERY striking fact, exhibited by the Bills of Mortality, is the very large proportion of persons who die of *consumption*. It is not our intention to enter into any general remarks upon the nature of that fatal disease. In very many cases the origin of a consumption is an ordinary *cold;* and that cold is frequently taken through the want of a proper attention to clothing, particularly in females. We shall, therefore, offer a few general remarks upon this subject, so important to the health of all classes of persons.

Nothing is more necessary to a comfortable state of existence than that the body should be kept in nearly an uniform temperature. The Almighty wisdom, which made the senses serve as instruments of pleasure for our gratification and of pain for our protection, has rendered the feelings arising from excess or deficiency of heat so acute, that we instinctively seek shelter from the scorching heat and freezing cold. We bathe our limbs in the cool stream, or clothe our bodies with the warm fleece. We court the breeze or carefully avoid it. But no efforts to mitigate the injurious effects of heat or cold would avail us, if nature had not furnished us, in common with other animals (in the peculiar functions of the skin and lungs), with a power of preserving the heat of the body uniform, under almost every variety of temperature to which the atmosphere is liable. The skin, by increase of the perspiration, carries off the excess of heat; the lungs, by decomposing the atmosphere, supply the loss;—so that the internal parts of the body are preserved at a temperature of about ninety-eight degrees, under all circumstances. In addition to the important share which the function of perspiration has in regulating the heat of the body, it serves the further purpose of an outlet to the constitution, by which it gets rid of matters that are no longer useful in its economy.

The excretory function of the skin is of such paramount importance to health that we ought at all times to direct our attention to the means of securing its being duly performed; for if the matters that ought to be thrown out of the body by the pores of the skin are retained, they invariably prove injurious. When speaking of the excrementitious matter of the skin, we do not mean the sensible moisture which is poured out in hot weather, or when the body is heated by exercise; but a matter which is too subtile for the senses to take cognizance of—which is continually passing off from every part of the body, and which has been called the *insensible* perspiration. This insensible perspiration is the true excretion of the skin.

A suppression of the insensible perspiration is a prevailing symptom in almost all diseases. It is the sole cause of many fevers. Very many chronic diseases have no other cause. In warm weather, and particularly in hot climates, the functions of the skin being prodigiously increased, all the consequences of interrupting them are proportionably dangerous.

Besides the function of perspiration, the skin has, in common with every other surface of the body, a process, by means of appropriate vessels, of absorbing or taking up, and conveying into the blood vessels, any thing that may be in contact with it; it is also the part on which the organ of feeling or touch is distributed.

The skin is supplied with glands, which provide an oily matter that renders it impervious to water, and thus secures the evaporation of the sensible perspiration. Were this oily matter deficient, the skin would become sodden, as is the case when it has been removed,—a fact to be observed in the hands of washerwomen, when it is destroyed by the solvent powers of the soap. The hair serves as so many capillary tubes to conduct the perspired fluid from the skin.

The three powers of the skin—perspiration, absorption, and feeling, are so dependent on each other, that it is impossible for one to be deranged without the other two being also disordered. For if a man be exposed to a frosty atmosphere, in a state of inactivity, or without sufficient clothing, till his limbs become stiff and his skin insensible, the vessels that excite the perspiration and the absorbent vessels partake of the torpor that has seized on the nerves of feeling, nor will they regain their lost activity till the sensibility be completely restored. The danger of suddenly attempting to restore sensibility to frozen parts is well known. If the addition of warmth be not very gradual, the vitality of the part will be destroyed.

This consideration of the functions of the skin will at once

point out the necessity of an especial attention, in a fickle climate, to the subject of clothing. Every one's experience must have shown him how extremely capricious the weather is in this country. Our experience of this great inconstancy in the temperature of the air ought to have instructed us how to secure ourselves from its effects.

The chief end proposed by clothing ought to be protection from the cold; and it never can be too deeply impressed on the mind (especially of those who have the care of children), that a degree of cold that amounts to shivering cannot be felt, under any circumstances, without injury to the health; and that the strongest constitution cannot resist the benumbing influence of a sensation of cold constantly present, even though it be so moderate as not to occasion immediate complaint, or to induce the sufferer to seek protection from it. This degree of cold often lays the foundation of the whole host of chronic diseases, foremost amongst which are found scrofula and consumption.

Persons engaged in sedentary employments must be almost constantly under the influence of this degree of cold, unless the apartment in which they work is heated to a degree that subjects them, on leaving it, to all the dangers of a sudden transition, as it were from summer to winter. The inactivity to which such persons are condemned, by weakening the body, renders it incapable of maintaining the degree of warmth necessary to comfort, without additional clothing or fire. Under such circumstances a sufficient quantity of clothing of a proper quality, with the apartment moderately warmed and well ventilated, ought to be preferred, for keeping up the requisite degree of warmth, to any means of heating the air of the room so much as to render any increase of clothing unnecessary. To heat the air of an apartment much above the ordinary temperature of the atmosphere, we must shut out the external air;—the air also becomes extremely rarefied and dry, which circumstances make it doubly dangerous to pass from it to the cold, raw, external air. But in leaving a moderately well warmed room, if properly clothed, the change is not felt; and the full advantage of exercise is derived from any opportunity of taking it that may occur.

The only kind of dress that can afford the protection required by the changes of temperature to which high northern climates are liable, is woollen. Nor will it be of much avail that woollen be worn, unless *so much* of it be worn, and it be *so* worn as effectually to keep out the cold. Those who would receive the advantage which the wearing woollen is capable of affording,

must wear it next the skin; for it is in this situation only that its health-preserving power can be felt. The great advantages of *Woollen cloth* are briefly these; the readiness with which it allows the escape of the matter of perspiration through its texture—its power of preserving the sensation of warmth to the skin under all circumstances—the difficulty there is in making it thoroughly wet—the slowness with which it conducts heat—the softness, lightness, and pliancy of its texture.

Cotton cloth, though it differs but little from linen, approaches nearer to the nature of woollen, and on that account must be esteemed as the next best substance of which clothing may be made.

Silk is the next in point of excellence, but it is very inferior to cotton in every respect.

Linen possesses the contrary of most of the properties enumerated as excellences in woollen. It retains the matter of perspiration in its texture, and speedily becomes imbued with it; it gives an unpleasant sensation of cold to the skin;—it is very readily saturated with moisture, and it conducts heat too rapidly. It is, indeed, the *worst* of all the substances in use, being the least qualified to answer the purposes of clothing.

There are several prevailing errors in the mode of adapting clothes to the figure of the body, particularly amongst females. Clothes should be so made as to allow the body the full exercise of all its motions. The neglect of this precaution is productive of more mischief than is generally believed. The misery and suffering arising from it begin while we are yet in the cradle. When they have escaped from the nurses' hands boys are left to nature. Girls have for awhile the same chance as boys in a freedom from bandages of all kinds; but as they approach to womanhood, they are again put into trammels in the forms of stays. The bad consequences of the pressure of stays are not immediately obvious, but they are not the less certain on that account; the girl writhes and twists to avoid the pinching, which must necessarily attend the commencement of wearing stays tightly laced; the posture in which she finds ease is the one in which she will constantly be, until at last she will not be comfortable in any other, even when she is freed from the pressure that originally obliged her to adopt it. In this way most of the deformities to which young people are subject originate; and, unfortunately, it is not often that they are perceived until they have become considerable, and have existed too long to admit of remedy.

XIX. ON VENTILATION.

[Abridged from the same.]

We are all thoroughly aware of the necessity of breathing; and the agreeable freshness and reviving influence of the pure morning air must convince us that the breathing a pure atmosphere is conducive to health; yet we as carefully exclude the air from our houses as if its approach were noxious. Intending to shut out the inclemencies of the weather only, in our care to guard ourselves from the external air, we hinder that renewal of the atmosphere which is necessary to prevent its becoming stagnant and unfit to support animal life.

Few persons are aware how very necessary a thorough ventilation is to the preservation of health. We preserve life without food for a considerable time, but keep us without air for a very few minutes and we cease to exist. It is not enough that we have *air*, we must have *fresh air;* for the principle by which life is supported is taken from the air during the act of breathing. One fourth only of the atmosphere is capable of supporting life; the remainder serves to dilute the pure vital air, and render it more fit to be respired. A full grown man takes into his lungs nearly a pint of air each time he breathes; and when at rest, he makes about twenty inspirations in a minute. In the lungs, by an appropriate apparatus, the air is exposed to the action of the blood, which changes its purer part, the vital air, (oxigen gas,) into fixed air, (carbonic acid gas,) which is not only unfit to support animal life, but is absolutely destructive of it. An admirable provision of the great Author of nature is here visible, to prevent this exhausted and now poisonous air from being breathed a second time;—while in the lungs, the air receives so much heat as makes it specifically lighter than the pure atmosphere; it consequently rises above our heads during the short pause between throwing out the breath and drawing it in again, and thus secures to us a pure draught. By the care we take to shut out the external air from our houses, we prevent the escape of the deteriorated air and condemn ourselves to breathe again and again the same contaminated, unrefreshing atmosphere.

Who that has ever felt the refreshing effects of the morning air can wonder at the lassitude and disease that follow the continued breathing of the pestiferous atmosphere of crowded or ill-ventilated apartments? It is only necessary to observe the

countenance of those who inhabit close rooms and houses, the squalid hue of their skins, their sunken eyes, and their languid movements, to be sensible of the bad effects of shutting out the external air.

Besides the contamination of the air from being breathed, there are other matters which tend to depreciate its purity; these are the effluvia constantly passing off from the surface of animal bodies, and the combustion of candles and other burning substances. On going into a bed-room in a morning, soon after the occupant has left his bed, though he be in perfect health and habitually cleanly in his person, the sense of smelling never fails to be offended with the odor of animal effluvia with which the atmosphere is charged. There is another case, perhaps, still more striking, when a person fresh from the morning air enters a coach in which several persons have been close-stewed during a long night. He who has once made the experiment will never voluntarily repeat it. The simple expedient for keeping down both windows but a single half-inch would prevent many of the colds, and even fevers, which this injurious mode of travelling often produces. If, under such circumstances, the air is vitiated, how much more injuriously must its quality be depreciated when several persons are confined to one room, where there is an utter neglect of cleanliness; in which cooking, washing, and all other domestic affairs are necessarily performed; where the windows are immoveable, and the door is never opened but while some one is passing through it!

It may be taken as a wholesome general rule, that whatever produces a disagreeable impression on the sense of smelling is unfavorable to health. That sense was doubtless intended to guard us against the dangers to which we are liable from vitiation of the atmosphere. If we have, by the same means, a high sense of gratification from other objects, it ought to excite our admiration of the beneficence of the Deity in thus making our senses serve the double purpose of affording us pleasure and security; for the latter end might just as effectually have been answered by our being only susceptible of painful impressions.

To keep the atmosphere of our houses free from contamination, it is not sufficient that we secure a frequent renewal of the air—all matters which can injure its purity must be carefully removed.

Flowers in water and living plants in pots greatly injure the purity of the air during the night, by giving out large quantities of an air (carbonic acid) similar to that which is separated

from the lungs by breathing, which, as before stated, is highly noxious. On this account they never should be kept in bed-rooms; there are instances of persons, who have incautiously gone to sleep in a close room in which there has been a large growing plant, having been found dead in the morning, as effectually suffocated as if there had been a charcoal stove in the room.

A constant renewal of the air is absolutely necessary to its purity; for in all situations it is suffering either by its vital part being absorbed, or by impure vapors being disengaged and dispersed through it. *Ventilation, therefore, resolves itself into the securing a constant supply of fresh air.*

In the construction of houses, this great object has been too generally overlooked, when, by a little contrivance in the arrangement of windows and doors, a current of air might, at any time, be made to pervade every room of a house of any dimensions. Rooms cannot be well ventilated that have no outlet for the air; for this reason there should be a chimney to every apartment. The windows should be capable of being opened, and they should, if possible, be situated on the side of the room opposite to, and furthest from, the fire-place, that the air may traverse the whole space of the apartment in its way to the chimney.

Fire-places in bed-rooms should not be stopped up with chimney-boards. The windows should be thrown open for some hours every day, to carry off the animal effluvia which are necessarily separating from the bed-clothes, and which should be assisted in their escape by the bed being shaken up, and the clothes spread abroad, in which state they should remain as long as possible; this is the reverse of the usual practice of making the bed, as it is called, in the morning and tucking it up close, as if with the determination of preventing any purification from taking place. Attention to this direction, with regard to airing the bed-clothes and bed after being slept in, is of the greatest importance to persons of weak health. Instances have been known in which restlessness and an inability to find refreshment from sleep would come on in such individuals when the linen of their beds had been unchanged for eight or ten days. In one case of a gentleman of a very irritable habit, who suffered from excessive perspiration during the night, and who had taken much medicine without relief, he observed that, for two or three nights after he had fresh sheets put upon his bed, he had no sweating; and that, after that time, he never awoke, but that he was literally swimming, and

that the sweats seemed to increase with the length of time he slept in the same sheets.

Various means are had recourse to at times, with the intention of correcting disagreeable smells, and of purifying the air of sick-rooms. Diffusing the vapor of vinegar through the air, by plunging a hot poker into a vessel containing it; burning aromatic vegetables, smoking tobacco, and exploding gunpowder, are the means usually employed. All these are useless. The explosion of gunpowder may, indeed, do something, by displacing the air within the reach of its influence; but then, unfortunately, an air is produced by its combustion, that is as offensive, and equally unfit to support life as any air it can be used to remove. These expedients only serve to disguise the really offensive condition of the atmosphere. The only certain means of purifying the air of a chamber which is actually occupied by a sick person, is by changing it in such a manner that the patient shall not be directly exposed to the draughts or currents.

No fumigation will be of any avail in purifying stagnant air, or air that has been breathed till it has been deprived of its vital part; such air must be driven out, when its place should be immediately supplied by the fresh, pure atmosphere. The readiest means of changing the air of an apartment is, by lighting a fire in it, and then throwing open the door and windows; this will set the air in motion, by establishing a current up the chimney. The air which has been altered by being breathed is essential to vegetable life; and plants, aided by the rays of the sun, have the power to absorb it, while they themselves at the same time give out pure vital air. This process, going on by day, the reverse of that described before as taking place during the night, is continually in operation, so that the purification of the atmosphere can only be prevented by its being preserved in a stagnant state.

PART IV.

STATISTICAL AND GENERAL INFORMATION CONCERNING FOREIGN COUNTRIES.

XX. STATISTICS.

The word *Statistics* is of modern origin, and denotes a detailed view of the population, industry, agriculture, and commerce of a country, or an inventory of its resources, force, revenues, and productions of every description. Something similar to this was practised in ancient times; for Aristotle, Xenophon, and other writers speak of periodical returns in Greece, bearing a resemblance to the statistics of the present day. It was also a custom sometimes to engrave important facts of this kind on walls and pillars. Tacitus tells us, that when Germanicus visited Thebes, he saw an inscription, which a priest interpreted to him as containing an account of "the tribute paid by the conquered nations, the specific weight of gold and silver, the quantity of arms, the number of horses, the offerings of ivory and rich perfumes presented to the temples of Egypt, the measure of grain and the various supplies administered by every nation, making altogether a prodigious revenue." He tells us, moreover, that Nero, when the people complained of the oppressions practised upon them by the collectors, issued a proclamation, "directing that the revenue laws, till that time kept among the mysteries of state, should be drawn up in form, and entered on the public tables for the inspection of all degrees and ranks of men." The Romans, for some time, were also in the habit of making periodical enumerations of the people. In these registers were noted the name, age, and year of birth, the sex, the number of slaves and of domestic animals, and a valuation of all the property. In many nations of the East, a similar usage has prevailed from time immemorial.

But the subject of statistics, as a science, is of recent origin. Achenwall, a professor of Göttingen University, was its founder, about the middle of the last century. In 1748 he pub-

lished a work on statistics, which has passed through many editions, and the plan of which has served as the basis of the most approved later treatises.

Geography and statistics have this difference; the former treats of the earth, in relation to its figure and geometrical measurements; to its structure, its physical characteristics, and political divisions; whereas the latter gives an account of whatever influences the condition of the inhabitants, or the operations of government on the welfare of men in promoting the ends of social being, and the best interests of communities.

These objects can be attained in different countries, only through the immediate agency of governments. Individuals may, with great labor, collect facts upon particular topics, but they have not the means nor the power to gather from all the branches of social economy such detailed reports, as are essential to a comprehensive view of the condition of a country. As yet, however, individuals have done more than governments in this respect. Statements of population and revenue are all, that the official reports of states usually embrace. England and the United States are the only governments, in which the laws provide for a periodical census, extending to all the important branches of statistical knowledge. In England, the first census under this law took place in 1811, and is repeated every ten years. The first census under the law of the United States was taken in 1790, and is likewise repeated at stated periods of ten years each.

The most important works on the statistics of the United States are Pitkin's and Seybert's; and also the recent "Tabular Statistical Views," by Watterston and Van Zandt.

XXI. STATISTICS OF THE WORLD.

[From the Companion to the British Almanac.]

The French are in the habit of bestowing very minute attention upon this interesting branch of inquiry; and some of their men of letters have devoted themselves to the preparation of Tables of reference, which may show, from time to time, the progress and actual condition of the various states of the world. Amongst others, M. Adrien Balbi has applied himself for twenty years to these important labors, and he has recently published a Chart, entitled "Balance Politique du Globe, en 1828," which is considered the most correct work of its kind, and which the author states is the result of a long period of the most laborious

investigation. The late distinguished geographer, Malte-Brun, mentions this production, which was nearly completed before his death, as a most valuable abstract, of which he intended to insert a part in his concluding volume.

From this Chart of M. Balbi, the following Table has been compiled. The geographical division is that of M. Walkenaer. The surface of the earth has been estimated at 148,522,000 square miles, of 60 to the equatorial degree (geographical miles), of which nearly three-fourths, or 110,489,000 square miles are covered by the Ocean and the interior Seas;—the remainder, consisting of 37,673,000 square miles, forming the five parts of the world, called Europe, Asia, Africa, America, and Australasia (or Oceania). The square geographical mile has been retained in the following Tables, instead of the English square mile being adopted, as the former is used in most works on geography, particularly in those of France and Germany. The English square mile is about three-fourths of the area of the square geographical mile; that is, four English square miles are nearly equal to three geographical.

The table contains in successive columns, the names of countries, extent in square miles, population, reigning sovereign, or head of government, capital cities, with their population, principal religious denominations, revenue in pounds sterling, debt in pounds sterling, army, navy.

The particulars relating to each State are carried across two pages, and the figures prefixed to each are repeated in the last column of the right hand page, to assist the reference. For those States which have Colonial Possessions, a second line is given, showing the total extent of their power:—Example 1.—"*French Monarchy*, 154,000 square miles, 32,000,000 population"—gives the area and population of France itself; but the second line, "*Total of French Monarchy*," includes the amount of France and all its possessions and dependencies. Wherever this mark (?) is attached to a sum, or stands in the place of one, the information is considered questionable or is not to be obtained.

EUROPE.

Surface 2,793,000 Geographical Sq. Miles.
Population 227,700,000 Inhabitatants.

	STATES AND TITLES.	Surface in Geogra. Sq. Miles.	Population.	Reigning Sovereign, or Head of Government.
	CENTRAL STATES.			
	1 French Monarchy	154,000	32,000,000	Charles X., 1824
	Total of French Monarchy	188,000	32,554,000	
	2 Austrian Empire	194,500	32,000,000	Francis I., 1792
	3 Prussian Monarchy	80,450	12,464,000	Frederic William III., 1797
	4 Monarchy of the Netherlands	19,000	6,143,000	William I.,1815 (Statholder, 1806).
	Total of the Monarchy of the Netherlands	252,000	15,562,000	
	5 Swiss Confederation	11,200	1,980,000	Junker David Wyss Landmann
WESTERN DIVISION. GERMANIC CONFEDERATION.	6 Kingdom of Bavaria	22,120	3,960,000	Louis I., 1825
	7 Kingdom of Wirtemberg	5,720	1,520,000	William I., 1816
	8 Kingdom of Hanover	11,125	1,550,000	George IV., 1820
	9 Kingdom of Saxony	4,341	1,400,000	Anthony, 1827
	10 Grand Duchy of Baden	4,480	1,130,000	Louis, 1808
	11 Grand Duchy of Hesse	2,826	700,000	Louis I., 1790
	12 Electorate of Hesse	3,344	592,000	William II., 1821
	13 Grand Duchy of Saxe Weimar	1,070	222,000	Charles Fred., 1828
	14 Do. of Mecklenberg-Schwerin	3,582	431,000	Francis, 1785
	15 Do. of Mecklenberg-Strelitz	578	77,000	George, 1816
	16 Do. of Holstein-Oldenburgh	1,880	241,000	Peter, 1823
	17 Duchy of Nassau	1,446	337,000	William, 1816
	18 Duchy of Brunswick	1,126	242,000	Charles, 1815
	19 Duchy of Saxe-Cobourg-Gotha	731	143,000	Ernest, 1826
	20 Duchy of Saxe Meiningen	691	130,000	Bernard, 1803
	21 Duchy of Saxe Altenburgh	397	104,000	Frederic, 1780
	22 Duchy of Anhalt-Dessau	261	56,000	Leopold, 1817
	23 Duchy of Anhalt-Berneburgh	253	38,000	Alexis, 1796
	24 Duchy of Anhalt-Koethen	240	34,000	Ferdinand, 1818
	25 Princip. of Schwarz.-Rudolstadt	306	57,000	Gunther Frderic, 1807
	26 Prin. of Schwarz.-Sondershausen	270	48,000	Gunther Fred.Charles, 1794
	27 Principality of Reuss-Greitz	109	23,000	Henry XIX., 1817
	28 Pricip. of Reuss-Schleitz	156	28,000	Henry LXII., 1818
	29 Pr. of Reuss Lobenst.-Ebersdorf	182	26,000	Henry LXXII., 1822
	30 Prin. of Lippe-Detmold	330	72,000	Leopold, 1802
	31 Prin. of Lippe-Schauhenburg	157	26,000	George William, 1787
	32 Prin. of Waldeck	347	54,000	George, 1813
	33 Pr. of Hohenzollern Sigmaringen	293	38,000	Anthony, 1785
	34 Prin. of Hohenzollern Hechingen	82	15,000	Frederic, 1810
	35 Prin. of Liechtenstein	40	6,000	John, 1805
	36 Landgrave of Hesse Homburgh	125	20,000	Frederic, 1820
	37 Republic of Francfort	69	52,000	De Malapert (Burgomaster)
	38 Republic of Bremen	51	49,000	Grœning, Schmidt, Nowmen, & Duntze, (Burg.)
	39 Republic of Hamburgh	114	148,000	Amsink, Heise, Bartels, & Koch, (Burgo.)
	40 Republic of Lubeck	88	41,000	Beneke, Kindler, Boeg, & Evers, (Burgom'rs.)
	41 Lordship of Kniphausen	13	2,859	Wm. Gusta. Fred. 1825

* Of this number, 59 are ships of the line, 51 frigates, and 213 inferior vessels.

Capital Cities, with their Population.	Principal Religious Denominations.	Revenue. £ Sterling.	Debt. £ Sterling.	Armies.	Ships.	
Paris, 890,000 .	Catholic, Calvinist .	39,560,000	184,960,000	231,560	323 *	1
Vienna, 300,000	Catholic, Greek, Calvinist, Lutheran	14,000,000	58,400,000	271,400	72 †	2
Berlin, 220,000 .	Protestant, (Lutheran, Calvinist,) Catholic	8,600,000	29,067,200	162,600	1	3
Amsterdam,201,000	Catholic, Calvinist, Lutheran	6,473,440	152,000,000	43,300	86?‡	4
Zurich, 10,000 .	Calvinist, Catholic .	400,000	?	33,760	. .	5
Munich, 70,000 .	Catholic, Protestant	3,164,000	9,568,000	35,800	. .	6
Stuttgard, 32,000	Lutheran, Catholic	950,440	2,260,000	13,950	. .	7
Hanover, 23,000	Lutheran, Catholic	1,040,000	2,560,000	13,050	. .	8
Dresden, 70,000 .	Lutheran . .	1,120,000	2,800,000	12,000	. .	9
Karlsruhe, 19,000	Catholic, Lutheran	814,120	1,560,000	10,000	. .	10
Darmstadt, 23,000	Lutheran, Cath. Cal.	628,560	1,080,000	6,190	. .	11
Cassel, 26,000 .	Protestant, Catholic	620,000	263,200	5,680	. .	12
Weimar, 10,000 .	Lutheran . .	196,520	651,640	2,100	. .	13
Schwerin, 12,000	Lutheran . .	240,000	930,000	3,590	. .	14
N. Strelitz, 5,000	Lutheran . .	52,000	120,000	720	. .	15
Oldenburgh, 6,000	Lutheran, Catholic	155,160	. .	1,650	. .	16
Wiesbaden, 7,000	Protestant, Catholic	240,000	432,000	3,000	. .	17
Brunswick, 36,000	Lutheran . .	252,000	320,000	2,100	. .	18
Gotha, 11,000 .	Lutheran . .	98,280	280,000	1,400	. .	19
Meiningen, 5,000	Lutheran . .	77,560	80,000	1,270	. .	20
Altenburgh, 10,000	Lutheran . .	61,040	100,000	1,030	. .	21
Dessau, 10,000 .	Calvinist, Lutheran	73,440	82,760	530	. .	22
Bernburgh, 5,000	Calvinist, Lutheran	46,560	82,760	370	. .	23
Koethen, 6,000 .	Calvinist, Lutheran	33,080	124,120	320	. .	24
Rudolstadt, 3,000	Lutheran . .	33,600	37,760	540	. .	25
Sondershausen,3000	Lutheran . .	20,680	12,200	450	. .	26
Greitz, 6,000 . .	Lutheran . .	14,480	20,680	200	. .	27
Schleitz, 5,000 .	Lutheran . .	13,440	72,400?	280	. .	28
Ebersdorf, 1,000 .	Lutheran . .	24,840		260	. .	29
Detmold, 2,000 .	Calvinist . .	50,680	72,400	690	. .	30
Buckeburg, 2,000	Lutheran . .	22,240	41,360	240	. .	31
Corbach, 2,000 .	Lutheran . .	41,360	124,120	520	. .	32
Sigmaringen, 800	Catholic . .	31,040	155,160?	320	. .	33
Hechingen, 3,000	Catholic . .	12,400	51,720	150	. .	34
Liechtenstein, 700	Catholic . .	140,000	312,000	55	. .	35
Homburgh, 3,000	Calvinist, Lutheran	18,600	46,560	200	. .	36
Francfort, 48,000	Lutheran . .	78,600	827,440	470	. .	37
Bremen, 38,000 .	Lutheran, Calvinist	41,360	312,000	380	. .	38
Hamburgh, 112,000	Lutheran . .	224,000	1,880,000	1,300	. .	39
Lubeck, 22,000 .	Lutheran . .	41,360	360,000	400	. .	40
Kniphausen, 100	Lutheran . .	15,520	?	23	. .	41

† 3 ships of the line, 8 frigates, and 61 inferior vessels.
‡ 18 ships of the line, 20 frigates, and 50 inferior vessels.

	STATES AND TITLES.	Surface in Geogra. Sq. Miles.	Population.	Reigning Sovereign, or Head of Government.
	SOUTHERN STATES.			
WESTERN DIVISION. ITALY.	42 Republic of Andora (Spain)	144	15,000	Magis. of the Republic
	43 Republic of San Marino	17	7,000	2 Quarterly Chiefs
	44 Duchy of Massa	71	29,000	Maria Beatrice, 1814
	45 Duchy of Modena	1,500	350,000	Francis IV., 1814
	46 Principality of Monaco	38	6,500	Honorius, 1819
	47 Duchy of Lucca	312	143,000	Charles, 1824
	48 Duchy of Parma	1,660	440,000	Maria Louisa, 1814
	49 Grand Duchy of Tuscany	6,324	1,275,000	Leopold II., 1824
	50 Kingdom of Sardinia	21,000	4,300,000	Felix, 1821
	51 State of the Church	13,000	2,590,000	Leo XII., 1823
	52 Kingdom of the Two Sicilies	31,800	7,420,000	Francis I., 1825
	53 Spanish Monarchy	137,400	13,900,000	Ferdinand VII., 1808
	Total of the Spanish Monarchy	214,400	17,988,000	
	54 Portuguese Monarchy	29,150	3,530,000	Maria II., 1828
	Total of the Portuguese Monarchy	430,000	5,607,000	
	NORTHERN STATES.			
	55 Monarchy of Sweden and Norway	223,000	3,866,000	Charles XIV., 1818
	56 Danish Monarchy	16,500	1,950,000	Frederic VI., 1808
	Total of the Danish Monarchy	341,000	2,125,000	
	57 British Monarchy	90,948	23,400,000	George IV., 1820
	Total of the British Monarchy	4,457,598	140,450,000	
EASTERN DIVISION.	58 Russian Empire	1,499,000	52,625,000	Nicholas I., 1826
	Kingdom of Poland	36,700	3,900,000	
	Total of the Russian Empire	5,912,000	60,000,000	[Wodxicky, 1824
	59 Republic of Cracow	373	114,000	Count Stanislaus, of
	60 Ottoman Empire	155,000	9,500,000	Mahmoud II., 1808
	Total of the Ottoman Empire	1,078,000	25,000,000	
	61 Republic of the Ionian Isles	754	176,000	Prince Anthony Comuto (President).

ASIA.

Surface 12,118,000 Geographical Sq. Miles.
Population 390,000,000 Inhabitants. ?

62	Chinese Empire	4,070,000	170,000,000	Tao Kouang, 1820
63	Empire of Japan	180,000	25,000,000	Bounoaw, 1804
64	Empire of An-nam	270,000?	14,000,000	Minh Mea, 1820
65	Kingdom of Siam	124,000?	3,000,000	Kroma Chiat, 1824
66	Birman Empire	140,000	3,500,000	Madou Tchen, 1818
67	British Indian Empire	849,650	114,430,000	
	East India Company's Territory	349,000	80,800,000	Ld. William Bentinck,
	East India Company's Dependencies	485,000	32,800,000	[1827, Gov. Gen.
	Island of Ceylon	15,650	830,000	
68	Kingdom of Sindia	29,760	4,000,000	Djunkadji Rao., 1827
69	Kingdom of Nepaul	40,000	2,500,000	Bickram Djah, 1816
70	Confederation of the Sikhs	66,000	5,500,000	Son of Runjit Sin., 1827
71	Triumvirate of Sindhy	40,000	1,000,000	Son of Mir Gholaum
72	Kingdom of Cabaul	172,000	6,500,000	[Ali, 1812
73	Confederation of the Beloutchis	110,000?	2,000,000	Mahomet, 1795
74	Kingdom of Herat (Eastern Korassan)	50,000?	1,500,000	
75	Kingdom of Persia	350,000	9,000,000	Feth Ali Schah, 1796
76	Khanate of Boukhara	173,000	2,500,000	Mir Batyr, 1827
77	Khanate of Khiva	145,000	800,000	Rhaman Kouli Khan,
78	Khanate of Khokhan	100,000?	1,000,000?	Emir Khan [1826
79	Imanate of Yemen	40,000?	2,500,000?	
80	Imanate of Mascate	39,000?	1,600,000?	Bidou Ebn Saaf, 1808
81	Ottoman Asia	556,000	12,500,000	
82	Russian Asia	4,006,000	3,445,000	
83	Portuguese Asia	3,700	500,000	
84	French Asia	400	179,000	

* 10 ships of the line, 16 frigates, 30 inferior.
† 4 ships of the line, 6 do. 37 do.
‡ 12 ships, 13 frigates, 60 inferior.
§ 4 do. 7 do. 18 do.

Capital Cities, with their Population.	Principal Religious Denominations.	Revenue. £ Sterling.	Debt. £ Sterling.	Armies.	Ships.	
Andorra, 2,000	Catholic	?	?	?		42
San Marino, 4,000	Catholic	2,800	?	40		43
Massa, 7,000	Catholic	20,000	60,000?	100		44
Modena, 27,000	Catholic	140,000		1,680		45
Monaco, 1,000	Catholic	16,000	?			46
Lucca, 22,000	Catholic	76,000	?	800		47
Parma, 30,000	Catholic	184,000	180,000	1,320		48
Florence, 80,000	Catholic	680,000		4,000		49
Turin, 114,000	Catholic	2,600,000	4,000,000?	26,000	10	50
Rome, 154,000	Catholic	1,200,000	24,000,000?	6,000	8?	51
Naples, 364,000	Catholic	3,360,000	20,000,000?	30,000	27?	52
Madrid, 201,000	Catholic	4,320,000?	160,000,000	50,000	56 *	53
Lisbon, 260,000	Catholic	2,163,840	6,400,000	26,630	47 †	54
Stockholm, 78,000	Lutheran	1,680,000	8,000,000	45,200	85 ‡	55
Copenhagen, 109,000	Lutheran	1,600,000	10,800,000	38,820	29 §	56
London, 1,350,000 [(a)	Protest., Episcopalian, Pres., Catholic	62,306,214	777,476,892	102,230	606 ‖	57
St. Petersburgh [320,000?	Greek, Catholic, Luth., Mahometan	16,000,000	52,000,000	1,039,000	130 ¶	58
Cracow, 25,000	Catholic	34,440	?	80		59
Constantinople, [600,000?	Greek, Mahometan	10,000,000	4,000,000	278,000	285 **	60
Corfu, 14,000	Greek	146,240	?	1,200	?	61
Pekin, 1,300,000?	Buddhists, disci. of Confucius, &c.	30,000,000?		914,000 1,500,000w	? ?	62
Jeddo, 1,300,000?	Lintorist, Buddhist	12,000,000		120,000	?	63
Phuxuan, 100,000?	Buddhist	3,600,000		80,000	150?	64
Bancock, 90,000?	Buddhist	1,600,000?		80,000w	?	65
New Ava, 50,000?	Buddhist	1,800,000?		150,000w	?	66
Calcutta, 500,000?	Brah., Mah., Nanekist	21,089,440	39,000,000?	210,000	18	67
Ougein, 100,000?	Brahman, Mahometan	1,040,000		20,000		68
Katmandou, 12,000?	Brahman, Boud., Lam.	520,000		17,000		69
Amretsir, 40,000	Nanekist, Brah., Mah.	2,000,000		250,000w		70
Heider Abad, 15,000	Mahometan, Brahman	520,000		50,000w		71
Cabaul, 80,000	Mahometan, Brahman	1,800,000		150,000w		72
Kelat, 20,000	Mahometan	40,000		150,000w		73
Herat, 100,000	Mahometan	320,000?		8,000		74
Teheran, 150,000	Mahometan	3,200,000		80,000		75
Boukhara, 80,000?	Mahometan	480,000		25,000		76
Khiva, 10,000	Mahometan	?		100,000w		77
Khokhan, 60,000?	Mahometan	?		100,000w		78
Szanna, 20,000	Mahometan	480,000?		5,000?		79
Mascate, 60,000	Mahometan	160,000?		1,000	34	80
Koutahich, 50,000	Mah., Armenian, Greek					81
Tobolsk, 25,000	Greek, Mah., Fetichist					82
Goa, 18,000	Catholic					83
Pondicherry, 40,000	Brahman, Catholic					84

‖ 165 ships, 117 frigates, 324 inferior. ¶ 50 do. 30 do. 50 do. ** Before the Battle of Navarino. (a) This is an *estimated* increase upon the Returns of 1821.

STATES AND TITLES.	Surface in Geogra. Sq. Miles.	Population	Reigning Sovereign, or Head of Government.
AFRICA.			
Surface 8,516,000 Geograph. Sq. Miles. Population 60,000,000 Inhabitants.?			
85 Empire of Morocco	130,000	4,500,000	Mulei Abderrahman, 1822
86 Algiers	70,000	1,500,000	Houssan, 1818
87 State of Tunis	40,000	1,800,000	Sidi Hassan, 1824
88 State of Tripoly	208,000	660,000	Yousof, 1795
89 Kingdom of Tigre	130,000	1,500,000?	
90 Kingdom of Amharra	48,000?	1,000,000?	
91 Empire of Bornou	100,000?	2,000,000?	Schumin el Kanemy
92 Empire of the Felatahs	120,000?	3,000,000?	Bello
93 Kingdom of Upper Bambarra	50,000?	1,500,000?	
94 Republic of Fouta Toro	15,000?	700,000?	
95 Empire of Ashantee	100,000?	3,000,000?	
96 Kingdom of Dahomey	40,000?	900,000?	
97 Kingdom of Benin	63,000?	1,500,000?	
98 Kingdom of Changamera	70,000?	840,000?	Changamera
99 Kingdom of Madagascar	100,000?	2,000,000?	Radama
100 Ottoman Africa	367,000	3,000,000	Mahomet-Aly, 1805
101 Portuguese Africa	389,000	1,440,000	
102 English Africa	91,000	270,000	
103 Spanish Africa	2,430	208,000	
104 French Africa	3,000?	135,000	
AMERICA, or the New World.			
Surface 11,046,000 Geograph. Sq. Miles. Population 39,000,000 Inhabitants.			
105 Empire of Brazil	2,313,000	5,000,000	Don Pedro, 1822
106 United States of North America	1,570,000	11,600,000	Andrew Jackson, 1829, President
107 United States of Mexico	1,242,000	7,500,000	Guada. Victoria, 1825, P.
108 United States of Central America	139,000	1,650,000	D. M. José Arce, 1825, P.
109 Republic of Columbia	828,000	2,800,000	Simon Bolivar, 1826, P.
110 Republic of Peru	373,000	1,700,000	José de Lamar, 1827, P.
111 Republic of Bolivia	310,000?	1,300,000	Antonio José de Sucre, 1825, Pres. [V.-P.
112 Republic of Chili	129,000	1,400,000	Franc. Ant. Pinto, 1827,
113 United States of Rio de la Plata	683,000	700,000	Manuel Dorrego, 1827 Gr.
114 Republic of Hayti	22,100	950,000	Boyer, 1820, Pres.
115 Directorate of Paraguay	67,000	259,000?	Francia, 1809, Director
116 English America	1,930,000?	2,290,000	
117 Spanish America	35,400	1,240,000	
118 French America	30,000?	240,000	
119 Danish America	324,000?	110,000	
120 American Netherlands	30,000?	114,000	
121 Russian America	370,000?	50,000	
AUSTRALASIA.			
Surface 3,100,000 Geograph. Sq. Miles. Population 20,300,000 Inhabitants.			
122 Kingdom of Siak (Sumatra)	20,000?	600,000?	
123 Kingdom of Acheen (Sumatra)	16,600?	500,000?	
124 Kingdom of Borneo	20,000?	260,000?	
125 Kingdom of Solou	11,000?	300,000?	
126 Kingdom of Mindanao	12,000?	360,000?	
127 Kingdom of Sandwich Islands	5,100	130,000	Kaukianti, 1824
128 Java, Sumatra, &c. (Dutch)	203,000	9,360,000	
129 Philippine Islands, &c. (Spanish)	39,000	2,640,000	
130 Australia, or New Holland	1,496,000	60,000	
131 Island of Timor, part of, (Portuguese)	8,000	137,000	

* 7 ships of the line, 12 frigates, 19 inferior.

Capital Cities, with their Population.	Principal Religious Denominations.	Revenue. £ Sterling.	Debt. £ Sterling.	Armies.	Ships.	
Mequinez, 70,000 .	Mahometan . .	880,000	. .	36,000	15	85
Algiers, 50,000 . .	Mahometan . .	160,000	. .	20,000	25	86
Tunis, 100,000 . .	Mahometan . .	280,000	. .	6,000	18	87
Tripoli, 15,000 . .	Mahometan . .	80,000	. .	4,000	17	88
Chelicut, 8,000? .	Copt . . .	. .	. .	48,000	. .	89
Gondar, 40,000? .	Copt . . .	. .	. .	25,000	. .	90
Bornou, 30,000 . .	Fetichist, Mahometan	. .	. .	70,000	. .	91
Sakkatou, 80,000? .	Fetichist, Mahometan	. .	. .	100,000	. .	92
Sego, 30,000 . .	Mahometan, Fetichist	. .	. .	. .	. .	93
Tjiloga?, 4,000? .	Mahometan, Fetichist	. .	. .	. .	. .	94
Coumassie, 15,000 .	Fetichist . .	. .	. .	100,000	. .	95
Abomey, 24,000 .	Fetichist . .	. .	. .	30,000	. .	96
Benin, 60,000? . .	Fetichist . .	. .	. .	50,000	. .	97
Zimbaoe, . . .	Fetichist . .	. .	. .	30,000	. .	98
Emirne, 30,000 .	Fetichist, Mahometan	. .	. .	30,000	. .	99
Cairo, 260,000 . .	Mahometan . .	. .	. .	. .	. .	100
St. Paul de Loanda	Fetichist, Catholic .	. .	. .	. .	. .	101
The Cape, 18,000 .	Calvinist, Cath., Ch. of England, Fetichist	. .	. .	. .	. .	102
Ceuta, 7,000 . .	Catholic . .	. .	. .	. .	. .	103
Fort St. Louis, 10,000	Mahometan, Catholic	. .	. .	. .	. .	104
[140,000?						
Rio de Janeiro,	Catholic . .	2,500,000	9,320,000	30,000	101	105
Washington, 15,000 [(a)	Congregational, Pres., Ep., Lu., Cath., Meth.	5,539,600	15,836,000	5,779	38 *	106
Mexico, 180,000 .	Catholic . .	2,950,280	20,340,000	22,750	16	107
New Guatem., 40,000	Catholic . .	400,000	380,000	3,500	2	108
Bogotá, 30,000 .	Catholic . .	1,712,000	9,160,000	32,370	17	109
Lima, 80,000 . .	Catholic . .	1,200,000	5,899,520	7,500	7	110
La Plata, 25,000? .	Catholic . .	440,000	640,000	?	. .	111
Santiago, 60,000 .	Catholic . .	600,000	6,440,000	8,000	6	112
Buenos Ayres, 80,000	Catholic . .	600,000	5,360,000	10,000	16	113
Port-au-Prin., 30,000	Catholic . .	1,200,000	6,000,000	45,000	6	114
Assumption, 12,000?	Catholic . .	200,000	. .	5,000	2	115
Quebec, 22,000 .	Ch. of Eng., Cal., Cath.	. .	. .	. .	. .	116
Havannah, 130,000	Catholic . .	. .	. .	. .	. .	117
Fort-Royal, 9,000 .	Catholic . .	. .	. .	. .	. .	118
Reikiavik, 500 . .	Lutheran . .	. .	. .	. .	. .	119
Paramaribo, 20,000	Calvinist . .	. .	. .	. .	. .	120
St. Paul, 600 . .	Fetichist . .	. .	. .	. .	. .	121
Siak, 8000? [15,000?	Mahometan . .	. .	. .	. .	. .	122
Telosancaouay,	Mahometan . .	. .	. .	. .	. .	123
Borneo, 15,000? .	Mahometan . .	. .	. .	. .	. .	124
Bevan, 6,000 . .	Mahometan . .	. .	. .	. .	. .	125
Selangan, 10,000 .	Mahometan . .	. .	. .	. .	. .	126
Hanarura, 6,000? .	Fetichist, Methodist	. .	. .	. .	11?	127
Batavia, 46,000 .	Mahometan . .	. .	. .	. .	. .	128
Manilla, 140,000 .	Catholic, Mahometan	. .	. .	. .	. .	129
Sydney, 10,000 . .	Ch. of En., Pres., Cath.	. .	. .	. .	. .	130
Dille, 2,000 , .	Catholic, Fetichist .	. .	. .	. .	. .	131

(a) Washington is the seat of Government in the United States, and is therefore the nominal Capital. The Capitals of several of the individual States are superior in population and importance.

XXII. TOTAL POPULATION OF THE EARTH.

A SUMMARY of the preceding table gives the following results for the surface of the habitable globe (in geographical square miles), and the amount of population.

	Surface.	Inhabitants.
Europe	2,793,000	227,700,000
Asia	12,118,000	390,000,000
Africa	8,516,000	60,000,000
America	11,046,000	39,000,000
Australasia	3,100,000	20,300,000
Total	37,573,000	737,000,000

XXIII. INHABITANTS OF THE EARTH, DIVIDED ACCORDING TO THEIR RELIGIOUS BELIEF.

The two following estimates are according to the geographers, Malte-Brun and Hassel.

	Malte-Brun.	Hassel.
Catholics	116,000,000	134,000,000
Greek Church	70,000,000	62,000,000
Protestants	42,000,000	55,000,000
Total of Christians	228,000,000	251,000,000
Jews	4,000,000	3,000,000
Mahometans	100,000,000	120,000,000
Pagans	310,000,000	550,000,000
Total of Inhabitants of the Globe	642,000,000	924,000,000

XXIV. INCREASE OF THE INHABITANTS OF EUROPE.

[*Abridged from Mr. Jacob's Corn Report.*]

RUSSIA.

THE accounts of the population of Russia, which are the most to be relied upon, comprehend only a part (though the greatest part) of the inhabitants of that extended empire. The Synod of the Orthodox Greek Church publish each year the number of Marriages, Births, and Deaths in the year preceding. The following it a comparison of those lists for the years 1820 and 1826—at which former year the empire had attained its present extended limits :—

Year.	Marriages.	Births.	Deaths.	Increase.
1820	317,805	1,570,399	917,680	652,719
1826	384,787	1,645,023	1,194,637	450,386

It is difficult to account for the lesser increase in 1826 than in 1820, unless it be attributed to the great difference in fertility between the respective years. The years 1819 and 1820 were highly productive in the east of Europe—that of 1825 rather less so—and that of 1826 was, in all the sandy districts, from the great drought that prevailed, very deficient. These years, however, may be taken as the standard of annual increase: thus the excess of births over deaths consists of 551,552 souls; this comprehends only the increase in the greater religious sect over whom the Synod presides. When the whole population in 1806 amounted to 41,252,000 persons, the excess of births over deaths, as published by the Synod, was 542,701. Since that year, countries have been added to the empire whose inhabitants did not profess the Orthodox Greek Religion, and are therefore not noticed in the annual reports of the Synod. Amongst these may be classed Finland, whose inhabitants are Lutherans; Bialystock, where they are either Catholics, or Heterodox Greeks; Caucasus provinces, where the majority are Mahometans and Jews; and Poland, where they are mostly Catholics and Jews:—the proportion which those of the dissident sects bear to the Orthodox Church, is estimated as 2 to 7. At this ratio, the annual increase of the population of Russia must be at the rate of 697,758 persons, exclusive of the inhabitants of the Asiatic provinces of Russia, who bear to those in the European provinces the proportion of 2 to 11. Thus, for the annual increase of the whole empire of 697,758 persons, must be subtracted two-elevenths, or 98,673, leaving, as yearly augmentation, by the excess of births over deaths in European Russia, 598,085. Thus, from 1815 to the present time, averaging 600,000 for twelve years (being a few months short of the real time), we may, without fear of any material error, assume the population of European Russia to have increased about seven millions. In Russia, the increase seems to depend less on the increased number of births than on the more extended length of life. In the returns of the Synod, the deaths of persons above a hundred years old appear to have been, in the year

1806 . . .	293
1810 . . .	350
1816 . . .	689
1820 . . .	807
1826 . . .	1054

PRUSSIA.

By the official papers of Prussia, whose accuracy in its statistical communications cannot be surpassed, we learn that in the ten years, from 1817 to 1827, the increase amounted to 1,849,561, at which rate the inhabitants would double themselves in little more than thirty-six years. This is the most extraordinary instance of increase in any old-settled country.

SWEDEN, DENMARK, AND NORWAY.

In Sweden, Denmark, and Norway, population is making rapid advances. In a brief account respecting the increase in Sweden, extracted from the "Révue Encyclopédique" for March, 1825, the excess of births above deaths, in 1823, is stated to be 42,205.—Denmark has increased at the rate of two per cent., and Sweden and Norway may be estimated at two thirds of that proportion. Assuming this estimate, the increase in Denmark being taken at 20,000, and that of Sweden and Norway at 40,000, for each year, from the peace of 1815 to the end of 1827, the increase will have been 720,000. (The other dominions of Denmark will be viewed as a part of Germany.)

AUSTRIA.

In determining the increase of the population in the dominions of Austria, there is some difficulty, arising from the different periods when the number of inhabitants was ascertained in the several provinces. Thus, in the archduchy of Austria, in the provinces on the Ens and the Steyermark, the census is dated from 1815—in Illyria, from 1818—in the Tyrol, from 1806—in Gallicia and Moravia, from 1818—in Hungary, from 1794—in Siebenburgen, from 1794—in the military frontier, from 1815—in Temeswar, from 1814—and in the kingdom of Venetian Lombardy, from 1815. The aggregate number taken from these returns, as enumerated by Baron Lichtenstein, in 1820, amounted to 29,699,724 individuals. According to the local returns, as published by the Geographical Board of Vienna in 1822, edited by Colonel Fallon, and framed in the preceding year, the rate of the increase of population appears to be as follows:—

In Hungary and Siebenburgen . .	$1\frac{45}{100}$ annually.
In Austria Proper, the Steyermark, and Siebenburgen	$2\frac{35}{100}$ do.
Bohemia, Gallicia, Illyria, and Moravia .	$2\frac{32}{100}$ do.
Dalmatia, Tyrol, and Venetian Lombardy .	$2\frac{12}{100}$ do.

This statement gives as a result an increase, in twelve years, on the population of 1815, calculated at 27,000,000, of more than twenty-seven per cent., in fact, nearly 7,000,000. Different authorities agree, up to the year 1821, in a rate of increase which, if continued to 1828, would make that increase more than 7,000,000.

GERMANY.

Those parts of Germany which are comprehended in neither the Austrian empire nor the Prussian kingdom, contained, at the time of the Congress of Vienna, a population of 13,600,000. By exact returns, for a series of years, from each Province in Hanover, is shown an increase, in ten years, at the rate of twelve per cent., or somewhat more than fourteen per cent. in the twelve years since the peace. By official statements we learn the inhabitants of Bavaria amounted, in 1821, to 3,743,330, and in 1826, to 4,301,004. An official account from the Grand Duchy of Baden, states the population, in 1822, as 1,090,910, and in 1826, as 1,145,357, showing an increase at the rate of one and forty-eight one-hundredths annually. From the best works describing the States of Saxony, Wirtemberg, Hesse Cassel, Hesse Darmstadt, Nassau, and the smaller sovereignties, and from oral information, the increase of population in these states may be rated much below that of Austria and of Prussia, and nearer that of Baden; taking it at the rate of seventeen and a half per cent. in the twelve years since the peace, the increase in the portions of Germany under consideration may be assumed at 2,400,000 at the present time.

SWITZERLAND.

By a census taken in Switzerland, in 1821, the inhabitants were found to be 1,783,231; and in 1827 they were 2,037,030, showing an increase in six years, of 253,799. The whole augmentation, during the twelve years of peace, may therefore be estimated at 500,000.

NETHERLANDS.

In the kingdom of the Netherlands a census is taken every five years, and at the end of each intermediate year the births are added and the deaths subtracted, which is adjusted by the enumerations of the fifth years. By an account printed for the information of the legislature, it is seen that the population, which, Jan. 1, 1815, was 5,424,502, had advanced, by Jan. 1, 1825, to 6,013,478; and adding for the three years to Jan. 1, 1828, at the same rate, the increase since the peace is shown to be 760,000.

FRANCE.

The state of the population of France, according to a recent work by Baron Dupin, in point of increase, has been slower than in other parts of Europe. According to his statement. France contains 31,000,000 of inhabitants, who increase annually at the rate of 6,536 for each million: this would show an annual augmentation of 200,000, or in the twelve years since the peace, of 2,400,000 persons.

GREAT BRITAIN AND IRELAND.

The population of Great Britain, from data afforded by the three decennial enumerations of 1801, 1811, and 1821, may be taken to have increased at the rate of 200,000 in each year, from 1815 to 1827; or, in the period since the peace, to 2,400,000. In 1821, according to the goverment estimate, the population of Ireland amounted to 6,800,000, since which, it is believed, the increase has been equal to the proportion which has been ascertained to have taken place in Great Britain—the one island, in 1821, containing 14,391,631 inhabitants, and the other 6,801,827. Thus the increase of the United Kingdom, since 1815, appears to be 3,500,000.

ITALY.

The estimate of the increase of inhabitants in Northern Italy is comprehended in that of the dominions of Austria, as far as the territories of that empire extend in it. In the dominions of the King of Naples, according to the official statements (to be found in Dupin) in 1817, the population amounted to 6,828,558. Dupin gives for the annual rate of increase 11,111 for each million, which would amount to 75,850 yearly, or for the twelve years since 1815, to 900,000. The middle of Italy, comprehending Sardinia, the Popedom, Tuscany, Modena, Parma, Lucca, and the Islands, contained, in 1817, 8,859,000 inhabitants. The rate of increase in those states has probably corresponded with that of Naples; consequently they have received an augmentation of 1,200,000.

SPAIN.

By Ancillon's work, published in 1809, the population of Spain is shown to be increasing, and, notwithstanding the internal disastrous occurrences in that country, it is more than probable some slight increase takes place.

PORTUGAL.

According to Balbi, in his "Essai Statistique sur le R. de Portugal et d'Algarve," published in 1822, a progress appears

up to that period. The lists are very imperfect, but it appears that in the years 1815, 16, 17, 18, 19, the excess of births above deaths, and the proportion of both to the whole number of the people, is such as to show a great but uncertain rate of increase.

TURKEY IN EUROPE.

Of the population of Turkey nothing is known, Its European territory is stated to contain 7,000,000 of inhabitants; no improbable estimation, considering what is known of Portugal; it is rational to presume that this country has, in fifteen years, increased five per cent., or one million.

From the statement here exhibited, it appears that the inhabitants of Europe have, within the period that has elapsed since the general peace, been augmented by the number of twenty-eight or twenty-nine millions.

XXV. COMPARATIVE ESTIMATE OF THE AMOUNT OF ANIMATE AND INANIMATE FORCE APPLIED TO AGRICULTURE AND THE ARTS IN FRANCE AND GREAT BRITAIN.

[*Abridged from M. Charles Dupin's Work on the Productive and Commercial Forces of France.*]

Various modes have been adopted for estimating the strength of a nation. Riches, number of population, extent of territory, and military force, have been reckoned among the chief elements of a nation's power. These are subject, however, to so many modifications from other causes, that they can hardly be taken separately into the account. The three great branches of human industry in civilized countries, are agriculture, manufactures, and commerce; and a nation is strong in proportion as these are prosecuted with success. This principle may be illustrated by a brief parallel between the productive force of France and Great Britain.

The 31,800,000 inhabitants which now constitute the population of France, are equivalent to a power of 12,609,057 individuals of the male sex, at the age of full vigor. It is a position generally admitted in France, that two-thirds of the population are employed in agriculture; and that a third only is occupied in manufacturing and commercial pursuits. Hence it results that France possesses

A human agricultural power equivalent to that of	8,406,038 laboring men,
And a power of industry, manufacturing and commercial, equal to	4,203,019
Total	12,609,057

Were it not that the industry of man has found the means of calling extraneous force to its aid, its means would be confined to the amount of power above enumerated: but man employs other forces than his own in agricultural labors, and principally that of the horse, of the ass, of the mule, the ox, and the cow; and with the help of these, the animate agricultural force of France has increased to the following sum:—

Human race .	21,056,667	equivalent to	8,406,038 effective laborers.
Horses	1,600,000		11,200,000
Oxen and cows .	6,973,000		17,432,000
Asses	240,000		240,000
		Total	37,278,038

On making similar calculations of the agricultural force of Great Britain, and stating at 15,000,000, the number of inhabitants of England and Scotland, of whom a third only are employed in agriculture, and the other two-thirds in commerce and manufactures, we shall have,

Agricultural force	2,132,446 effective working men.
Artisans of all professions . . .	4,264,893
Total	6,397,339

If we proceed in the same way with regard to Great Britain, as we have done with respect to France, and make a comparative calculation of the power in men, and the power in other animals, engaged in agriculture, we shall find,

Human race .	5,000,000	equivalent to	2,132,446 effective laborers.
Horses of full growth	1,250,000		8,750,000
Oxen, cows, &c. .	5,500,000		13,750,000
		Total	24,632,446
Ireland; approximating estimate			7,455,701
Total for the United Kingdom			32,088,147

Taking the proportion of this total force of 24,632,446 to the human force applicable to agriculture, we find it to be as 12. Whence it appears, that the agriculturists of England and Scotland have discovered the means of creating a force, twelve times the amount of their personal corporeal force, by the use they make of domestic animals; while the additional force obtained through similar means by the French agriculturists does not amount to five times their own. It is calculated that in France there are 46,000,000 hectares* of land made to

* A *hectare* contains 10,000 square metres, or 100 *ares*. An English *acre* is very nearly equal to 40 *ares*; therefore a *hectare* is about 2½ *acres*.

yield produce; so that there is an animate power equal to that of 810 laborers, for the cultivation of every thousand hectares. The total number of hectares of productive land in Great Britain is 21,643,000; so that there is an animate power equal to that of 1138 working men for every thousand hectares. The produce of the land, in the respective countries, is in proportion to the power employed respectively in its cultivation. The case is the same in regard to manufactures.

The human force in France employed in commercial and manufacturing industry, is equivalent, according to the calculations already stated, to 4,203,019 effective working men; to this power must be added that supplied by the use of horses, the number of which is computed at 300,000 employed in transport, for the saddle, in draught, &c. whereby the animate force of France is raised to 6,303,019 power of men.

The human force of Great Britain employed in commerce and manufactures, is equivalent to 4,264,893 effective men; to this power, then, must also be added the power of 250,000 animals, employed in divers works of industry. These will raise the animate force of England and Scotland to 6,014,893; to which there must be superadded the approximating value of 1,260,604 effective men for Ireland: so that the commercial and manufacturing animate power of the United Kingdom must be computed at 7,275,497 laboring men.

The comparative results of the animate forces will be as follows:—

	France.	United Kingdom.
Animate agricultural force . . .	37,278,038	32,088,147
Animate commercial and manufacturing force	6,303,019	7,275,497
Total	43,581,057	39,363,644

It thus appears, that in considering the animate forces alone, France has the advantage over Great Britain in a ratio nearly of one seventh. But if the superficial extent of the countries be considered, it will be seen, that Great Britain gives subsistence to a much larger animate force in proportion than France.

To these animate powers should be joined also, in the case of both the countries, the inanimate powers, or the force supplied by water, wind, and steam; and the whole productive and commercial manufacturing power of England and France will be ascertained.

The total number of mills in France has been computed by the French authors on statistics at 76,000, of which about 10,000 may be set down as windmills; the total force of hydraulic machines employed for forges, furnaces, and machinery

of every kind, is equal to the third part of that of the 10,000 windmills; the wind, as employed in navigation, is equivalent to the power of 3,000,000 of men; and, lastly, the steam-engines in operation in France, exceed the power of 60,000 dynames,* equivalent to the power of 480,000 working men turning a winch.

It has been calculated also, by the same writers, that besides windmills, hydraulic machines, &c., Great Britain possesses, in steam-engines alone, a moving power of at least 800,000 dynames, the effect of which is equal to the power of 6,400,000 men employed at the windlass. The commercial and manufacturing power of France is, therefore, in proportion to that of Great Britain, as follows:—

		France.	Great Britain.
	Animate force . . .	6,303,019 men power	7,275,497 men power.
Inanimate powers.	Mills & hydraulic engines	1,500,000	1,200,000
	Windmills	253,333	240,000
	Wind and Navigation .	3,000,000	12,000,000
	Steam-engines . . .	480,000	6,400,000
	Total force	11,536,352	27,115,497
	Ireland		1,002,667
	Total		28,118,164

Thus, the total of the inanimate force applied to the arts of all descriptions in France, scarcely exceeds the fourth of the same power applied to the same purposes in Great Britain; and the whole animate and inanimate power of Great Britain, applied to manufactures and commerce, is nearly treble the amount of that so applied in France. The agricultural power and the manufacturing and commercial power of the two countries bear a corresponding proportion to the total of the agricultural and manufactured produce, and their value in commerce.

By comparing the total of the forces of the two countries, we shall have

	France.	Great Britain.
Agricultural force	37,278,038	32,088,147
Commercial and manufacturing force .	11,536,352	28,118,164
Total	48,814,390	60,206,311
Deduct animate force	43,581,057	39,363,644
Inanimate force	5,233,333	20,842,667

* A dyname is equal to a thousand kilograms raised to the height of 1000 metres; eight men employed at a winch can in one day raise a thousand kilograms to the height of a thousand metres, or, in other words, can produce a dyname of labor.

If the year 1780 be assumed, and the population of France at that time be taken at 24,800,000, and that of England at 12,500,000, there will remain, by a proximate calculation, the following results.

	France.	Great Britain.
Animate force	34,583,016	27,126,572
Watermills and windmills . . .	1,209,560	1,054,460
Wind and navigation	3,000,000	3,000,000
Total	38,792,576	31,181,032

By comparing the two years it will be,

	France.	Great Britain.
1826	48,814,390	60,206,311
1780	38,792,576	31,181,032
Increase in 46 year	10,021,814	29,025,279
Mean annual increase	217,865	630,984

Hence it appears that the mean annual increase of effective force in Great Britain, for the last forty-six years, has been three times as great in England as in France.

XXVI. SOVEREIGN POWERS OF EUROPE.

Austria.

Francis I., archduke of Austria, born 12 Feb., 1768; king of Hungary and Bohemia, 1 March, 1792; emperor of Austria, 11 Aug., 1804.

Charlotte-Augusta, princess of Bavaria, empress, born 8 Feb., 1792.

Bavaria.

Louis-Charles-Augustus, born 25 Aug., 1756; king of Bavaria in 1825; married 12 Oct., 1810, to Theresa-Charlotte-Louisa-Fred.-Amelia of Saxe-Hildburghausen, born 8 July, 1792.

Denmark.

Frederic VI., king of Denmark 13 March, 1808; born 28 Jan., 1768; married 31 July, 1790, to Maria-Sophia-Frederic of Hesse-Cassel, queen of Denmark; born 28 Oct., 1767.

France.

Charles X., born at Versailles, 9 Oct., 1757; king of France and Navarre, 16 Sept., 1824.

Louis-Anthony of France (dauphin), born at Versailles, 16 Aug., 1775; married 10 June, 1799, to Maria-Theresa-Charlotte of France (dauphiness), daughter of Louis XVI.; born at Versailles 19 Dec., 1778.

Great Britain.

George IV., born 12 Aug., 1762; king of the United Kingdom of Great Britain and Ireland, and of Hanover, 29 Jan., 1820.

NETHERLANDS.

William-Frederic, born 23 Aug., 1772; king of the Netherlands 16 March, 1815; married 1 Oct., 1791, to Frederica-Wilhelmina-Louisa, of Prussia, born 18 Nov., 1774.

William-Frederic-George-Louis, prince of Orange; born 6 Dec., 1792; married 21 Feb., 1816, to the Grand Duchess Anne Polowna, sister to the emperor of Russia.

POLAND.

Nicholas Paulowitz, emperor of Russia; king of Poland 1 Dec., 1825.

PORTUGAL.

Don Miguel, born 26 Oct., 1802.

PRUSSIA.

Frederic-William III., born 3 Aug., 1770; king of Prussia 16 Nov., 1787.

Frederic-William, prince royal, born 15 Oct., 1795; married 29 Nov., 1823, to Elizabeth-Louisa, princess of Bavaria, born 12 Nov., 1801.

RUSSIA.

Nicholas Paulowitz, emperor of all the Russias, born 2 July, 1796; married, 13 July, 1817, to the Grand Duchess Alexandrina-Wilhelmina of Prussia, born 13 July, 1796.

SARDINIA.

Charles-Felix of Savoy, born 6 April, 1765; king of Sardinia 13 March, 1821; married, 7 March, 1807, to Maria-Christina-Amelia-Theresa, daughter to the king of the Two Sicilies, born 17 Jan., 1779.

SAXONY.

Frederic-Augustus, born 23 Dec., 1750; king of Saxony in Dec., 1806; married, 29 Jan., 1769, to Maria-Amelia-Augusta, sister to the king of Bavaria, queen of Saxony, born 11 May, 1750.

Maria-Augusta-Antoinette, princess royal of Saxony, born 21 June, 1782.

SPAIN.

Ferdinand VII., born 13 Oct., 1784; king of Spain and the Indies, 19 March, 1808.

SWEDEN AND NORWAY.

Charles-John, born 26 Jan., 1764; king of Sweden and Norway, 6 Feb., 1818.

Joseph-Francis-Oscar, prince royal of Sweden, born 6 July, 1799; married, 19 June, 1823, to Josephine-Maximilienne-Eugenia of Bavaria, born 14 March, 1807.

SWITZERLAND.

M. De Wiss, burgomaster of the city and republic of Zurich, president of the Federal Directory.

THE TWO SICILIES.

Francis I., born 19 Aug., 1777; king of the Two Sicilies 4 Jan., 1825; married to Maria-Isabella, sister to the king of Spain, born 5 July, 1789.

TURKEY.

Mahmoud II., born in 1784; proclaimed emperor 11 Aug., 1808.

WURTEMBURG.

William, king of Wurtemburg, 30 Oct., 1816; born 27 Sept., 1781.

Paulina-Theresa-Louisa of Wurtemburg, queen of Wurtemburg, born 11 Sept., 1800.

Charles-Frederic-Alexander, prince royal of Wurtemburg, born 6 March, 1823.

XXVII. MISCELLANEOUS STATISTICS CONCERNING GREAT BRITAIN.

1. SUMMARY and COMPARATIVE STATEMENT of the ENUMERATION of the POPULATION of GREAT BRITAIN in the YEARS 1801, 1811, and 1821.

	Population 1801.	Rate of Increase, p. Cent.	Rate of Diminution, p. Cent.	Population 1811.	Rate of Increase, p. Cent.	Rate of Diminution, p. Cent.	Population 1821.
England . .	8,331,434	14½	—	9,538,827	18	—	11,261,437
Wales . . .	541,546	13	—	611,788	17⅛	—	717,438
Scotland . .	1,599,068	13	—	1,805,688	15 15/100	—	2,093,456
	10,472,048	14	—	11,956,303	17⅜	—	14,072,331
Army, Navy, &c.	470,598	36	—	640,500	—	50	319,300
Totals .	10,942,646	15	—	12,596,803	14¼	—	14,391,631

2. GENERAL SUMMARY of HOUSES, FAMILIES, and PERSONS in GREAT BRITAIN.

	England.	Wales.	Scotland.	Army, Navy, Marines, and Seamen in Registered Vessels.	Great Britain.
Houses, Inhabited . .	1,951,973	136,183	341,474	. . .	2,429,630
,, By how many Families occupied .	2,346,717	146,706	447,960	. . .	2,941,383
,, Building . .	18,289	985	2,405	. . .	21,679
,, Uninhabited .	66,055	3,652	12,657	. . .	82,364
Families chiefly employed in Agriculture .	773,732	74,225	130,699	. . .	978,656
,, in Trade, Manufacture, or Handicraft .	1,118,295	41,680	190,264	. . .	1,350,239
,, all other Families not comprised in the Two preceding Classes	454,690	30,801	126,997	. . .	612,488
Persons, Males . . .	5,483,679	350,487	983,552	319,300	7,137,018
,, Females . .	5,777,758	366,951	1,109,904	. . .	7,254,613
Total of Persons .	11,261,437	717,438	2,093,456	319,300	14,391,631

3. TABLE of POPULATION throughout the last CENTURY.

England and Wales.

In the Year	Population.	In the Year	Population.
1700.....	5,475,000	1760.....	6,736,000
1710.....	5,240,000	1770.....	7,428,000
1720.....	5,565,000	1780.....	7,953,000
1730.....	5,796,000	1790.....	8,675,000
1740.....	6,064,000	1801.....	9,168,000
1750.....	6,467,000		

4. ACRES OF LAND IN GREAT BRITAIN.

General Statement of the Cultivated, Uncultivated, and Unprofitable Land of the United Kingdom.

	Cultivated.	Uncultivated Wastes capable of Improvement.	Unprofitable.	Total.
	ACRES.	ACRES.	ACRES.	ACRES.
England . . .	25,632,000	3,454,000	3,256,400	32,342,400
Wales	3,117,000	530,000	1,105,000	4,752,000
Scotland . . .	5,265,000	5,950,000	8,523,930	19,738,930
Ireland	12,125,280	4,900,000	2,416,664	19,441,944
British Islands .	383,690	166,000	569,469	1,119,159
	46,522,970	15,000,000	15,871,463	77,394,433

5. CANALS.—In 1823, the total length of Canals in Great Britain, excluding those under five miles, was 2589 miles.

6. TURNPIKE ROADS.—In 1823, the total extent of Turnpike Roads in Great Britain was 24,531 miles.—Annual income, £1,214,716.—Debt £5,200,000.

XXVIII. POPULATION OF FRANCE.

THE total population of France is estimated at 31,600,000. The following table contains a summary of the births, marriages, and deaths in France from 1817 to 1825.

Year.	Births.	Marriages.	Deaths.	Increase of Population.
Total for 1817	944125	205244	748223	195902
" 1818	913855	212979	751907	161948
" 1819	987918	215088	788055	199863
" 1820	958933	208893	770706	188227
" 1821	963358	221868	751214	212144
" 1822	972796	247495	774162	198634
" 1823	964021	262020	742735	221286
" 1824	984152	231680	763606	220546
" 1825	973986	243674	798012	175974

XXIX. BOOKS PUBLISHED IN FRANCE.

Since the year 1814 very accurate accounts have been rendered of the annual productions of the French press. Compared with the increase of population, and the effective force of the nation, the multiplication of books has been remarkable. The following table, drawn up by M. Charles Dupin, exhibits the numbers of *sheets* published in France during a period of twelve years, and the principal divisions of literature and science to which they respectively appertained.

	1814.	1820.	1826.
Theology	4,974,798	7,867,609	23,268,420
Legislation . . .	1,371,568	6,326,652	18,605,495
Sciences	2,546,270	5,327,174	12,160,381
Philosophy . . .	753,185	1,185,429	3,032,191
Social Economy . .	1,634,485	1,744,246	2,097,390
Military	441,510	1,026,027	1,445,982
Fine Arts	773,099	1,202,599	1,999,560
Belles Lettres . .	13,352,920	20,436,803	27,704,971
History, Travels, &c.	16,226,566	33,149,157	46,545,727
Miscellaneous . .	3,600,648	2,121,251	7,699,977
Total . . .	45,675,039	80,921,302	144,561,094

It appears, that the subjects upon which there has been the greatest increase are theology, legislation, the sciences, philosophy, history, and travels. The highest ratio of increase is in legislation.

From the invention of printing to the year 1814, a space of 375 years, the press had obtained the power of producing annually 45,675,039 *sheets*. From 1814 to 1826, a period of 12 years, the increase was 98,886,055 sheets. That is, in these *twelve* years the increase of publications was more than double what it had been during the *three hundred and seventy-five years preceding*.

In the year 1825 the number of volumes printed was 13,767,723, allowing ten sheets and a half on an average to a volume. This was a little more than a volume to each reader in France, as it is estimated that there were at that time twelve millions of persons who could read.

The above table and calculations do not embrace the results of the periodical press, either in journals or newspapers. The estimate of these are, for

1820	28,509,533 sheets.
1826	26,420,520
	2,089,013

This shows a diminution of periodical publications of more than 2,000,000 of sheets in six years only. In 1820 for a million of sheets published on religion, the sciences, belles-lettres, and the arts, there were 352,313 issued from the periodical press; in 1826 for a million of sheets on the same subjects, there were only 182,764 periodical.

M. Dupin supposes this diminution of periodical publications to be owing to two causes; first, their dearness; and secondly, the circumstance of their being burdened with a heavy tax. The subscription price of a daily newspaper in Paris is about sixteen dollars a year.

The extraordinary increase of publications not periodical, within twelve years, he thinks is also to be ascribed to two causes; first, the people who read have more time than formerly to devote to that occupation; secondly, the number of readers is much augmented.

It was stated in a late publication, that a hundred thousand copies of the entire works of Voltaire and Rousseau had been published during the last twelve years in France, in addition to innumerable copies of separate treatises of both authors.

By a recent French paper, it appears, that the following is the present state of the periodical press in France.

There are now in Paris 152 Journals, literary, scientific, and religious, and 17 political,—in all 169. Of these papers 151 are constitutional, or, as they are called, liberal—the 18 others being more monarchical in their spirit. The 151 Constitutional Journals have, it is stated, 197,000 subscribers, 1,500,000 readers, and produce an incone of 1,155,200 francs; the 18 others have 21,000 subscribers, 192,000 readers, with an income of 437,000 francs. The number of subscribers to the ten principal papers is as follows;—*Le Moniteur*, the official paper, from 2500 to 4000 subscribers, principally public functionaries. *Le Constitutionnel*, 18,000 to 20,000 subscribers. *Journal des Debats*, 13,000 to 14,000. *Quotidienne*, 5000 subscribers. *Courrier Français*, 4500. *Journal du Commerce*, 3500. *Gazette de France*, 7,000. *Messager des Chambres*. This paper, which, since the accession of the Polignac Ministry, seems to have taken up liberal ideas, has 2,500 subscribers. *Tribune des Départemens*, a new paper, 100 subscribers. *Nouveau Journal de Paris*, 1000 to 1500 subscribers. These are all published in the capital; those printed in the provinces it calculates at 75 journals, exclusive of papers of advertisements, and Ministerial bulletins. Of these, 66 are constitutional, supported only by their subscribers of the same way of thinking. One, the *Mémorial de Toulouse*,

is supported by the Archbishop of that diocese ; four are, it is asserted, paid from the secret funds of the Jesuits ; the other four are described as monarchical, but of little influence. With respect to the state of public opinion in France, it averages, according to the same authority, among one hundred electors in one college, twenty-five revocable public functionaries, four judges, five advocates, four attorneys, six notaries, three physicians, ten merchants, and forty-three persons of no distinct profession. These latter give forty votes to constitutional candidates ; and with eight merchants, two physicians, four notaries, one attorney, two advocates, three judges and revocable functionaries, make in all sixty constitutional votes out of the one hundred.

XXX. RUSSIAN ARMY.

There seems to be no public return, from which a precise knowledge of this subject can be obtained. The following summary, from a recent account of Russia, exhibits as accurate a statement as can be made.

Hassel reckoned the Russian army at 558,120 men, to which has been added, since 1806, a national guard, or militia, of 612,000 men, making an efficient force of 1,170,120.

Cromé made the land forces 639,415 in time of war. This was the number said to have been in the army in 1811. After alluding to the 612,000 militia, Cromé says Russia can defend herself with more than 1,200,000 warriors.

For a few years past the Russian army has generally been reckoned at a million of men, though the officers themselves vary in their accounts, some estimating it as low as 800,000, and others as high as 1,200,000.

The population of Russia in 1816, according to Hassel, amounted to 45,526,497.

XXXI. MONEY.

The origin of the use of money, as a medium of exchange, is hidden in the remotest antiquity. Mention is often made of money in the Scriptures. Abraham paid four hundred shekels of silver for the burial place of Sarah. The shekels of silver, which were used as coin at a later day by the Jews of Palestine, had on one side Aaron's rod in blossom, with the inscription, in Hebrew characters, *Jerusalem the Holy ;* and on the other side

an impression of the vessel in which the manna was preserved in the sanctuary, with the words, *Money of Israel.* From the New Testament we learn, that, in the time of our Saviour, money was in circulation among the Jews, which bore the heads of the Cæsars.

Money was in use at Argos 894 years before the Christian era. We are told that the Roman copper coins, struck in the time of Servius Tullius, were stamped with animals whose value they represented. Others contained effigies of the divinities, such as Janus and Mercury. The first silver coin was made in Rome in the 485th year from the foundation of the city, and gold coin about the 547th of the same era. On these were first engraved the features of deceased consuls. The head of Cæsar, the Dictator, was the first head of a living person, that was struck on the Roman coins.

The first money issued by the Popes was about the year 782. Before the tenth century there was no money known in Russia, either native or foreign. This medium of exchange came first to that country from Tartary. Before the fifteenth century silver was so rare in Russia, that the German historian, John de Müller, speaks of towns that were bought for five crowns. The first silver money coined in Russia was in 1485. Rubles were first coined there in 1634.

The first name of a Doge, which appears on the Venetian coins, was that of Henry Dandolo, who died in the year 1205. The gold ducats, which had been struck in Italy, were the models of the Venetian pieces, called *sequins*, which appeared for the first time in Venice under the reign of the Doge, John Dandolo, who died in 1580.

The most ancient Swedish money was silver. Gold was not coined before the sixteenth century; and copper was first put in circulation by the Queen Christina. The coins of the ancient Saxon kings are much more common in Sweden, than even in England, which is accounted for from the tribute which was paid for a long time to the Danish kings by the sovereigns of Great Britain.

In England the value of money augmented 18 times from the year 1290 to 1640; and 12 times from 1530 to 1800. The value of silver has increased 30 fold since the Norman conquest. Gold and silver coin began to circulate in Scotland, A. D. 233. The first Gold coin of England was struck in 1087. In the year 1347 a pound of silver was made into 22 shillings; in 1352 it was increased to 25 shillings; in 1414 to 30; in 1505 to 40; and in 1530 to 65 shillings. Copper money was introduced into England in the year 1560. The first *Guineas* were coined

out of gold brought from the coast of Africa. The *Sovereign*, a recent English gold coin, contains 20 shillings, or a pound sterling. This term *sterling*, which is used to designate English money, it is said, was in early times applied to the Germans who lived in England, and as these Germans were much occupied in manufacturing coin, the name of the workmen was transferred to the money itself.

The most ancient money, known to have been fabricated in France, is supposed to have been struck by Theodoret, king of Metz, and grandson of Clovis, who died in 547. In some collections are found gold sous of Louis the Debonnaire. The first laws in France against counterfeit money were issued by this prince. In 987, when Hugh Capet was proclaimed king of France, there were more than 150 different kinds of money in the country. The florin was an ancient coin of Florence, upon which was represented a flower. It was introduced into France in 1068. Francis the First, in the year 1539, had a project for designating the different kinds of money by the letters of the Alphabet.

Uncivilized nations have various mediums of exchange, which answer the purpose of money. In some parts of Africa blocks of salt are used in this way, and thus become the standard of value for other articles. Small shells also circulate as money. Historians relate, that paper money was issued in China as early as A. D. 997. It was used also in Japan. In modern times it has ceased to circulate in both countries.

XXXII. THE VALUE OF MONEY IN DIFFERENT COUNTRIES OF EUROPE, ESTIMATED IN DOLLARS AND CENTS.

As the Comparative value of money in different countries is subject to slight and irregular changes, it cannot be precisely fixed for any given time. The following tables are believed to approach as near to it, as the nature of the subject will admit. The Asterisks denote, that the denomination to which they are annexed is only nominal, and not represented by any real coin. The fractional parts of the cents are decimals.

Great Britain.	$ cts.	France.	$ cts.
Farthing	00,46	Denier	00,08
Penny	01,85	Sol, or 12 deniers	00,92
Groat	07,40	Livre Tournois, or 20 sols	18,52
Shilling	22,22	Ecu, or crown, 6 livres	1 10,00
Crown, or 5 shillings	1 11,16	Pistole,* 10 livres	1 85,17
Sovereign, or pound	4 44,44	Louis d'or	4 44,44
Guinea, 21 shillings	4 66,66	Franc	18,74

	$ cts.
Five francs	93,70
SPAIN.	
Maravedie*	00,30
Rial	10
Pistarine	20
Piaster of ex*	80
Dollar	1 00
Ducat of ex*	1 10,18
Pistole	3 60
HOLLAND.	
Stiver	01,94
Scalin	11,64
Guilder, or Florin	38,80
Rix dollar	97
Ducat	2 07,86
Gold Ducat	8 00
PORTUGAL.	
Re	00,12
Vintin	02,50
Testoon	12,50
Crusade of ex	50,00
Milre*	1 25
Moidore	6 00
Joanese	8 00
ITALY.	
Soldi	00,80
Chevelet	03,18
Lire*	15,92
Testoon	23,88
Croisade	79,60
Pezzo of ex*	92,60
Genouine	1 36,12
Pistole	3 20
SWITZERLAND.	
Fenning	00,24
Cruitzer	00,92
Sol*	02,77
Gulden	55,55
Rix dollar	1 00
AUSTRIA.	
Cruitzer	00,86
Grosh	03,14
Batzen	03,44
Gould	51,85
Rix dollar	77,77
Ducat	2 07,40
SWEDEN.	
Stiver	00,72
Copper marc	02,88
Silver marc	08,64
Copper dollar	11,52
Caroline	25,92
Rix dollar	1 03,70
Ducat	2 07,40
DENMARK.	
Skilling	01,04
Duggen	06,24
Marc*	16,66
Rix marc	20,83
Rix ort	25,
Crown	66,66
Rix dollar	1 00,
Ducat	8 33,34
PRUSSIA.	
Grosh	00,86
Coustic	04,32
Tinse	12,96
Ort	15,55
Florin	25,92
Rix dollar*	77,76
Ducat	2 07,40
Frederic d'or	3 88,80
RUSSIA.	
Altin	03,
Grievener	10,
Polpotin	25,
Poltin	50,
Ruble	1 00,
Zervonitz	2 00,
TURKEY.	
Mangar	00,28
Asper*	01,12
Parac	03,33
Bestic	05,55
Estic	11,11
Solata	22,22
Piaster*	88,88
Caragrouch	1 11,10
Xeriff	2 22,20

XXXIII. REVENUES, EXPENDITURES, FINANCE, TRADE, AND MANUFACTURES OF GREAT BRITAIN.

[Abstracted from the Parliamentary Documents.]

1.—*Finance.*

AN ACCOUNT of the ORDINARY REVENUES, and EXTRAORDINARY RESOURCES, constituting the Public Income of the UNITED KINGDOM OF GREAT BRITAIN and IRELAND,

For the Year ended 5th January, 1828.

HEADS OF REVENUE.	Total Income including Balances.	Total Payments out of the Income in its progress to the Exch.	Payments into the Exchequer.
	£.	£.	£.
ORDINARY REVENUES.			
Customs	20,519,778	2,225,620	17,894,405
Excise	22,995,324	1,513,780	18,438,707
Stamps	7,298,894	191,557	6,811,226
Taxes, under the management of the Commissioners of Taxes	5,186,874	315,850	4,768,273
Post Office	2,384,138	742,404	1,463,000
One Shilling in the Pound, and Sixpence in the Pound, on Pensions and Salaries, and Four Shillings in the Pound on Pensions	66,960	1,447	62,409
Hackney Coaches, and Hawkers and Pedlars	72,631	9,765	62,689
Crown Lands	341,803	264,846	
Small branches of the King's hereditary Revenue	12,973	3,214	4,973
Surplus Fees of regulated Public Offices	65,995		65,995
Poundage Fees, Pells Fees, Casualties, Treasury fees, and Hospital Fees	9,896		9,896
Totals of Ordinary Revenues	56,955,271	5,268,486	49,581,576
*** The gross Receipt has been collected at an Average of £6 15 9 1-2 per £100.			
OTHER RESOURCES.			
Money received from the East India Company, on account of retired Pay, Pensions, &c. of His Majesty's forces, arriving in the East Indies, per Act 4 Geo. IV., c. 71	60,000		60,000
From the Commissioners for the Issue of Exchequer Bills, per Act 57 Geo. III., c. 34, for the employment of the Poor	272,877		272,877
Money received from the Trustees of Naval and Military Pensions	4,245,000		4,245,000
On account of advances made by the Treasury, for improving Post Roads, for building Gaols, for the Police, for Public Works, employment of the Poor, &c. &c.	172,983		172,983
Imprest Monies, repaid by sundry Public Accountants, and other Monies paid to the Public	378,788		378,788
Money brought from the Civil List, on account of the Clerk of the Hanaper	2,500		2,500
Repayment on account of Money advanced out of the Consolidated Fund, in the Year 1825, for silver coinage	199,634		199,634
From the Bank of England, on account of Unclaimed Dividends	19,158		19,158
	62,306,214	5,268,486	54,932,518

An ACCOUNT of the NET PUBLIC EXPENDITURE of the UNITED KINGDOM

EXPENDITURE.	NET EXPENDITURE. £. s. d.	£. s. d.
Dividends, Interest, and Management of the Public funded Debt, (exclusive of 5,704,706*l.* 13*s.* 10*d.* issued to the Commissioners for the Reduction of the National Debt,) 4 quarters, to Oct. 10, 1827	27,366,601 7 0	
Interest on Exchequer Bills	873,246 12 3	
		28,239,847 19 3
Trustees for Nav. and Mil. Pension Money, per Act 3 Geo. IV., c. 51	2,214,260 0 0	
Ditto Bank of England ditto, 4 Geo. IV., c. 22	585,740 0 0	
		2,800,000 0 0
Civil List, 4 Quars., to Jan. 5, 1828	1,057,000 0 0	
Pensions, ditto, to Oct. 10, 1827	365,908 15 11-2	
Salaries and Allowances, ditto	180,896 1 5 1-4	
Courts of Justice, ditto	148,047 8 7 1-4	
Mint, ditto	14,750 0 0	
Bounties, ditto	2,956 13 8	
Miscellaneous, ditto	245,459 9 11	
Ditto Ireland, ditto	303,199 19 0	
For the purchase of the Duke of Athol's Interest in the Public Revenues of the Isle of Man	134,200	
Advanced towards rebuild. London Bridge, per Act 7 Geo. IV., c. 40	120,000	
	254,200 0 0	
		2,472,418 7 9
Army	7,876,682 8 2 1-2	
Navy	6,414,727 4 0	
Ordnance	1,914,403 0 0	
Miscellaneous	2,863,247 19 5	
		19,069,060 11 7 1-2
Lottery Prizes	193,044 0 0	
Bank of England for Discounting and Management in the Funding of 8,000,000*l.* Exchequer Bills	36,267 1 3	
		229,311 1 3
		52,810,637 19 10 1-2
By the Commis. for issuing Exchequ. Bills, per Act 3 Geo. IV., c. 86, for the Employment of the Poor	551,900 0 0	
Advances out of the Consolidated Fund in Ireland, for Public Works	437,753 19 9	
		989,653 19 9
		53,800,291 19 7 1-2
Surplus of Income over Expenditure		1,132,226 14 2 1-2
		54,932,518 13 10

ABSTRACT of the NET PRODUCE of the REVENUE of GREAT BRITAIN, in the Years ended on the 10th of Oct. 1827, and the 10th of Oct. 1828.

	1827.	1828.	Increase.	Decrease.
Customs	£16,403,142	£16,358,170	. .	£44,972
Excise	17,210,548	17,905,978	£695,430	—
Stamps	6,349,576	6,575,318	225,742	—
Post-Office	1,436,000	1,387,000	. .	49,000
Taxes	4,756,786	4,836,464	79,678	—
Miscellaneous	676,629	556,171	. .	120,458
	46,832,631	47,619,101	1,000,850	214,430
Deduct Decrease			214,430	
Increase on the Year			786,420	. .

AN ACCOUNT of the TOTAL AMOUNT of the UNREDEEMED FUNDED DEBT, and of the charge thereof, on the 5th of Jan. 1827; of the Debt and Charge thereof created in the Year ended 5th Jan. 1828; —of the Debt and Charge thereof reduced in the course of that Year.

Total Debt on 5th Jan. 1827.	Debt.	Charge.
Great Britain . .	£752,110,232	28,994,557
Ireland . . .	31,691,506	1,177,255
	783,801,739	30,171,812
Debt created in the Year 1827.		
Great Britain . .	1,204,400	39,942
Ireland . . .	524,186	18,282
	1,728,586	58,225
Total .	£785,530,326	30,230,037

Debt reduced in the Year 1827.	Debt.	Charge.
Great Britain . .	£6,628,266	204,111
Ireland . . .	1,425,168	47,633
	8,053,434	251,745
Total Debt on 5th Jan. 1828.		
Great Britain . .	746,686,366	28,830,387
Ireland . . .	30,790,525	1,147,904
	777,476,892	29,978,292
Total .	£785,530,326	30,230,037

Note.—Besides the reduction of the Funded Debt in 1827, as above stated, there was paid within the same year, out of the Sinking Fund, to the Banks of England and Ireland, per 5 Geo. IV. c. 45, towards the discharge of the Exchequer Bills placed in their hands, for the Sums advanced by them to pay off the Proprietors of £4 per Cents. who did not assent to receive 3½ per Cents. in lieu thereof:—

Principal	£383,800
Interest	2,759
	£386,559

SUMS PAID for INTEREST on EXCHEQUER BILLS.

	Payment for one Year, to 5th Jan. 1828.			Estimated Charge upon Consolidated Fund for one Year, to 5th January, 1828.		
	£.	s.	d.	£.	s.	d.
Interest on Exchequer Bills issued upon the credit of Consolidated Fund .	71,060	7	4	72,510	2	1
Interest on Exchequer Bills issued upon the credit of Duties on Sugar, &c.	29,369	15	11	,,	,,	,,
Interest on Exchequer Bills issued upon the credit of the Aids, 1827 . . .	772,816	9	0	,,	,,	,,
	873,246	12	3	72,510	2	1

NET PRODUCE of CUSTOMS in GREAT BRITAIN.

List of Articles.	Net Produce.
Duties inwards	£16,914,657 19 11¼
" outwards	118,085 17 5¼
" coastways	822,305 5 2
	17,855,049 2 6½
Canal and Dock Duty	46,931 10 3
Duties collected at the Isle of Man	18,337 15 1¾
Remittances from the Plantations	13,365 14 5
Proceeds of Goods sold for the Duties	974 1 2¾
Rent of Legal Quays, Warehouse Rent, Wharfage, &c.	17,989 14 8½
Interest on Money advanced to the Corporation of Liverpool, for building Tobacco Warehouses	467 12 5
Principal Money repaid by them, in part of the said Loan	4,532 8 2
Repayment, by Treasury order, of duty charged on Lead, the produce of the Mines of Scotland	,, ,, ,,
Surplus Receipt, on account of Fines and Seizures, independently of Legal Expenses	5,338 7 7½
Proceeds of Surcharges, Sale of Old Stores, &c.	5,788 6 9½
Total	17,968,774 13 3½
Total of Produce of Customs in Ireland	1,976,498 7 2½

NET PRODUCE of the EXCISE in GREAT BRITAIN.

Articles.	Net Produce.
Auctions	£265,944 15 9¾
Beer	3,204,389 12 11¾
Bricks and Tiles	368,538 14 4½
Candles	485,349 17 11¼
Cider and Perry	26,837 16 5
Glass	598,033 11 1½
Hides and Skins	342,792 12 4¾
Hops	441,463 2 0
Licenses	673,096 11 8½
Malt	3,109,807 12 5¾
Paper	622,559 8 2
Printed Goods	662,141 16 1½
Soap	1,199,409 18 0¾
Spirits, British	2,834,742 8 6½
Starch	84,897 4 6
Stone Bottles	3,362 0 3
Sweets and Mead	3,472 15 10½
Tea	3,263,202 5 7¼
Vinegar	24,170 5 2¾
Wire	,, ,, ,,
Consolidated Duties	18,214,212 9 6¾
Payments on Articles on which there has not been any Receipt, viz.—	
Wine, Wire (above the Receipt) } Deduct	83 18 10¾
	18,214,128 10 8
Fines and Forfeitures	24,882 3 7½
Total	18,239,010 14 3½
Total Excise in Ireland	1,754,215 13 6¾

NET PRODUCE of STAMPS in GREAT BRITAIN.

	£.	s.	d.
Deeds, Law Proceedings, and other written instruments, (except as under)	1,901,892	1	0¾
Legacies	1,030,341	10	2
Probates, Administrations, and Testamentary Inventories	809,202	0	6
Bills of Exchange and Promissory Notes	578,654	4	5
Receipts	202,804	5	0
Newspapers & Supplements, & Papers for Advertisements	371,038	1	11
Almanacs	28,852	5	3
Medicine, and Medicine Licences	39,116	10	3½
Fire Insurances	683,940	13	6
Cards	20,563	2	6
Gold and Silver Plate, and Licenses	97,125	7	10½
Dice 1,020 0 0; Pamphlets 1,634 2 3	2,654	2	3
Advertisements	152,352	8	11
Stage Coaches	394,469	18	11¾
Post Horses	225,864	5	0
Race Horses	1,481	18	11½
Penalties in Law Proceedings and costs received	9,396	0	7
Total	6,549,748	17	2
Total of STAMPS IN IRELAND	470,757	6	10¼

NET PRODUCE of the TAXES in GREAT BRITAIN.

	£	s.	d.
Land Tax, on Lands and Tenements	1,188,428	9	9
Windows	1,151,073	17	5½
Inhabited Houses	1,266,529	9	9¼
Servants	272,234	3	11
Carriages	331,891	2	11
Horses for Riding	341,832	5	7
Other Horses and Mules	59,997	5	3
Dogs	183,161	1	0½
Horse Dealers 16,676 5 0; Hair Powder 21,129 2 6	37,805	7	6
Armorial Bearings	50,292	10	0
Game Duties	159,372	18	8
Composition Duty	31,442	18	8
Penalties on arrears, levied by Barons of Exchequer, Scot.	681	15	4
	5,074,743	5	10¼
Property Duty	8,971	5	2
Total	5,083,714	11	0¼
Total of TAXES IN IRELAND	2,226	2	7⅝

NET PRODUCE of POST OFFICE, GREAT BRITAIN.

	Net Produce. £.	s.	d.
Unpaid Letters outwards, and Paid Letters inwards, and Ship Letters, &c. charged on Country Postmasters.			
Unpaid Letters inwards, and Paid Letters outwards	1,630,891	9	7
Two Penny and Penny Post Letters	122,811	4	0½
British Postage, &c. collected in Ireland	26,767	8	4
Letters charged on the Postmasters in the Colonies	42,974	17	1
Foreign Letters	118,746	9	11
Passage Money, and Freight of Specie, by the Packets	46,095	8	7½
Miscellaneous	4,162	9	5½
Total	1,992,449	7	0½
Total of POSTAGE FOR IRELAND	197,907	16	9½

2.—*Currency.*

BANK OF ENGLAND.—Average Amount of Promissory Notes and Post Bills in circulation, for the year preceding April 6, 1828,
Weekly average . . . £21,549,318 10 0

GOLD MONIES coined from 1817 to 1827.

Year.	Denominations and Value of Gold Monies coined. Double Sovereigns.	Sovereigns.	Half Sovereigns.	Total.
1817	. . .	3,235,239	1,040,098	4,275,337
1818	. . .	2,347,230	515,143	2,862,373
1819	. . .	3,574	. . . .	3,574
1820	. . .	931,994	17,521	949,516
1821	. . .	9,405,114	115,644	9,520,758
1822	. . .	5,356,787	. . . .	5,356,787
1823	30,838	616,770	112,140	759,748
1824	1,401	3,767 904	295,769	4,065,075
1825	. . .	4,200,343	380,575	4,580,919
1826	. . .	5,724,046	172,415	5,896,461
1827	. . .	2,266,629	246,007	2,512,636
	32,240	37,855,633	2,895,314	40,783,188

SILVER COIN, coined in each Year since the commencement of the present system of Silver Coinage.

Year.	Denomination and Value of Silver Monies Coined. Crow ns	Half Crowns.	Shillings.	Sixpences.	Maundy Monies.	Total Value.
	£.	£.	£.	£.	£.	£.
1816 . .	. . .	114,048	1,306,998	384,120	85	1,805,251
1817 . .	. . .	1,011,582	1,151,568	273,042	105	2,436,297
1818 . .	38,808	363,132	67,122	107,118	99	576,279
1819 . .	170,874	598,752	379,764	117,810	72	1,267,272
1820 . .	112,068	299,574	398,772	37,224	79	847,717
1821 . .	109,494	179,388	123,156	21,582	66	433,686
1822 . .	31,232	. . .	. . .	. . .	198	31,430
1823 . .	. . .	250,470	34,650	. . .	151	285,271
1824 . .	. . .	58,212	207,900	15,840	118	282,070
1825 . .	. . .	282,348	122 958	12,078	151	417,535
1826 . .	. . .	273,636	317,592	17,226	151	608,605
1827 . .	. . .	. . .	28,710	4,158	151	33,019
1828 . . up to 14th June	. . .	1,386	9,504	396	151	11,437
	462,476	3,432,528	4,148,694	990,594	1584	9,035,876

NOTE.—The following are the *Weights of the English Coinage.*

	oz.	*dwt.*	*gr.*		*dwt.*	*gr.*
Sovereign . .	0	5	3.274	Sixpence . .	1	19 7-11ths.
Half Sovereign . .	0	2	13.637	Shilling . . .	3	15 3-11ths.
Double Sovereign .	0	10	6.549	Half-Crown .	9	2 2-11ths.
Five Sovereign . .	1	5	16.370	Crowns . . .	18	4 4-11ths.

3.—*Trade and Manufactures.*

Official Value of BRITISH and IRISH PRODUCE and MANUFACTURES, *Exported* from Great Britain, distinguishing the several Countries; together with the *Imports* into Great Britain from the same Countries.

COUNTRIES.	Year ending 5th January, 1827. Official Value of Imports into Great Britain from Foreign Parts.	Official Value of Exports from Great Britain. British and Irish Produce and Manufactures.	Foreign and Colonial Merchandise.	Total Exports.
	£.	£.	£.	£.
EUROPE:—Russia	2,935,945	1,646,051	574,827	2,220,878
Sweden	114,355	44,153	105,753	149,907
Norway	63,788	63,350	35,124	98,474
Denmark	453,225	132,413	63,999	196,413
Prussia	1,007,051	156,286	411,415	567,701
Germany	1,591,978	6,521,686	2,352,155	8,873,842
United Netherlands	1,396,292	2,631,799	2,326,092	4,957,891
France	1,225,704	426,195	656,077	1,082,272
Portugal, Azores, & Madeira	508,846	2,041,920	104,513	2,146,434
Spain, and the Canaries	551,218	334,423	229,226	563,660
Gibraltar	40,498	1,376,624	199,039	1,575,663
Italy	625,416	3,222,275	965,039	4,187,315
Malta	29,490	350,581	75,105	425,686
Ionian Islands	93,402	22,451	1,979	24,430
Turkey, and the Levant	818,516	1,104,897	67,589	1,172,486
Isles of Guernsey, Jersey, Alderney, and Man	191,236	258,588	94,648	353,236
	11,646,967	20,333,698	8,262,596	28,596,295
ASIA:—East Indies and China	8,002,786	4,240,424	636,700	4,877,125
N. Holland & S. Sea Islands	83,552	208,297	61,232	269,529
AFRICA:—Cape of Good Hope	151,342	171,823	22,792	194,615
Other parts of Africa	218,904	155,450	138,577	294,027
AMERICA:—British Northern Colonies	974,823	1,339,343	310,975	1,650,318
British West Indies	7,782,135	3,538,651	253,756	3,792,408
Foreign West Indies	602,484	867,083	63,176	930,259
United States	4,984,647	5,114,608	147,583	5,262,191
Brazil	767,918	2,556,139	37,590	2,593,730
Mexico	101,380	610,155	58,259	668,415
Columbia	21,504	293,205	27,154	320,360
Peru	31,839	190,505	20,361	210,867
Chili	75,377	297,884	17,935	315,820
B. Ayres & Monte Video	265,629	415,582	6,317	421,900
The Whale Fisheries	327,656	. . .	1,489	1,489
Total	36,038,951	40,332,854	10,066,502	50,399,356
Total of Imports and Exports from *Ireland*	1,420,027	942,832	24,480	967,312

Value of the IMPORTS into, and of the EXPORTS from the *United Kingdom* of Great Britain and Ireland, during each of the three years ending the 5th January, 1828; calculated at the Official Rates of Valuation.

Years ending 5th January.	Value of Imports into the United Kingdom, calculated at the Official Rates of Valuation.	Value of Exports from the United Kingdom, calculated at the Official Rates of Valuation.			Value of the Produce and Manufactures of the United Kingdom, Exported therefrom, according to the real or declared value thereof
		Produce and Manufactures of the United Kingdom.	Foreign and Colonial Merchandise.	Total Exports.	
	£.	£.	£.	£.	£.
1826 . .	44,208,807	47,150,689	9,169,494	56,320,184	38,870,945
1827 . .	37,686,113	40,965,735	10,076,286	51,042.022	31,536,723
1828 . .	44,887,774	52,219,280	9,830,728	62,050,008	37,182,857

Number of VESSELS entered Inwards, and cleared Outwards, at the several Ports of the *United Kingdom*, during the three years ending 5th January, 1828.

	Years ending 5th Jan.	British and Irish Vessels.			Foreign Vessels.			Total.		
		Vessels.	Tons.	Men.	Vessels.	Tons.	Men.	Vessels.	Tons.	Men.
Entered Inwards.	1826	13,503	2,143,317	123,028	6,981	959,312	52,722	20,484	3,102,629	175,750
	1827	12,473	1,950,630	113 093	5,729	694,116	39,838	18,202	2,644,746	152,931
	1828	13,133	2,086,898	118,680	6,046	751,864	43,536	19,179	2,838,762	162,216
Cleared Outwards.	1826	10,843	1,793,842	109,657	6,085	906,066	47,535	16,928	2,699,908	157,192
	1827	10,844	1,737,425	105,198	5,410	692,440	37,305	16,254	2,429,865	142,503
	1828	11,481	1,887,682	112,385	5,714	767,821	41,598	17,195	2,655,503	153,983

Number of VESSELS that belonged to the Ports of the British Empire, on the 31st December, 1825, 1826, and 1827, respectively.

	On the 31st Dec. 1825.			On the 31st Dec. 1826.			On the 31st Dec. 1827.		
	Vess.	Tons.	Men.	Vess.	Tons.	Men.	Vess.	Tons.	Men.
U. Kingdom	20,087	2,298,836	146,703	20,469	2,382,069	149,894	19,035	2,150,605	130,494
Is. Guernsey Jers. & Man	508	28,505	3,773	499	29,392	3,665	489	30,533	3,701
Brit. Planta.	3,579	214,875	15,059	3,657	224,183	14,077	3,675	279,362	17,220
Total . .	24,174	2,542,216	165,535	24,625	2,635,644	167,636	23,199	2,460,500	151,415

Tonnage and Number of Men employed in the COASTING TRADE of the United Kingdom, for the years ending 5th January; including the Cross Channel Trade between Great Britain and Ireland.

Years.	Inwards.		Outwards.	
	Tonnage.	Men.	Tonnage.	Men.
1826 . .	8,408,211 . .	493,411 . .	8,269,399 . .	484,909
1827 . .	8,466,255 . .	488,038 . .	8,791,062 . .	513,959
1828 . .	8,329,099 . .	504,626 . .	8,777,921 . .	513,109

Number of SHIPS, specifying their TONNAGE, which have entered the Port of London, in the Years 1823, 24, 25, 26, and 1827.

	Foreign Trade.				Coasters.	
	British.		Foreign.		British.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
In the Year 1823 .	3,031	611,451	865	161,705	18,079	2,195,250
1824 .	3,132	607,106	1,643	264,098	18,843	2,298,982
1825 .	3,989	758,565	1,743	302,122	19,527	2,360,626
1826 .	3,495	675,026	1,586	215,254	20,439	2,441,746
1827 .	4,012	769,102	1,534	221,008	17,677	2,226,040

Number of VESSELS Built and Registered in the British Empire, in the Years ending 5th January, 1826, 1827, and 1828.

In the Years ending the 5th January,	1826.		1827.		1828.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
United Kingdom . .	975	122,479	1,115	118,363	894	93,144
Is. Guerns. Jers. & Man	28	1,550	24	2,171	17	1,894
British Plantations .	536	80,895	580	86,554	374	50,771
Total . .	1,539	204,924	1,719	207,088	1,285	145,809

NOTE.—From 1814 to 1827, 272 Steam Vessels were built and registered.

Number of Gallons of SPIRITS manufactured in the United Kingdom, for Home Consumption, with the amount of duty thereon, for the three Years preceding the 5th January, 1828.

ENGLAND.

Year ended	Made in England.	Imported from Scotland.	Imported from Ireland.	Total paid Duty for H. Consump.	Amount of Duty.
	Imp. Galls.	Imp. Galls.	Imp. Galls.	Imp. Galls.	£.
Jan. 5, 1826 .	1,910,822	953,292	579,439	3,443,554	2,055,027
" 5, 1827 .	3,209,044	3,365,982	832,178	7,407,204	2,592,521
" 5, 1828 .	3,451.620	2,548,118	671,822	6,671,562	2,335,046

Year ended	SCOTLAND.		IRELAND.	
	Home Consumption.	Amount of Duty.	Home Consumption.	Amount of Duty.
	Imp. Galls.	£.	Imp. Galls.	£.
Jan. 5, 1826 .	5,981,549	717,977	9,262,743	1,111,825
" 5, 1827 .	3,988,788	565,078	6,837,408	967,998
" 5, 1828 .	4,752,199	673,228	8,260,919	1,170,233

*** Total Amount of Duty for the United Kingdom, for 1827–8, £4,187,442.

GRAIN.—Average Prices per Quarter, in England and Wales, in each Month of the Year 1827.

1827.	Wheat. Per Qr.		Barley. Per Qr.		Oats. Per Qr.		Rye. Per Qr.		Beans. Per Qr.		Peas. Per Qr.	
	s.	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*
January . .	55	1	36	0	28	8	40	10	47	3	50	0
February . .	55	3	38	1	29	2	40	6	48	6	50	3
March	57	4	38	3	31	3	39	2	49	10	51	4
April	57	11	39	4	31	4	41	2	48	9	49	1
May	58	4	40	8	31	3	41	3	49	8	49	2
June	59	10	41	8	29	5	43	10	51	8	49	9
July	61	9	41	8	29	4	44	9	51	8	50	1
August . . .	59	10	37	0	27	1	39	0	50	1	43	5
September. .	56	9	33	0	24	3	34	9	45	9	44	3
October . . .	52	9	30	4	22	10	32	2	42	4	47	0
November. .	52	8	31	5	22	2	34	7	43	3	45	10
December . .	52	0	30	8	22	1	32	9	42	0	44	0

ANNUAL AVERAGE PRICES of WHEAT, from 1792 to 1827.

	s.	*d.*		*s.*	*d.*		*s.*	*d.*
1792 ...	42	11	1804 ...	60	1	1816 ...	76	2
1793 ...	48	11	1805 ...	87	10	1817 ...	94	0
1794 ...	51	8	1806 ...	79	0	1818 ...	83	5
1795 ...	74	2	1807 ...	73	3	1819 ...	72	3
1796 ...	77	2	1808 ...	79	0	1820 ...	65	10
1797 ...	53	1	1809 ...	95	7	1821 ...	54	5
1798 ...	50	3	1810 ...	106	2	1822 ...	43	3
1799 ...	67	6	1811 ...	94	6	1823 ...	57	9
1800 ...	113	7	1812 ...	125	5	1824 ...	62	0
1801 ...	118	3	1813 ...	106	6	1825 ...	66	6
1802 ...	67	5	1814 ...	72	1	1826 ...	56	11
1803 ...	56	6	1815 ...	63	8	1827 ...	56	7½

PART V.

STATISTICAL AND OTHER INTELLIGENCE RESPECTING THE UNITED STATES.

XXXIV. COLONIAL STATISTICS.

LITTLE is known of the Statistics of the English colonies in America before the Revolution. No regular census was ever taken, nor was the population numbered, except, perhaps, in particular towns and districts for the purpose of apportioning the soldiers, that were to be raised in the wars with the Indians. No account was kept of the articles of produce, or of the state of agriculture, manufactures, and commerce. The valuation of property for taxation was imperfect, as the people were thinly scattered over a wide space, and occupied in subduing the forests and procuring the immediate means of subsistence. As there was no concert among the colonies in regard to commerce, the custom-house records were not published, nor do they appear to have been preserved in many places. The only information to be obtained on this subject is from the custom-house books in England.

Mr. Pitkin and Dr. Holmes have collected a few particulars, in regard to the colonial statistics, which give some insight into the progress of the population and commerce before the Revolution. The following statements and tables are taken chiefly from these authors.

1. POPULATION OF THE AMERICAN COLONIES IN 1701.

	Souls.		Souls.
Massachusetts . . .	70,000	New York	30,000
Connecticut	30,000	E. & W. Jersey . .	15,000
Rhode Island . . .	10,000	Pennsylvania . . .	20,000
New Hampshire . .	10,000	Maryland	25,000
		Virginia	40,000
New England . . .	120,000	North Carolina . . .	5,000
Middle & So. Colonies	142,000	South Carolina . . .	7,000
Total	262,000		142,000

2. POPULATION OF THE COLONIES IN 1749.

New Hampshire	30,000	Pennsylvania, Delaware	250,000
Massachusetts	220,000	Maryland	85,000
Rhode Island	35,000	Virginia	85,000
Connecticut	100,000	North Carolina	45,000
New York	100,000	South Carolina	30,000
E. & W. Jersey	60,000	Georgia	6,000

3. POPULATION OF THE PRINCIPAL CITIES.

New York.		Boston.	
1731	8,620	1722	10,567
1756	10,381	1765	15,520
1773	21,876	1790	18,038
1786	23,614		
1790	33,131	Baltimore.	
		1790	13,758
Philadelphia.			
1731	12,000	Charleston.	
1753	18,000	1790	16,349
1790	43,525		

4. COMMERCE OF THE BRITISH AMERICAN COLONIES.

Value of Imports and Exports to and from Great Britain and her American Colonies.

The first year is from 25 December 1700 to 25 December 1701; and the succeeding years are correspondent.

1701.

Colonies.	Imports to G. Britain. £.	s.	d.	Exports from G. Britain. £.	s.	d.
Carolina	16,973	6	3	13,908	8	3¾
New England	32,656	7	2	86,322	13	11¼
New York	18,547	3	6	31,910	6	6¾
Pennsylvania	5,220	6	3	12,003	16	10
Virginia & Maryland	235,738	18	4½	199,683	2	3¼
Total	309,136	1	6½	343,828	7	11

1710.

Carolina	20,793	9	0	19,613	18	11¾
New England	31,112	17	7½	106,338	6	4
New York	8,203	18	2¾	31,475	0	9½
Pennsylvania	1,277	2	7	8,595	14	5¼
Virginia & Maryland	188,429	8	6	127,639	0	5¾
Total	249,816	15	11¼	293,662	1	0¼

1720.

Colonies.	Imports to G. Britain. £.	s.	d.	Exports from G. Britain. £.	s.	d.
Carolina	62,736	6	8	18,290	12	11
New England	49,206	12	6	128,767	2	11
New York	16,836	12	7	37,397	19	5
Pennsylvania	7,928	14	10	24,531	15	2
Virginia & Maryland	331,482	2	5	110,717	17	10
Total	468,190	9	0	319,705	8	3

1730.

Carolina	151,739	17	6	64,785	11	5
New England	54,701	5	10	208,196	5	5
New York	9,740	11	3	64,356	16	6
Pennsylvania	10,582	1	4	48,592	7	5
Virginia & Maryland	346,823	2	3	150,931	6	5
Total	662,586	18	2	536,862	7	2

1740.

Carolina	266,560	4	5	181,821	14	11
Georgia	924	9	8	3,524	7	7
New England	72,389	16	2	171,081	2	5
New York	21,498	0	5	118,777	8	10
Pennsylvania	15,048	12	0	56,751	14	9
Virginia & Maryland	341,997	10	11	281,428	10	11
Total	718,418	13	7	813,384	19	5

1750.

Carolina	191,607	6	3	133,037	0	9
Georgia	1,942	19	11	2,125	15	5
New England	48,455	9	0	343,659	6	8
New York	35,634	8	6	267,130	0	0
Pennsylvania	28,191	0	0	217,713	0	10
Virginia & Maryland	508,939	1	10	349,419	18	3
Total	804,770	5	6	1,313,076	1	11

1760.

Carolina	162,769	6	7	218,131	7	8
Georgia	12,198	14	10			
New England	37,802	13	1	599,647	14	8
New York	21,125	0	0	480,106	3	1
Pennsylvania	22,754	15	3	707,998	12	0
Virginia & Maryland	504,451	1	11	605,882	19	5
Total	761,101	11	8	2,611,766	16	10

1770.

Colonies.	Imports to G. Britain. £.	s.	d.	Exports from G. Britain. £.	s.	d.
Carolina	278,907	14	0	146,273	17	0
Georgia	55,532	7	5	56,193	16	7
New England	148,011	14	9	394,451	7	5
New York	69,882	10	5	475,991	12	0
Pennsylvania	28,109	5	11	134,881	15	5
Virginia & Maryland	435,094	9	7	717,782	17	3
Total	1,015,538	2	1	3,725,575	5	8

1773.

Carolina	456,513	8	4	344,859	9	1
Georgia	85,391	1	8	62,932	19	8
New England	124,624	19	6	527,055	15	10
New York	76,246	12	0	289,214	19	7
Pennsylvania	36,652	8	9	426,448	17	3
Virginia & Maryland	589,803	14	5	328,904	15	8
Total	1,369,232	4	8	1,979,416	17	1

5. AVERAGE VALUE OF IMPORTS AND EXPORTS.

Average value of Imports from the Colonies to Great Britain, and of Exports from Great Britain to the Colonies, now United States.

	Imports to G. Britain from the Colonies. £.	s.	d.	Exports from G. Brit. to the Colon. £.	s.	d.
Average from 1700 to 1710	265,783	0	10	267,205	3	4
1710 1720	392,653	17	1½	365,645	6	11½
1720 1730	578,830	16	4	471,342	11	10½
1730 1740	670,128	16	0½	660,136	11	1¼
1740 1750	708,943	9	0¼	812,647	13	0¼
1750 1760	802,691	6	10	1,577,419	14	2½
1760 1770	1,044,591	17	0	1,763,409	10	3
1770 1780	743,560	10	10	1,331,206	1	5

Value of Imports into England from the United States, and of Exports to the United States from England, taken from the Custom-house books.

Years.	Imports to England.	Exports to U. States.
1785	£ 893,594	£ 2,308,023
1790	1,191,071	3,431,778

6. BRITISH GOVERNORS OF THE COLONIES AT THE BEGINNING OF THE REVOLUTION.

Nova Scotia, Francis Legge.
Canada, Lieutenant General Sir Guy Carleton.
New Hampshire, John Wentworth.
Massachusetts, Thomas Hutchinson.
Rhode Island, Joseph Wanton.
Connecticut, Jonathan Trumbull.
New York, Major General William Tryon.
New Jersey, William Franklin.

Pennsylvania, John Penn.
Delaware,
Maryland, Sir Robert Eden.
Virginia, Earl of Dunmore.
North Carolina, Josiah Martin.
South Carolina, Lord William Campbell.
Georgia, Sir James Wright.
East Florida, Colonel Patrick Tryon.
West Florida, Peter Chester.

7. DATES OF THE FIRST SETTLEMENT OF THE SEVERAL COLONIES.

Virginia	1607	Maryland	1633
New York	1614	Connecticut	1635
Massachusetts	1620	Rhode Island	1636
New Hampshire	1623	North Carolina	1650
New Jersey	1624	South Carolina	1670
Delaware	1627	Pennsylvania	1682
Maine	1630	Georgia	1733

XXXV. STATISTICS OF THE REVOLUTION.

1. Expense of the Revolutionary War.

As the commerce of the United States was interrupted during the revolution, no revenue was raised from this branch of industry to sustain the great and pressing demands of the nation. Nor, indeed, had Congress power to levy a general tax on commerce, this being the prerogative of the several states. The country itself, moreover, in the midst of an oppressive war, was not in a condition to contribute pecuniary aid to the general cause, and the necessary resort of Congress was to loans and paper money. It is not possible to ascertain with certainty the expenses of the revolutionary war. An estimate was made in 1790, by the Register of the Treasury, and furnished to a committee of Congress. The following general abstract will show the results.

The estimated amount of the expenditures	Dolls.	90ths.
of 1775 and 1776 is, in specie,	20,064,666	66
1777	24,986,646	85
1778	24,289,438	26
1779	10,794,620	65
1780	3,000,000	00
1781	1,942,465	30
1782	3,632,745	85
1783	3,226,583	45
To Nov. 1st, 1784	548,525	63
Forming an amount total of	$92,485,693	15

The foregoing estimates, being confined to actual Treasury payments, are exclusive of the debts of the United States, which were incurred at various periods for the support of the war, and should be taken into a general view of the expense thereof, viz.

	Dolls.	90ths.
Army debt, upon commissioners' certificates	11,080,576	1
For supplies furnished by the citizens of the several states, and for which certificates were issued by the commissioners	3,723,625	20
For supplies furnished in the quarter-master, commissary, hospital, clothing, and marine departments, exclusive of the foraging	1,159,170	5
For supplies, on accounts settled at the Treasury, and for which certificates were issued by the Register	744,638	49
	$16,708,009	75
NOTE. The loan-office debt formed a part of the Treasury expenditures.		
The foreign expenditures, civil, military, naval, and contingencies, amount, by computation, to the sum of	$5,000,000	00
The expenditures of the several states, from the commencement of the war, to the establishment of peace, cannot be stated with any degree of certainty, because the accounts thereof remain to be settled. But as the United States have granted certain sums for the relief of the several states, to be funded by the general government, therefore, estimate the total amount of said assumption,	21,000,000	00
Estimated expense of the war, specie	$135,193,703	00

2. Emissions of Continental Money.

The advances made from the Treasury were principally in a paper medium, which was called *Continental Money*, and which in a short time depreciated; the specie value of it is given in the foregoing estimate. The advances made at the

Treasury of the United States in continental money, in old and new emissions, are estimated as follows, viz.

	Old Emission. Dolls. 90ths.	New Emission. Dolls. 90ths.
In 1776 . . .	20,064,666 66	
1777 . . .	26,426,333 1	
1778 . . .	66,965,269 34	
1779 . . .	149,703,856 77	
1780 . . .	82,908,320 47	891,236 80
1781 . . .	11,408,095 00	1,179,249 00
	$357,476,541 45	$2,070,485 80

By comparing this amount of paper money issued during the revolution, with the above estimate of the total expense in specie dollars, it will be seen that the average depreciation of the whole amount issued was nearly two thirds of its original value.

3. Loans and Grants of Money in France.

The following is a sketch of an account of the Loans, subsidies, and grants of money received in France during the revolution. The fractions of dollars are omitted. Five livres and eight sols are reckoned to the dollar.

	Livres.	Dollars.
1778. *February* 6.—Cash received from sundry individuals up to this day, including a loan from the Farmers General	3,000,000	555,555
" Loan by the Court of France for this year	3,000,000	555,555
1779.—Loan for this year	1,000,000	185,185
1780.—Loan	4,000,000	740,740
1781.—Loan	4,000,000	740,740
" Subsidy from the Court of France .	6,000,000	1,111,111
" Loan granted by the Court in Holland	10,000,000	1,851,851
1782.—Loan	6,000,000	1,111,111
1783.—Loan	6,000,000	1,111,111
	43,000,000	7,962,959

4. Presidents of the Old Congress.

Names of the Presidents of the Old Congress, States to which they belonged, and Dates of their Election.

Peyton Randolph,	Virginia,	September 5, 1774.
Henry Middleton,*	South Carolina,	October 22, 1774.

* Mr. Randolph was prevented from attending Congress by ill health, and Mr. Middleton was chosen to supply his place, five or six days only before the adjournment.

John Hancock,	Massachusetts,	May 19, 1775.
Henry Laurens,	South Carolina,	November 1, 1777.
John Jay,	New York,	December 10, 1778.
Samuel Huntington,	Connecticut,	September 28, 1779.
Thomas M'Kean,*	Delaware,	July 10, 1781.
John Hanson,	Maryland,	November 5, 1781.
Elias Boudinot,	New Jersey,	November 4, 1782.
Thomas Mifflin,	Pennsylvania,	November 3, 1783.
Richard Henry Lee,	Virginia,	November 30, 1784.
Nathaniel Gorham,†	Massachusetts,	June 6, 1786.
Arthur St. Clair,	Pennsylvania,	February 2, 1787.
Cyrus Griffin,	Virginia,	January 22, 1788.

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5. Signers of the Declaration of Independence.

Their names, where and when born, age when they signed the Declaration, dates of their death, and age at that time.

Names.	*Born.*	*Age in 1776.*	*Died.*	*Age.*
John Hancock,	Massachusetts,	1737 39	Oct. 8, 1793	56
Samuel Adams,	Massachusetts,	Sept. 22, 1722 54	Oct. 2, 1803	81
John Adams,	Massachusetts,	Oct. 19, 1735 41	July 4, 1826	91
Robert Treat Paine,	Massachusetts,	1731 45	May 11, 1814	83
Elbridge Gerry,	Massachusetts,	July 17, 1744 32	Nov. 23, 1814	70
Josiah Bartlett,	N. Hampshire,	1729 47	May 19, 1795	66
William Whipple,	Maine,	1730 46	Nov. 23, 1785	55
Matthew Thornton,	Ireland,	1714 62	June 24, 1803	89
Stephen Hopkins,	Rhode Island,	Mar. 7, 1707 69	July 13, 1785	78
William Ellery,	Rhode Island,	Dec. 22, 1727 49	Feb. 15, 1820	93
Roger Sherman,	Massachusetts,	Apr. 19, 1721 55	July 23, 1793	72
Samuel Huntington,	Connecticut,	July 2, 1732 44	Jan. 5, 1796	64
William Williams,	Connecticut,	Apr. 8, 1731 45	Aug. 2, 1811	81
Oliver Wolcott,	Connecticut,	1726 50	Dec. 1, 1797	71
William Floyd,	Long Island,	Dec. 17, 1734 42	Aug. 4, 1821	87
Philip Livingston,	New York.	Jan. 15, 1716 60	June 12, 1778	62
Francis Lewis,	South Wales,	1713 63	Dec. 30, 1803	90
Lewis Morris,	New York,	1726 50	Jan. 1798	72
Richard Stockton,	New Jersey,	Oct. 1, 1730 46	Feb. 28, 1781	51
John Witherspoon,	Scotland,	Feb. 5, 1722 54	Nov. 15, 1794	72
Francis Hopkinson,	Pennsylvania,	1737 39	May 8, 1791	54
John Hart,	New Jersey,		1780	
Abraham Clark,	New Jersey,	Feb. 5, 1726 50	1794	68
Robert Morris,	England,	Jan. 1733 43	May 8, 1806	73
Benjamin Rush,	Pennsylvania,	Dec. 24, 1745 31	Apr. 19, 1812	67
Benjamin Franklin,	Massachusetts,	Jan. 17, 1706 70	Apr. 17, 1790	84
John Morton,	Delaware,	1724 52	1777	53
George Clymer,	Pennsylvania,	1739 37	Jan. 23, 1813	74
James Smith,	Ireland,		1806	
George Taylor,	Ireland,	1716 60	Feb. 23, 1781	65
James Wilson,	Scotland,	1742 34	Aug. 28, 1798	56
George Ross,	Delaware,	1730 46	July 1779	
Cæsar Rodney,	Delaware,	1730 46	1783	53
George Read,	Maryland,	1734 42	1798	56
Thomas M'Kean,	Pennsylvania,	Mar. 19, 1734 42	June 24, 1817	83
Samuel Chase,	Maryland,	Apr. 17, 1741 35	June 19, 1811	70
William Paca,	Maryland,	Oct. 31, 1740 36	1799	59
Thomas Stone,	Maryland,	1740 36	Oct. 5, 1787	44
Charles Carroll,	Maryland,	Sept. 8, 1737 40	Now living,	93

When the next Congress met, May 10th, 1775, Peyton Randolph was again chosen president, but he held the chair only eight days, when he was obliged to return home, and John Hancock was chosen to fill the vacancy.

* Samuel Johnson, of North Carolina, was previously elected, but declined accepting.

† Mr. Gorham was elected "Chairman of Congress" on the 15th of May preceding.

Names.		*Born.*		*Age in 1776.*	*Died.*		*Age.*
George Wythe,	Virginia,		1726	50	June 6,	1806	80
Richard H. Lee,	Virginia,	Jan. 20,	1732	44	June 19,	1794	62
Thomas Jefferson,	Virginia,	Apr. 2,	1743	33	July 4,	1826	83
Benjamin Harrison,	Virginia,				Apr.	1791	
Thomas Nelson,	Virginia,	Dec. 26,	1738	39	Jan. 4,	1789	51
Francis L. Lee,	Virginia,	Oct. 14,	1734	42	Apr.	1797	63
Carter Braxton,	Virginia,	Sept. 10,	1736	40	Oct. 10,	1797	61
William Hooper,	Massachusetts,	June 17,	1742	34	Oct.	1790	48
Joseph Hewes,	New Jersey,		1730	46	Nov. 10,	1779	49
John Penn,	Virginia,	May 17,	1741	35	Sept.	1783	47
Edward Rutledge,	South Carolina,	Nov.	1749	27	Jan. 23,	1800	51
Thomas Heyward,	South Carolina,		1746	30	Mar.	1809	63
Thomas Lynch,	South Carolina,	Aug. 5,	1749	27	About	1780	31
Arthur Middleton,	South Carolina,		1743	33	Jan. 1,	1787	44
Button Gwinnett,	England,		1732	44	May 27,	1777	45
Lyman Hall,	Connecticut,		1731	45	About	1790	69
George Walton,	Virginia,		1740	36	Feb. 2,	1804	64

6. Adoption of the first State Constitutions.

At the beginning of the revolutionary troubles, some of the states were embarrassed in the practical operations of government. As early as November 1775, Congress recommended to New Hampshire, South Carolina, and Virginia, to establish such forms of government, as they should judge the exigencies of the times required. This recommendation was followed by several of the states during the year 1776, and New Hampshire, South Carolina, New Jersey, and Virginia adopted new systems of government before the declaration of independence. These were all limited to the duration of the dispute between the Colonies and Great Britain, except that of Virginia. The following list will show the times at which the first constitutions of the old states were adopted.

New Hampshire,	January 5,	1776
South Carolina,	March 24,	1776
Virginia,	June 29,	1776
New Jersey,	July 2,	1776
Maryland,	August 14,	1776
Pennsylvania,	September,	1776
Delaware,	September,	1776
North Carolina,	December,	1776
New York,	April,	1777
Massachusetts,	March,	1780
Vermont,	July 4,	1786
Georgia,	May,	1789

7. Troops employed during the Revolution.

[From Dr. Holmes's Annals,]

Land Forces employed by Great Britain in America, 1774–1780.

1774	6,884	Died & deserted	19,381	Lost of the army	24,717
1775	11,219	Prisoners . .	5,336	Lost of the navy	4,314
1776	45,865				
1777	48,616		24,717		29,031

Naval Force for the above four Years.

Men of war and armed vessels	83
Complement of men	22,337
Of which were lost by death	4,314

British Corps and Recruits sent from Great Britain or Ireland to North America or the West Indies.

1778	3774	Total 20,882.
1779	6871	
1780	1,0237	

Men and Marines employed by Great Britain during the American War.

Raised for his Majesty's navy, marines included, from September 29, 1774, to September 29, 1780 175,990

Of whom in 5 years, beginning with 1776 and ending with 1780,

Died	18,545	19,788 total.
Were killed	1,243	
Deserted	42,069	

Troops raised in Great Britain and Ireland for his Majesty's Land Service (Militia and Fencible Men in North Britain not included) from September 29, 1774, to September 29, 1780. . . . 76,885

Of which died in N. America and the W. Indies	10,012
Taken prisoners, including those under the Convention of Saratoga	8,629
Deserted	3,801
Discharged the service	3,885
	26,327

Account of the Ships of the Line and Frigates, taken or destroyed during the War of the Revolution.

French ships of the line taken by the British	13	26
Do. lost	13	
Spanish ships of the line taken by do.	7	12
Do. lost	5	
Dutch ships of the line taken by do.	3	7
Do. lost	4	
American ship of the line taken by do.		1
Taken 23, lost 23. Total		46

French frigates taken 27, American 12, Spanish 11, and Dutch 2;—beside which, 5 Spanish and 4 American frigates were lost. Total 61.

British, one 64 and two fifties taken by the French	3	18
Do. ships of the line lost	15	

British frigates taken by the French 6, by the Americans 1, and 17 lost. Total 24.

A Statement of the Troops (Continental and Militia) furnished by the respective States, during the Revolutionary War, from 1775 *to* 1783, *inclusive.*

[From the Collections of the New Hampshire Historical Society.]

	1775	1776		1777		1778		1779		1780		1781		1782	1783
	Contin.	Contin.	Militia.	Contin.	Militia.	Contin.	Militia.	Contin.	Militia.	Contin.	Militia.	Contin.	Militia.	Contin.	Contin.
New Hampshire,	2824	3019		1172	1111	1283		1004	222	1017	760	700		744	733
Massachusetts,	16444	13372	4000	7816	2775	7010	1927	6287	1451	4553	3436	3732	1566	4423	4370
Rhode Island,	1193	798	1102	548		630	2426	507	756	915		454		481	372
Connecticut,	4507	6390	5737	4563		4010		3544		3133	554	2420	1501	1732	1740
New York,	2075	3629	1715	1903	921	2194		2256		2179	668	1728		1198	1169
New Jersey,		3193	5893	1408		1586		1276		1105	162	823		660	675
Pennsylvania,	400	5519	4876	4983	2481	3684		3476		3337		1346		1265	1598
Delaware,		609	145	229		349		317		325	231	89		164	235
Maryland,		637	2592	2030	1535	3307		2849		2065		770		1280	974
Virginia,		6181		5744	1289	5236		3973		2486		1215	4331	1204	629
North Carolina,		1134		1281		1287		1214				545		1105	697
South Carolina,		2069		1650		1650		909							139
Georgia,		351		1423		673		87							145
	27443	46901	26060	34750	10112	32899	4353	27699	2429	21115	5811	13832	7398	14256	13076

Total, { Continental, . . . 231,971
Militia, ... 56,163

XXXVI. STATISTICAL AND OTHER PARTICULARS RESPECTING THE UNITED STATES.

1. Adoption of the Constitution by the Several States.

The delegates for forming the Constitution assembled in Philadelphia on the second Monday in May, 1787. George Washington was appointed President of the Convention. After debating the several articles of the constitution for about four months, it was adopted and signed by all the members then present, on the 17th of September. The Constitution was then to be sent out for the approval of each state, and provision was made by the Convention, that the ratification of nine states should be sufficient for the establishment of the new system. It was warmly debated in the state conventions, but was at length adopted by them all; in some cases with the recommendation of amendments, and in others without amendments. The following table shows the dates of the adoption in each state.

Delaware,	December 7, 1787,	without amendments.
Pennsylvania,	December 12, 1787,	without amendments.
New Jersey,	December 18, 1787,	without amendments.
Georgia,	January 2, 1788,	without amendments.
Connecticut,	January 9, 1788,	without amendments.
Massachusetts,	February 7, 1788,	amend'ts recommended.
Maryland,	April 28, 1788,	without amendments.
South Carolina,	May 23, 1788,	amend'ts recommended.
New Hampshire,	June 21, 1788,	amend'ts recommended.
Virginia,	June 27, 1788,	amend'ts recommended.
New York,	July 26, 1788,	amend'ts recommended.
North Carolina,	November 21, 1789,	amend'ts recommended.
Rhode Island,	May 29, 1790,	amend'ts recommended.
Vermont,	January 10, 1791,	without amendments.

Ratified by Congress, ... July 14, 1788
Electors of President appointed on the 1st Wednesday of January, ... 1789
Election of President, 1st Wednesday of February, . 1789
Constitution went into operation on the 1st Wednesday of March, ... 1789

2. Elections of Presidents and Vice-Presidents of the United States.

George Washington was unanimously chosen the first President, and was inaugurated April 30, 1789.

John Adams was chosen Vice-President.

1796.*

	Votes.
John Adams had	71
Thomas Jefferson	68
Thomas Pinckney	59
Aaron Burr	30

1800.†

Thomas Jefferson	73
Aaron Burr	73
John Adams	64
Thomas Pinckney	63

1804.

Thomas Jefferson for President	162
Charles C. Pinckney "	14
George Clinton for Vice-President	162
Rufus King "	14

1808.

James Madison for President	122
Charles C. Pinckney "	47
George Clinton for Vice-President	113
Rufus King "	47

1812.

	Votes.
James Madison for President	128
De Witt Clinton "	89
Elbridge Gerry for Vice-President	128
Jared Ingersoll	57

1816.

James Monroe for President	183
Rufus King "	34
Daniel D. Tompkins for Vice-President	113

1820.

James Monroe for President	231
One vote only in opposition	1
Daniel D. Tompkins for Vice-President	218

1824.‡

Andrew Jackson for President	99
John Q. Adams "	84
William H. Crawford "	41
Henry Clay "	31
John C. Calhoun elected Vice-President by a large majority.	

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* This election was according to the old system, in which the highest number of votes made the President, and the next highest the Vice-President.

† In this case the election went to the House of Representatives, and on the 36th ballot Mr. Jefferson was chosen President by the votes of New York, New Jersey, Pennsylvania, Virginia, Kentucky, Georgia, Tennessee, North Carolina, and Maryland. Aaron Burr was chosen Vice-President.

‡ The election went to the House of Representatives, and John Quincy Adams was chosen.

1828.

No. of Electors appointed in each State.	STATES.	For President. Andr. Jackson, of Tennessee.	For President. J. Q. Adams, of Massachusetts.	For Vice-President. J. C. Calhoun, of South Car.	For Vice-President. Richard Rush, of Penn.	For Vice-President. Wm. Smith of S. Carolina.
9	Maine,	1	8	1	8	..
8	New Hampshire,	..	8	..	8	..
15	Massachusetts,	..	15	..	15	..
4	Rhode Island,	..	4	..	4	..
8	Connecticut,	..	8	..	8	..
7	Vermont,	..	7	..	7	..
36	New York,	20	16	20	16	..
8	New Jersey,	..	8	..	8	..
28	Pennsylvania,	28	..	28	..	..
3	Delaware,	..	3	..	3	..
11	Maryland,	5	6	5	6	..
24	Virginia,	24	..	24	..	..
15	North Carolina,	15	..	15	..	..
11	South Carolina,	11	..	11	..	..
9	Georgia,	9	..	2	..	7
14	Kentucky,	14	..	14	..	..
11	Tennessee,	11	..	11	..	..
16	Ohio,	16	..	16	..	..
5	Louisiana,	5	..	5	..	..
5	Indiana,	5	..	5	..	..
3	Mississippi,	3	..	3	..	..
3	Illinois,	3	..	3	..	..
5	Alabama,	5	..	5	..	..
3	Missouri,	3	..	3	..	..
261		178	83	171	83	7

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3. List of the Civil Officers of the United States since the Adoption of the Constitution.

Presidents.

Names.	Place of Residence.	Time of Service.
George Washington,	Virginia,	1789 to 1797.
John Adams,	Massachusetts,	1797 to 1801.
Thomas Jefferson,	Virginia,	1801 to 1809.
James Madison,	Virginia,	1809 to 1817.
James Monroe,	Virginia,	1817 to 1825.
John Quincy Adams,	Massachusetts,	1825 to 1829.
Andrew Jackson,	Tennessee,	1829

Vice-Presidents.

John Adams,	Massachusetts,	1789 to 1797.
Thomas Jefferson,	Virginia,	1797 to 1801.

Aaron Burr,	New York,	1801 to 1805.
George Clinton,	New York,	1805 to 1813.
Elbridge Gerry,	Massachusetts,	1813 to 1817.
Daniel D. Tompkins,	New York,	1817 to 1825.
John C. Calhoun,	South Carolina,	1825

Secretaries of State.

		Appointed.
Thomas Jefferson,	Virginia,	September 26, 1789.
Edmund Randolph,	Virginia,	January 2, 1794.
Timothy Pickering,	Pennsylvania,	December 10, 1795.
John Marshall,	Virginia,	May 13, 1800.
James Madison,	Virginia,	March 5, 1801.
Robert Smith,	Maryland,	March 6, 1809.
James Monroe,	Virginia,	November 26, 1811.
James Monroe,*	Virginia,	February 28, 1815.
John Quincy Adams,	Massachusetts,	March 5, 1817.
Henry Clay,	Kentucky,	March 7, 1825.
Martin Van Buren,	New York,	March, 1829.

Secretaries of the Treasury.

Alexander Hamilton,	New York,	September 11, 1789.
Oliver Wolcott jr.	Connecticut,	February 2, 1795.
Samuel Dexter,	Massachusetts,	January 1, 1801.
Albert Gallatin,	Pennsylvania,	January 26, 1802.
George W. Campbell,	Tennessee,	February 9, 1814.
Alexander J. Dallas,	Pennsylvania,	October 6, 1814.
William H. Crawford,	Georgia,	March 5, 1817.
Richard Rush,	Pennsylvania,	March 7, 1825.
Samuel D. Ingham,	Pennsylvania,	March, 1829.

Comptrollers of the Treasury.

Nicholas Eveleigh,	South Carolina,	September 11, 1789.
Oliver Wolcott,	Connecticu ,	November 7, 1791.
Jonathan Jackson,	Massachusetts,	February 25, 1795.
John Davis,	Massachusetts,	June 26, 1795.
John Steele,	North Carolina,	December 22, 1796.
Gabriel Duvall,	Maryland,	December 15, 1802.
Richard Rush,	Pennsylvania,	November 22, 1811.
Ezekiel Bacon,	Massachusetts,	February 11, 1814.
Joseph Anderson,	Tennessee,	February 28, 1815.

Second Comptrollers.

Richard Cutts,	Massachusetts,	March 6, 1817.
Isaac Hill,	New Hampshire,	March, 1829.

Treasurer .

Samuel Meredith,	Pennsylvania,	September 11, 1789.
Thomas Tudor Tucker,	South Carolina,	January 26, 1802.
William Clarke,	Pennsylvania,	1828.
John Campbell,		1829.

* Recommissioned, having acted as Secretary of War.

Auditors.

Oliver Wolcott, jr.	Connecticut,	September 12, 1789.
Richard Harrison,	Virginia,	November 29, 1791.

Register.

Joseph Nourse,	Virginia.	September 12, 1789.
Thomas L. Smith.		1829.

Secretaries of War.

Henry Knox,	Massachusetts,	September 12, 1789.
Timothy Pickering,	Pennsylvania,	January 2, 1795,
James M'Henry,	Maryland,	January 27, 1796.
Samuel Dexter,	Massachusetts,	May 13, 1800.
Roger Griswold,	Connecticut,	February 3, 1801.
Henry Dearborn,	Massachusetts,	March 5, 1801.
William Eustis,	Massachusetts,	March 7, 1809.
John Armstrong,	New York,	January 13, 1813.
William H. Crawford,	Georgia,	August 1, 1815.
Isaac Shelby,	Kentucky,	March 5, 1817.
John C. Calhoun,	South Carolina,	December 16, 1817.
James Barbour	Virginia,	March 7, 1825.
Peter B. Porter,	New York,	May 23, 1828.
John H. Eaton,	Tennessee,	March, 1829.

Secretaries of the Navy.

George Cabot,	Massachusetts,	May 3, 1798.
Benjamin Stoddart,	Maryland,	May 21, 1798.
Robert Smith,	Maryland,	January 26, 1802.
Jacob Crowninshield,	Massachusetts,	March 3, 1805.
Paul Hamilton,	South Carolina,	March 7, 1809.
William Jones,	Pennsylvania,	January 12, 1813.
B. W. Crowninshield	Massachusetts,	December 19, 1814.
Smith Thomson,	New York,	November 30, 1818.
Samuel L. Southard,	New Jersey,	December 9, 1823.
John Branch,	North Carolina,	March, 1829.

Postmasters General.

Samuel Osgood,	Massachusetts,	September 26, 1789.
Timothy Pickering,	Pennsylvania,	November 7, 1794.
Joseph Habersham,	Georgia,	February 25, 1795.
Gideon Granger,	Connecticut,	January 26, 1802.
Return Jonathan Meigs,	Ohio,	March 17, 1814.
John M'Lean,	Ohio,	December 9, 1823.
W. T. Barry,	Kentucky,	March, 1829.

UPREME COURT OF THE UNITED STATES.

Chief Justices.

John Jay,	New York,	September 26, 1789.
William Cushing,	Massachusetts,	January 27, 1796.
Oliver Ellsworth,	Connecticut,	March 4, 1796.
John Jay,	New York,	December 19, 1800.
John Marshall,	Virginia,	January 31, 1801.

Associate Justices.

John Rutledge,	South Carolina,	September 26, 1789.
William Cushing,	Massachusetts,	September 27, 1789.
Robert H. Harrison,	Maryland,	September 28, 1789.
James Wilson,	Pennsylvania,	September 29, 1789.
John Blair,	Virginia,	September 30, 1789.
James Iredell,	North Carolina,	February 10, 1790.
Thomas Johnson,	Maryland,	November 7, 1791.
William Patterson,	New York,	March 4, 1793.
Samuel Chase,	Maryland,	January 27, 1796.
Bushrod Washington,	Virginia,	December 20, 1798.
William Johnson,	South Carolina,	March 26, 1804.
Brockholst Livingston,	New York,	January 16, 1807.
Thomas Todd,	Virginia,	March 3, 1807.
Levi Lincoln,	Massachusetts,	January 7, 1811.
John Quincy Adams,	Massachusetts,	February 22, 1811.
Gabriel Duvall,	Maryland,	November 18, 1811.
Joseph Story,	Massachusetts,	November 18, 1811.
Smith Thompson,	New York,	December 9, 1823.
Robert Trimble,	Kentucky,	March 9, 1826.
John M'Lean,	Ohio,	1829.

Attorneys General.

Edmund Randolph,	Virginia,	September 26, 1789.
William Bradford,	Pennsylvania,	January 27, 1794.
Charles Lee,	Virginia,	December 10, 1795.
Levi Lincoln,	Massachusetts,	March 5, 1801.
Robert Smith,	Maryland,	March 3, 1805.
John Breckenridge,	Kentucky,	January 17, 1806
Cæsar A. Rodney,	Delaware,	January 20, 1807.
William Pinkney,	Maryland,	December 11, 1811.
Richard Rush,	Pennsylvania,	February 10, 1814.
William Wirt,	Virginia,	December 16, 1817.
John M. Berrien,	Georgia,	March, 1829.

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5. Ministers from the United States to Foreign Countries, since the Beginning of the Government.

The following list contains the names of the foreign ministers, and the dates of their commissions. The annual salary of a Minister Plenipotentiary is $9000, with an outfit of 9000 more. A Chargé d'Affaires receives $4500 a year, and a Secretary of Legation $2000.

To Great Britain.

Gouverneur Morris, of New Jersey, Commissioner, 13 Oct. 1789.
Thomas Pinckney, of South Carolina, Minister Plenipotentiary, 12 January, 1792.
John Jay, of New York, Envoy Extraordinary, 19 April, 1794.
Rufus King, of New York, Minister Plenipotentiary, 20 May, 1796.
James Monroe, of Virginia, Minister Plenipotentiary, 18 April, 1803.

James Monroe and William Pinkney, jointly and severally, Ministers Plenipotentiary and Extraordinary, 12 May, 1806.
William Pinkney, of Maryland, Minister Plenipotentiary, 12 May, 1806; renewed 26 February, 1808.
John Quincy Adams, of Massachusetts, Envoy Extraordinary and Minister Plenipotentiary, 28 February, 1815.
Richard Rush, of Pennsylvania, Envoy Extraordinary and Minister Plenipotentiary, 16 December, 1817.
Rufus King, of New York, Envoy Extraordinary and Minister Plenipotentiary, 5 May, 1825.
Albert Gallatin, of Pennsylvania, Envoy Extraordinary and Minister Plenipotentiary, 10 May, 1826.
James Barbour, Envoy Extraordinary and Minister Plenipotentiary, 23 May, 1828.
Louis McLane, Envoy Extraordinary and Minister Plenipotentiary, 1829.
Washington Irving, Secretary of Legation.

To France.

William Short, of Virginia, Chargé d'Affaires, 6 April, 1790.
Gouverneur Morris, of New Jersey, Minister Plenipotentiary, 12 January, 1792.
James Monroe, of Virginia, Minister Plenipotentiary, 28 May, 1794.
Charles Cotesworth Pinckney, of South Carolina, Minister Plenipotentiary, 9 September, 1796.
Charles Cotesworth Pinckney, Elbridge Gerry, and John Marshall, jointly and severally, Envoys Extraordinary and Ministers Plenipotentiary. 5 June, 1797.
Oliver Ellsworth, Patrick Henry, and William Vans Murray, Envoys Extraordinary and Ministers Plenipotentiary, 26 February, 1799.
William Richardson Davie, of North Carolina, in place of Patrick Henry, 10 December, 1799.
James A. Bayard, of Delaware, Minister Plenipotentiary, 19 February, 1801.
Robert R. Livingston, of New York, Minister Plenipotentiary, 2 October, 1801.
John Armstrong, of New York, Minister Plenipotentiary, 30 June, 1804.
Joel Barlow, of Connecticut, Minister Plenipotentiary, 27 February, 1811.
William H. Crawford, of Georgia, Minister Plenipotentiary, 9 April, 1813.
Albert Gallatin, of Pennsylvania, Envoy Extraordinary and Minister Plenipotentiary, 28 February, 1815.
James Brown of Louisiana, Envoy Extraordinary, and Minister Plenipotentiary, 9 December, 1823.
William C. Rives, Envoy Extraordinary and Minister Plenipotentiary, 1829.
Charles Carroll Harper, Secretary of Legation.

To Spain.

William Carmichael, of Maryland, Chargé d'Affaires, 11 April, 1790.
William Carmichael and William Short, Commissioners, 18 March, 1792.
William Short, of Virginia, Minister Resident, 28 May, 1794.
Thomas Pinckney, of South Carolina, Envoy Extraordinary, 24 November, 1794.
David Humphreys, of Connecticut, Minister Plenipotentiary, 20 May, 1796.
Charles Pinckney, of South Carolina, Minister Plenipotentiary, 6 June, 1801.
James Monroe, of Virginia, Minister Extraordinary and Plenipotentiary, 14 October, 1804.
James Bowdoin, of Massachusetts, Minister Plenipotentiary, 22 November, 1804.

George W. Erving of Massachusetts, Minister Plenipotentiary, 10 August, 1814.
John Forsyth, of Georgia, Minister Plenipotentiary, 16 February, 1819.
Hugh Nelson, of Virginia, Envoy Extraordinary and Minister Plenipotentiary, 15 January, 1823.
Alexander Hill Everett, of Massachusetts, Envoy Extraordinary and Minister Plenipotentiary, 9 March, 1825.
Charles S. Walsh, Secretary of Legation, 17 June, 1828.
Cornelius P. Van Ness, Envoy Extraordinary and Minister Plenipotentiary, 1829.

To the Netherlands.

William Short, of Virginia, Minister Resident, 16 January, 1792.
John Quincy Adams, of Massachusetts, Minister Resident, 30 May, 1794.
William Vans Murray, of Maryland, Minister Resident, 2 March, 1797.
William Eustis, of Massachusetts, Envoy Extraordinary and Minister Plenipotentiary, 10 December, 1814.
Alexander Hill Everett, of Massachusetts, Chargé d'Affaires, 30 November, 1818.
Christopher Hughes, of Maryland, Chargé d'Affaires, 9 March, 1825.
William Pitt Preble, Envoy Extraordinary and Minister Plenipotentiary, 1829.

To Portugal.

David Humphreys, of Connecticut, Minister Resident, 21 February, 1791.
John Quincy Adams, of Massachusetts, Minister Plenipotentiary, 30 May, 1796.
William Smith, of South Carolina, Minister Plenipotentiary, 10 July, 1797.
Thomas Sumpter, of South Carolina, Minister Plenipotentiary, (in Brazil) 7 March, 1809.
John Graham, of Virginia, Minister Plenipotentiary, (in Brazil) 6 January, 1819.
Henry Dearborn, sen., of New Hampshire, Envoy Extraordinary and Minister Plenipotentiary, 7 May, 1822.
Thomas L. L. Brent, of Virginia, Chargé d'Affaires, 9 March, 1825.

To Prussia.

John Quincy Adams, of Massachusetts, Minister Plenipotentiary, 1 June, 1797.
Henry Clay, (Secretary of State) Special Commissioner, with full power to conclude a Treaty with the Government of Prussia, 18 April, 1823.

To Russia.

John Quincy Adams, of Massachusetts, Minister Plenipotentiary, 27 June, 1809.
James A. Bayard, of Delaware, Envoy Extraordinary and Minister Plenipotentiary, 28 February, 1815.
William Pinkney, of Maryland, Envoy Extraordinary and Minister Plenipotentiary, 26 April, 1815.
George W. Campbell, of Tennessee, Envoy Extraordinary and Minister Plenipotentiary, 16 April, 1818.
Henry Middleton, of South Carolina, Envoy Extraordinary and Minister Plenipotentiary, 6 April, 1820.
Albert Gallatin and William Pitt Preble, Agents in the Negotiation and upon the Umpirage relating to the Northeastern Boundary of the United States, 9 May, 1828.

To Sweden.

Jonathan Russell, of Rhode Island, Minister Plenipotentiary, 18 January, 1814.
Christopher Hughes, jr. of Maryland, Chargé d'Affaires, 21 January, 1819.
William C. Somerville, of Maryland, Chargé d'Affaires, 9 March, 1825.
John James Appleton, of Massachusetts, Chargé d'Affaires, 2 May, 1826.

Negotiators of the Treaty of Ghent.

John Quincy Adams, Albert Gallatin, and James A. Bayard, Envoys Extraordinary and Ministers Plenipotentiary, 17 April, 1813.
Henry Clay and Jonathan Russell were added to this Commission on the 18 January, 1814.

Denmark.

Henry Wheaton, of New York, Chargé d'Affaires, 3 March, 1827.

To the Republic of Colombia.

Richard C. Anderson, of Virginia, Minister Plenipotentiary, 27 January, 1823.
Beaufort T. Watts, of South Carolina, Chargé d'Affaires, 3 March, 1827.
William H. Harrison, Envoy Extraordinary and Minister Plenipotentiary, 24 May, 1828.
Thomas P. Moore, Envoy Extraordinary and Minister Plenipotentiary, 1829.

To the Republic of Buenos Ayres.

Cæsar A. Rodney, of Delaware, Minister Plenipotentiary, 27 January, 1823.
John M. Forbes, of Florida, Chargé d'Affaires, 9 March, 1825.

To the Government of Chile.

Heman Allen, of Vermont, Minister Plenipotentiary, 27 January, 1823,
Samuel Larned, Chargé d'Affaires, February 9, 1828.

To Mexico.

Andrew Jackson, of Tennessee, Envoy Extraordinary and Minister Plenipotentiary, 27 January, 1823.
Ninian Edwards, of Illinois, Envoy Extraordinary and Minister Plenipotentiary, 4 March, 1824.
Joel R. Poinsett, of South Carolina, Envoy Extraordinary and Minister Plenipotentiary, 8 March, 1825.

To Brazil.

Condy Raguet, of Pennsylvania, Chargé d'Affaires, 9 March, 1825.
William Tudor, of Massachusetts, Chargé d'Affaires, 27 December, 1827.

To Guatemala.

William Miller, of North Carolina, Chargé d'Affaires, 7 March, 1825.
John Williams, of Tennessee, Chargé d'Affaires, 9 December, 1825.
William B. Rochester, of New York, Chargé d'Affaires, 3 March, 1827.

To Peru.

James Cooley, of Ohio, Chargé d'Affaires, 2 May, 1826.
Samuel Larned, Chargé d'Affaires, 29 December, 1828.

To the Assembly of American Nations, proposed to be held at Panamá.

Richard C. Anderson, of Virginia, and John Sergeant, of Pennsylvania, Envoys Extraordinary and Ministers Plenipotentiary, 14 March, 1826.

Joel R. Poinsett, of South Carolina, Envoy Extraordinary and Minister Plenipotentiary, 12 February, 1827.

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6. Ministers from Foreign Nations now in the United States.

Great Britain.—Right Hon. Charles Richard Vaughan, Envoy Extraordinary and Minister Plenipotentiary.
France.—Count de Menou, Chargé d'Affaires.
Russia.—Baron Krudner, Envoy Extraordinary and Minister Plenipotentiary.
Spain.—Don Francisco Tacon, Minister Resident.
Portugal.—Chevalier T. d'Azambuja, Chargé d'Affaires.
Austria.—Baron de Lederer, Consul.
Prussia.—L. Neiderstetter, Chargé d'Affaires.
Denmark.—Chevalier Pedersen, Minister Resident.
Sweden.—Baron Stackleberg, Chargé d'Affaires.
Netherlands.—Chevalier B. Huygens, Envoy Extraordinary and Minister Plenipotentiary.
Mexico.—Don José M. Montoya, Chargé d'Affaires.
Chile.—Don Joaquim Campino, Minister Plenipotentiary.
Colombia.—Don J. de Medina, Consul General.

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7. Cabinet and Heads of Departments.

Andrew Jackson,	President,	Salary	$25000
Martin Van Buren,	Secretary of State,	"	6000
Samuel D. Ingham,	Secretary of the Treasury,	"	6000
John H. Eaton,	Secretary of War,	"	6000
John Branch,	Secretary of the Navy,	"	6000
John M. Berrien,	Attorney General,	"	6000
William T. Barry,	Post-Master General,	"	6000
John C. Calhoun,	Vice-President,	"	5000

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8. Judiciary of the United States.

Supreme Court.

Names of the Judges, Attorney General, Clerk, Marshal, and Reporter, their Places of Residence, and their Salaries.

Names.		Residence.	Salary.
John Marshall, Chief Justice	. .	Richmond, Va.	$5,000
Bushrod Washington, Associate Justice		Mount Vernon.	4,500
William Johnson	"	Charleston, S. C.	4,500
Gabriel Duvall	"	Marietta, Md.	4,500
Joseph Story	"	Cambridge, Mass.	4,500
Smith Thompson	"	New York.	4,500
John McLean	"	Ohio.	4,500
John M. Berrien, Attorney General	.	Washington.	3,500
William T. Carroll, Clerk	. .	Washington.	Fees.
Tench Ringgold, Marshal	. . .	Washington.	"
Richard Peters, Reporter	. .	Philadelphia.	"

DISTRICT COURTS.

Names of the Judges, Attorneys, and Marshals, and the Amount of their Salary.

States.	Judges.	Salary.	Attorneys.	Salary.	Marshals.	Salary.
MAINE	Ashur Ware	$1,000	E. Shepley	$200 & fees	B. Green	Fees
NEW HAMPSHIRE	John S. Sherburne	1,000	S. Cushman	200 & fees	P. Cogswell	$200 & fees
MASSACHUSETTS	John Davis	1,600	A. Dunlap	Fees	S. D. Harris	Fees
CONNECTICUT	William Bristol	1,000	A. Child	200 & fees	James Mitchell	Fees
RHODE ISLAND	John Pitman	1,000	R. W. Green	200 & fees	B. Anthony	Fees
VERMONT	Elijah Paine	800	W. A. Griswold	200 & fees	J. Edson	200 & fees
NEW YORK						
Northern District	Alfred Conkling	1,600	Samuel Beardsley	200 & fees	J. W. Livingston	200 & fees
Southern District	Samuel R. Betts	1,600	I. A. Hamilton	200 & fees	T. Morris	Fees
NEW JERSEY	William Russell	1,200	G. D. Wall	200 & fees	Z. Drake	Fees
PENNSYLVANIA						
Eastern District	Joseph Hopkinson	1,600	G. M. Dallas	Fees	John Conard	Fees
Western District	William Wilkins	1,600	A. Brackenridge	200 & fees	J. M. Davis	200 & fees
DELAWARE	Willard Hall	1,200	G. Read, Jr.	200 & fees	J. Brobson	200 & fees
MARYLAND	Elias Glenn	1,600	N. Williams	Fees	T. Finley	Fees
VIRGINIA						
Eastern District	George Hay	1,800	R. Stannard	200 & fees	J. Pegrams	Fees
Western District	Alexander Caldwell	1,000	E. S. Duncan	200 & fees	B. Reeder	200 & fees
NORTH CAROLINA	H. Potter	1,500	T. P. Devereaux	200 & fees	B. Daniels	Fees
SOUTH CAROLINA	Thomas Lee	1,800	John Gadsden	Fees	M. A. Warren	Fees
GEORGIA	Jeremiah Cuyler	1,600	M. H. McAllister	200 & fees	J. H. Morel	Fees

ALABAMA						
Southern District	William Crawford	1,500	Henry Hitchcock	200 & fees	F. W. Armstrong	Fees
Northern District	William Crawford	1,500	H. I. Thornton	200 & fees	F. W. Armstrong	200 & fees
MISSISSIPPI	Peter Randolph	2,000	F. Houston	200 & fees	J. H. Norton	200 & fees
LOUISIANA						
Eastern District	Samuel H. Harper		John W. Smith		J. Nicholson	
Western District	Samuel H. Harper		Benjamin F. Lenton		F. Dupanier	
TENNESSEE						
Eastern District	John McNairy	1,500	J. A. McKinney		William Lyon	
Western District	John McNairy	1,500	James Collingworth	200 & fees	R. Purdy	200 & fees
KENTUCKY	John Boyle	1,500	J. S. Smith		J. M. McCalla	200 & fees
OHIO	John W. Campbell	1,000	Samuel Herrick	200 & fees	J. Patterson	200 & fees
INDIANA	Benjamin Parke	1,000	Samuel Judah	200 & fees	William Marshall	200 & fees
ILLINOIS	Nathaniel Pope		Samuel McRoberts		Charles Slade	
MISSOURI	James H. Peck	1,200	Beverly Allen		J. Simmonds jr.	200 & fees
Territories.						
Arkansas	J. W. Bates	1,200				
"	Benjamin Johnson	1,200				
"	Thomas P. Eskridge	1,200				
"	William Trimble	1,200	Samuel C. Roane	200 & fees	G. W. Scott	200 & fees
Michigan	William Woodbridge	1,200				
"	James Witherill	1,200				
"	Solomon Sibley	1,200				
"	Henry Chipman	1,200				
"	James D. Doty	1,200	Daniel Le Roy		Thomas Rowland	
East Florida	Joseph L. Smith	1,500	Thomas Douglass		Waters Smith	
Middle Florida	Thomas Randall	1,500	James G. Ringgold	200 & fees	Alexander Adair	200 & fees
West Florida	H. M. Brackenridge	1,500	B. D. Wright		James W. Exum	
Southern Florida	James Webb		J. G. Stower		H. Wilson	
District of Columbia	William Cranch	2,700				
"	Buckner Thruston	2,500				
"	James S. Morsel	2,500	Thomas Swann	Fees	Tench Ringgold	Fees

9. TABULAR VIEW OF THE NUMBER OF THE REPRESENTATIVES IN CONGRESS FROM THE BEGINNING OF THE GOVERNMENT.

STATES.	Number of Representatives.				
	1789.	1791.	1803.	1813.	1823.
New Hampshire	3	4	5	6	6
Massachusetts	8	14	17	20	13
Rhode Island	1	2	2	2	2
Connecticut	5	7	7	7	6
New York	6	10	10	27	34
New Jersey	4	5	6	6	6
Pennsylvania	8	13	18	23	26
Delaware	1	1	1	2	1
Maryland	6	8	9	9	9
Virginia	10	19	22	23	22
North Carolina	5	10	12	13	13
South Carolina	5	6	8	9	9
Georgia	3	2	4	6	7
Kentucky, (separated from Virginia in 1791)	..	2	6	10	12
Vermont, (from New Hampshire and New York, 1791)	..	2	4	6	5
Tennessee, (from North Carolina, 1796)	..	2	3	6	9
Ohio, (from a territory, 1802)	..	..	1	6	14
Louisiana, (from a territory, 1812)	..	..	..	1	3
Indiana, (from a territory, 1816)	..	..	..	..	3
Mississippi, (from a territory, 1817)	..	..	..	..	1
Illinois, (from a territory, 1818)	..	..	..	..	1
Alabama, (from a territory, 1821)	..	..	..	..	3
Missouri, (from a territory, 1822)	..	..	..	..	1
Maine, (from Massachusetts, 1822)	..	..	..	..	7
Territories sending Delegates.					
Michigan	..	..	..	..	1
Arkansas	..	..	..	..	1
Florida	..	..	..	..	1

10. RECEIPTS AND EXPENDITURES.

1. *Receipts into the Treasury of the United States, for the Year* 1827.

Customs	$19,712,283 29
Lands	1,405,845 26
Dividends on Stock in the Bank of the United States	420,000 00
Arrears of Internal Duties, Direct Tax, and other incidental receipts	100,429,97
Repayment of Advances made in the War Department, for services and supplies, prior to the 1st July, 1815	32,845 44
Moneys received from the British Government, under the Convention of the 13th Nov. 1826	1,204,960 00
	$22,966,363 96

Making, with the Balance in the Treasury on the 1st January, 1827,			$6,358,686 18
An aggregate of			$29,325,050 14

2. *Expenditures for the Year* 1827.

Civil			$1,228,141 04
Miscellaneous			826,123 67
Diplomatic			659,211 87
Military Establishment			5,675,741 62
Naval "			4,263,877 45
Public Debt, viz.			
Interest on the Funded Debt	3,482,509 21		
Redemption of the six per cent. Stock of 1813, (loan of sixteen millions)	6,507,466 85		
Interest on the Louisiana Stock	3,562 30		
Reimbursement of the Mississippi Stock	1,642 48		
Paying certain part of the Domestic Debt	21 12		
Paying Principal and Interest of Treasury Notes	8,466 44		
	10,030,668 40		
From which deduct the following repayment—			
Redemption of six per cent. Stock of 1813 (7½ millions)	0 01		
		10,003,668 39	
Total			$22,656,764 04

3. *Receipts into the Treasury, for the Year* 1828.

The actual receipts into the Treasury during the first three quarters of the year 1828, are estimated to have amounted to		$18,633,580 27
Viz.—Customs		17,309,169 73
Lands		564,507 33
Dividends on Stock in the Bank of the United States		455,000 00
Arrears of Internal Duties, Direct Tax, and incidental receipts		289,152 72
Repayment of Advances made in the War Department, prior to the 1st July, 1815		15,750 49
And the actual receipts into the Treasury during the fourth quarter of the year are estimated at		5,461,283 40
Making the total receipts into the Treasury during the year 1828		24,094,863 67
And with the balance in the Treasury on the 31st December, 1827		6,668,286 10
An aggregate estimated at		$30,763,149 77

4. *Summary of Expenditures for* 1828.

The Expenditures during the first three quarters of 1828 have amounted to		$18,244,907 91
Viz.—Civil, Diplomatic, and Miscellaneous		2,235,823 97
Military Establishment, including Fortifications, Ordnance, Indian Department, Revolutionary and Military Pensions, and Arming the Militia		4,684,666 81
Naval service, including the gradual improvement of the Navy		3,201,140 68
Public Debt.—Principal	5,002,031 52	
Interest	2,357,556 67	
		7,359,588 10
Payment of awards to owners of slaves and other property, under the Convention with the British Government, of the 13th November, 1826		763,688 26
And the expenditures of the fourth quarter are estimated at		7,392,603 72
Viz:—Civil, Diplomatic, and Miscellaneous		546,000 00
Military Establishment		1,100,000 00
Naval Service		900,000 00
Public Debt.—Principal	4,059,464 67	
Interest	744,514 04	
		4,803,978 71
Balances of awards to owners of slaves and other property		42,625 01
Making the total estimated expenditure of 1828		25,637,511 63
And leaving in the Treasury, on the 1st of January, 1829, an estimated balance of		$5,125,638 14

5. *Items of Expenditure for the First Three Quarters of* 1828.

CIVIL, MISCELLANEOUS, AND DIPLOMATIC, VIZ.

Legislature	$520,257 52
Executive Departments	392,577 05
Officers of the Mint	7,200,00
Surveying Department	15,613 26
Commissioners of the Public Buildings	1,500 00
Governments in the Territories of the United States	35,147 59
Judiciary	192,928 62
Annuities and Grants	1,698 91
Mint Establishment	26,388 95
Unclaimed Merchandise	316 84
Light-house Establishment	172,648 00
Surveys of Public Lands	37,647 97
Registers and Receivers of Land Officers	1,250 00
Preservation of the Public Archives in Florida Territory	750 00
Land Claims in Florida Territory	2,554 75
Land Claims in Alabama	2,819 67
Land Claims in Michigan	297 13
Roads within the State of Ohio	4,215 41
Roads within the State of Indiana	11,346 25
Roads, Canals, &c. within the State of Alabama	4,632 69
Do. do. Missouri	6,332 67

Marine Hospital Establishment	$49,159 70
Public Buildings in Washington	86,006 23
Payment of Balances to Collectors of new Internal Revenue	192 46
Stock in the Louisville and Portland Canal Company	30,000 00
Stock in the Chesapeake and Ohio Canal Company	10,000 00
Payment of Claims for Property lost, &c.	75 50
Appropriation for Navy Hospital Fund	46,217 14
Indemnifying the Owner of the British Ship Union	23,474 00
Repayment for Lands erroneously sold by the United States	327 00
Revolutionary Claims	310,254 77
Miscellaneous Expenses	57,175 13
Diplomatic Department	102,779 98
Contingent Expenses of Foreign Intercourse	15,756 69
Relief and Protection of American Seamen	11,747 30
Prize Causes	8,000 00
Treaties with the Mediterranean Powers	33,730 00
Treaty of Ghent (6th and 7th Articles)	2,700 34
Do. (1st Article)	9,804 45
Awards under the 1st Article of the Treaty of Ghent	763,688 26
	$2,999,512 23

MILITARY ESTABLISHMENT.

Pay of the Army	$807,155 65
Subsistence	177,965 98
Forage	35,821 02
Quarter-master's Department	380,484 90
Arrearages of the Army	13,955 37
Bounties and Premiums	14,017 16
Expenses of Recruiting	11,252 74
Purchasing Department	152,879 70
Purchase of Woollens for 1829	10,000 00
Ordnance	65,609 22
Arming and Equipping the Militia	165,382 90
Armories	295,414 40
Arsenals	60,292 08
Arsenal at Augusta, Maine	24,900 00
Arsenal at Augusta, Georgia	16,778 81
Hospital Department	14,151 99
Contingencies of the Army	10,353 92
Expenses of the Board of Visitors to West Point	1,500 00
Repairs and Contingencies of Fortifications	14,232 24
Fort Munroe	76,354 55
" Calhoun	63,135 41
" Adams	66,504 32
" Hamilton	60,358 03
" Jackson	47,744 00
" Macon, at Beaufort	55,561 98
" at Cape Fear	34,729 39
" at Mobile Point	80,000 00
" at Pensacola	4,000 00
" Delaware	1 28
Armament of new Fortifications	114,660 64
Surveys &c., Roads and Canals	28,963 66
Continuation of the Cumberland Road	128,508 36

Repairs of the Cumberland Road	$5,000 00
Road from Memphis to Little Rock	9,470 18
" Little Rock to Cantonment Gibson	5,300 00
" Fort Smith to Fort Towson	8,884 00
" Pensacola to St. Augustine	2,000 00
" Detroit to Saganaw, &c.	230 14
Old King's Road from the Georgia line (by St. Augustine to New Smyrna)	3,000 00
Military Road in the State of Maine	1,000 00
Improving the Ohio and Mississippi Rivers	31,605 31
" the Navigation of the Ohio River	6,000 00
" Hyannis Harbour, Massachusetts	8,000 00
" Cleaveland Harbour, Ohio	5,500 00
Deepening the Harbour of Presque Isle	6,223 18
Deepening Sackett's Harbour	500 00
Preservation of Islands in Boston Harbour	2,000 00
Removing Obstructions in Huron Creek, Ohio	4,413 35
" " Cunningham Creek, Ohio	1,517 76
" " Ashtabula Creek, Ohio	2,000 00
" " Grand River, Ohio	3,200 00
" " Mobile Harbour, Alabama	553 00
" " Apalachicola River, Florida	1,500 00
" " Piscataqua River	2,500 00
" " Black River, Ohio	1,000 00
Building Piers on Steel's Ledge, Belfast, Maine	33 76
" at New Castle, Delaware	5,000 00
" at the Mouth of Dunkirk Harbour, N. Y.	3,000 00
" at the Mouth of Oswego Harbour, N. Y.	13,281 27
" at La Plaisance Bay, Michigan	2,977 81
Piers, Beacons, &c. in the Harbour of Saco, Maine	2,550 00
Pier adjacent to the Pier at Buffalo, New York	20,000 00
Repairing Public Piers at Port Penn, Marcus Hook, and Fort Mifflin	4,413 00
Survey of a Canal from the Atlantic to the Gulf of Mexico	308 82
Survey of the Colbert Shoals in Tennessee River	200 00
Survey of the Harbour of Nantucket, Mass.	300 00
Barracks at Savannah, Georgia	3,038 11
Military Cantonment, near St. Louis, Missouri	996 93
Balances due to certain States on account of Militia	7,591 20
Settlement of the Georgia Militia Claims	315 56
Military Academy, West Point	25,701 36
Relief of Officers, &c. engaged in the Seminole campaign	698 94
Relief of Captain Bigger's company of Rangers	135 50
Relief of sundry individuals	29,852 33
Ransom of American Captives	242 25
Revolutionary Pensions	670,627 65
Invalid and half-pay Pensions	106,592 93
Pensions to Widows and Orphans	4,412 37
Suppressions of Indian Aggressions on the Frontiers of Georgia and Florida	3,576 15
Pay, &c. of Illinois and Michigan Militia for the suppression of Indian disturbances	39,889 53
Presents to Indians	14,931 82
Contingencies of Indian Department	90,449 12
Creek Treaty, per Act 22d May, 1826	56,504 76

Emigration of the Creeks beyond the Mississippi	$31,134 25
Civilization of the Indians	5,833 00
Pay of Indian Agents	21,650 00
Pay of Sub-Agents	9,691 13
Indian Annuities	189,839 61
Choctaw Schools, (treaty 18th Oct. 1820)	8,980 42
Treaty with the Choctaws	4,077 57
Houses for Sub-Agents, Interpreters, &c.	14,324 00
Extinguishment of Claims of the Cherokee Indians to lands in Georgia	500 00
Extinguishment of the Claims of Cherokee Indians to land in North Carolina	20,613 88
Carrying into effect certain Indian Treaties, (Act 24th May, 1828)	111,791 00
Holding Treaties with the Chippewas, &c. (Act 24th May, 1828)	15,000 00
Exploring the Country west of the Mississippi, by a Delegation of Indians	6,200 00
	$4,690,223 36

From which *deduct* the following repayments:—

Arsenal at Vergennes	$68 81	
Wall round the Arsenal on Schuylkill	70 53	
Survey of the Harbour of Church Cove	4 81	
Survey of Saugatuck River and Harbour	30 03	
Survey of Piscataqua River	9 54	
Survey of Hyannis Harbour	27 00	
Repairs of Fort Constitution	1 50	
Erecting Piers at Marcus Hook, Port Penn, &c.	36 11	
House and Lot at Eastport, Maine	5 32	
Repairs of Wharf at Fort Wolcott	37 83	
Brigade of Militia	1,000 00	
Treaty with the Cherokees, (Act 20th April, 1818)	2,265 07	
Provisions for Quapaw Indians	2,000 00	
	5,556 55	
		4,684,666 81

Naval Establishment.

Pay of the Navy afloat	$918,912 72
" Shore Stations	116,197 72
Pay of Naval Constructors, Superintendents, &c.	53,600 62
Provisions	414,193 33
Medicines and Hospital Stores	48,954 86
Repairs of Vessels	468,476 65
Navy Yards	141,037 80
Navy Yard, Philadelphia	13 75
" Washington	22 17
Ordnance and Ordnance Stores	34,417 43
Building ten Sloops of War	194,690 29
Gradual Increase of the Navy	59,128 04
Gradual Improvement of the Navy	288,461 19
Prohibition of the Slave Trade	28,274 17
Survey of the Harbours of Savannah, Brunswick, &c.	1,154 87

Arrearages prior to 1827	$4,697 16
Arrearages prior to 1828	9,838 69
Outfits	25,000 00
Prize money due to Thomas Douty	19 96
Captors of Algerine Vessels	19 96
Relief of sundry individuals	13,360 68
Contingent prior to 1824	863 68
" for 1824	2,398 82
" not enumerated, for 1824	125 00
" " for 1825	108 88
" for 1826	2,822 98
" not enumerated, for 1826	169 70
" for 1827	1,218 34
" not enumerated, for 1827	3,293 45
" for 1828	201,009 73
" not enumerated, for 1828	500 00
Breakwater near the Mouth of Delaware Bay	5,000 00
Pay and Subsistence of the Marine Corps	95,679 37
Clothing " "	29,259 11
Fuel " "	6,098 17
Medicines " "	2,726 34
Barracks " "	21,827 03
Military Stores " "	1,276 67
Contingent " "	10,452 91
	$3,205,302 24

From which deduct the following repayments:—

Rewarding the Officers and Crews of the Wasp and Constitution	3,418 50	
Contingents for 1825	553 06	
Houses for Ships in Ordinary	190 00	
	4,161 56	
		3,201,140 68

DEBT.

Interest on the Funded Debt	2,357,556 67
Redemption of the 6 per cent. Stock of 1813, (loan of sixteen millions)	2,744,423 91
Redemption of the 6 per cent. Stock of 1813, (loan of ten millions	2,256,039 21
Reimbursement of Mississippi Stock	900 00
Paying the Principal and Interest of Treasury Notes	668 40
	7,359,588 19
Total	$18,244,907 91

6. *Receipts from other Sources than Customs and Public Lands, during the Year* 1828.

Dividends on Stock in the Bank of the United States	$420,000 00
From Arrears of Direct Tax	2,626 90
New Internal Revenue	19,885 68
Fees on Letters Patent	10,560 00

Cents coined at the Mint	$22,050 32
Postage of Letters	101 00
Fines, Penalties, and Forfeitures	157 45
Surplus emoluments of Officers of Customs	28,132 83
Interest on Balance due by Banks to the U. States	6,000 00
Condemned Slave Vessels, nett proceeds	10,844 79
A Person unknown $6—Spanish Treaty $35	91 00
Balances of Advances made in the War Department, repaid under 3d Sec. of Act 1st May, 1820	32,845 44
Moneys received from Great Britain, under the Convention of 15th November, 1826, for Slaves and other Property taken during the late War	1,204,960 00

7. *Receipts into the Treasury, and Appropriations made by Law, from* 1815 *to* 1827, *inclusive.*

Years.	Receipts.	Appropriations.	Years.	Receipts.	Appropriations.
1815	$50,961,237 50	$31,268,309 54	1822	$20,232,427 94	$20,508,017 81
1816	57,171,421 82	49,905,220 35	1823	20,540,666 26	20,190,113 81
1817	33,833,592 38	36,613,122 08	1824	24,381,212 79	25,830,635 95
1818	21,593,936 66	36,293,021 12	1825	26,810,858 02	22,892,544 72
1819	24,605,665 37	24,109,459 80	1826	25,260,434 21	23,255,413 09
1820	20,881,493 68	25,497,553 26	1827	22,966,363 96	23,217,288 61
1821	19,573,703 72	18,435,466 61	Totals	368,843,014 26	358,016,166 75

11. PUBLIC DEBT.

STATEMENT of the FUNDED DEBT of the UNITED STATES as it existed on the 1st January, 1829, exhibiting also the DATE of the ACTS under which the several STOCKS were constituted, and the PERIODS at which they were or are redeemable.

STOCKS.	Date of Acts.	Periods when redeemable.	Amounts.	
			dolls. cts.	*dolls. cts.*
3 per ct. Stock (Revolutionary debt)	August 4, 1790	At the pleasure of government.		13,296,249 45
Six per cent. Stock	March 24, 1814	In 1827	6,789,722 92	
Six per cent. Stock	March 3, 1815	In 1828	9,490,099 10	
		Amount at 6 pr. ct.		16,279,822 02
5 per ct. Stock (sub'n to Bank U. States)	April 10, 1816	At the pleasure of government	7,000,000 00	
Five per cent. Stock	May 15, 1820	In 1832	999,999 13	
" " "	March 3, 1821	In 1835	4,735,296 30	
Exchan. 5 p. ct. Stock	April 20, 1822	One third in 1830 }		
		" 1831 }	56,704 77	
		" 1832 }		
		Amount at 5 pr. ct.		12,792,000 20
4 1-2 per ct. Stock	May 24, 1824	In 1832	5,000,000 00	
" " "	May 26, 1824	" "	5,000,000 00	
Exch. 4 1-2 p. ct. stock	May 26, 1824	One half in 1833 }		
		" 1834 }	4,454,727 95	
" " "	March 3, 1825	One half in 1829 }		
		" 1830 }	1,539,336 16	
		Amount at 4 1-2 p. c.		15,994,064 11
			Total	58,362,135 78

Note.—$6,789,922 92, of the six per cent. Stock of 1814, by advertisement of 31st March, was made redeemable on the first of July, 1829.

12. BANK OF THE UNITED STATES.

General Statement of the Affairs of the United States' Bank in the Years 1827 and 1828.

	1827.	1828.
Dr.		
Funded Debt of the United States (various)	17,624,859 05	16,930,969 51
Bills discounted, viz.—		
On personal security	26,452,116 84	29,316,745 45
" " and Funded Debt	280,241 85	142,212 73
" " and Bank Stock, &c.	1,928,059 27	1,850,380 56
Foreign Bills of Exchange	356,470 96	340,185 93
Domestic " "	5,022,487 80	6,013,890 15
Real Estate	2,295,401 88	2,292,652 11
Banking Houses, Bonus, and Premium, &c.	1,634,260 93	1,540,806 48
Mortgages, &c.	83,982 72	79,907 38
Due from S. Smith & Buchanan, G. Williams, and J. W. McCulloch	882,635 29	
Due from James A. Buchanan and J. W. McCulloch		612,760 44
Due from United States' Bank and Offices	14,037,002 90	14,654,349 61
" State Banks	2,578,030 35	1,883,286 03
" United States	5,267 32	5,267 32
Losses chargeable to the Contingent Fund	1,803,945 06	2,228,678 21
Agent for Loan Office and Pension Fund at Office, Portsmouth	2,014 20	8,532 38
Expenses, contingent	72,016 97	69,472 18
Deficiencies	233,286 74	211,377 98
Cash, viz.—		
Notes of Bank of U. States and Branches	11,311,260 56	10.495,469 48
" other Banks	1,447,386 36	1,458,099 73
Specie	6,170,045 14	6,593,007 35
Dollars	94,220,772 19	96,728,051 01
Cr.		
Capital Stock	34,996,479 63	34,996,269 63
Bank and Branch Notes	22,259,781 71	23,541,230 10
Dividends unclaimed	60,581 45	456,005 76
Discount, Exchange, and Interest	418,625 64	284,823 03
Profit and Loss	1,237,468 76	1,518,298 61
Contingent Fund	4,297,837 35	4,380,645 53
Contingent Interest	4,840 19	500 000
Contingent Exhange	3,222 22	
Foreign Exchange	133,292 69	93,055 84
Due to Bank of United States, and Offices	13,962,876 88	15,098,524 35
" State Banks	880,629 35	1,898,979 93
" Hottinguer & Co. Paris	1,467,806 26	594,492 65
Redemption of Public Debt	926,783 44	1,452,472 09
Deposites, viz.—		
On account of Treasurer of United States	5,553,447 75	4,680,773 71
" Public Officers	1,874,991 22	1,168,500 63
" Individuals	6,142,107 65	6,563,479 06
Dollars	94,220,772 19	96,728,051 01

13. COMMERCE.

1. *Domestic Exports.*

Summary Statement of the Value of the Exports of the Growth, Produce, and Manufacture of the United States, during the Year ending on the 30th Sept. 1828.

THE SEA.

Fisheries.—Dried Fish, or Cod Fisheries	$819,926
Pickled Fish, or River Fisheries (Herring, Shad, Salmon, Mackerel)	246,737
Whale (common) Oil, and Whalebone	181,270
Spermaceti Oil and Candles	446,047

THE FOREST.

Skins and Furs	626,235
Ginseng	91,164
Of Wood.—Staves, Shingles, Boards, Lumber	1,821,906
Oak Bark, and other Dye	101,175
Naval Stores—Tar, Pitch, Rosin, and Turpentine	487,761
Ashes—Pot and Pearl	761,370

AGRICULTURE.

Of Animals.—Beef, Tallow, Hides, and Horned Cattle	719,961
Butter and Cheese	176,355
Pork (pickled), Bacon, Lard, live Hogs	1,495,830
Horses and Mules, 185,542—Sheep, 7,499	192,991
Vegetable Food.—Wheat, Flour, and Biscuit	4,464,774
Indian Corn Meal, 822,858—Rye Meal, 59,036	881,894
Rye, Oats, and other small Grain and Pulse	67,997
Potatoes, 35,371—Apples, 22,700	58,071
Rice	2,620,696
Tobacco	5,269,960
Cotton	22,487,229
All other Agricultural Products.—Indigo	1,495
Flaxseed	144,095
Hops	25,432
Brown Sugar	4,095

MANUFACTURES.

Soap and Tallow Candles	912,322
Leather, Boots, and Shoes	401,259
Saddlery, 49,758—Hats, 326,294—Wax, 134,886	1,010,338
Spirits from Grain—Beer, Ale, and Porter	203,780
Wood (including Coaches and other Carriages)	611,196
Snuff and Tobacco	210,747
Linseed Oil, and Spirits of Turpentine	22,119
Spirits from Molasses	185,096
Sugar Refined	38,207
Iron, 231,234—Cordage, 20,030—Chocolate, 3,324	254,608
Gunpowder	181,384
Lead, 4,184—Copper and Brass, 60,452	64,636
Medicinal Drugs	95,083

Cotton Piece Goods.—Printed, and Colored	$ 76,012
White	887,628
Nankeens	5,149
Twist, Yarn, and Thread	12,570
All other Manufactures of	28,873
Flax and Hemp.—Cloth and Thread	5,335
Bags, and all Manufactures of	3,365
Wearing Apparel	143,253
Combs and Buttons	60,957
Brushes	6,372
Billiard Tables and Apparatus	2,240
Umbrellas and Parasols	24,703
Leather and Morocco Skins, not sold per pound	81,221
Fire Engines and Apparatus	2,384
Printing Presses and Types	40,199
Musical Instruments	10,011
Books and Maps	46,937
Paper and other Stationery	32,026
Paints and Varnish	26,229
Vinegar	5,884
Earthen and Stone Ware	5,595
Manufactures of Glass	51,452
" Tin	5,049
" Pewter and Lead	5,545
" Marble and Stone	3,122
" Gold and Silver, and Gold Leaf	7,505
Gold and Silver Coin	693,037
Artificial Flowers and Jewelry	18,195
Molasses	601
Trunks	6,004
Bricks and Lime	4,573
Articles not distinguished in Returns.—	
Manufactured	247,990
Raw Produce	233,763
Total,	$50,669,669

2. *Foreign Exports.*

Summary Statement showing the Value of Exports of the Growth, Produce, and Manufacture of Foreign Countries, during the Year ending the 30th of September, 1828,

VALUE OF MERCHANDISE FREE OF DUTY.

Lapis Calaminaris, Teutenegue, Spelter, and Zinc	$15,131
Brimstone and Sulphur	4,311
Furs of all kinds	8,071
Hides and Skins, raw	274,099
Specimens of Botany	550
Wood (Dye and Barilla, unmanufactured Mahogany, &c.	419,981
Tin, in Pigs or Bars	7,923
Copper, in Pigs and Bars	94,277

Copper, in Plates, suited for the sheathing of ships	$ 51,322
" old	1,614
Bullion	56,251
Specie	7,494,188
	$8,427,678

VALUE OF MERCHANDISE PAYING DUTIES AD VALOREM.

Manufactures of Wool.—Cloths and Cassimeres	$109,315
Flannels and Baizes	12,022
Blankets	24,840
Hosiery, Gloves, Mits, &c.	2,086
Worsted and Stuff	26,099
All Manufactures paying Duty of 30 per cent.	17,152
Cotton.—Printed and Colored	1,402,103
White	406,623
Hosiery, Gloves, Mits, &c.	44,988
Twist, Yarn, and Thread	46,736
Nankeens	324,274
All other Manufactures paying Duty of 25 per cent.	18,015
Silk, from India	713,610
from other places	509,572
Vestings and Plaids	3,400
Flax	823,900
Hemp	434,807
Iron and Steel	200,872
Copper	10,910
Brass	38,908
Tin, 260—Pewter, 906	1,116
Wood, including Cabinet Wares	11,337
Leather, including Saddles, Bridles, and Harness	3,216
Glass, not subject to a specific duty	39,045
Wares, China and earthen, stone, &c.	132,419
Gold, Silver, &c.	54,990
Lace	75,579
Marble, and Manufactures of, 420—Slates and Tiles, 810	1,230
Prepared Quills, 341—Black Lead Pencils, 500	841
Paper Hangings	1,326
Quicksilver	298,088
Oil Cloth, and Oil Cloth Carpeting	2,446
Hats, Caps, and Bonnets	11,943
Opium	139,799
Unmanufactured Tin	39,255
" Silk	47,277
" Wool	3,094
Articles not specially enumerated at 12½ per cent.	616,211
" " " 15 "	836,939
" " " 20 "	21,579
" " " 25 "	59,033
" " " 30 "	122,334
	$7,689,381

VALUE OF MERCHANDISE PAYING SPECIFIC DUTY.

Carpeting	$1,566	Indigo	$562,768
Cotton Bagging	3,478	Cotton	22,810
Wines	327,806	Gunpowder	5,788
Spirits from Grain	13,568	Glue	29
" other materials	241,773	Paints	10,934
Molasses	9,488	Lead—Pig, Bar, & Shot	118,037
Beer, Ale, and Porter	3,626	Cordage	102,614
Vinegar	1,192	Twine, Pack Thread and Seine	7,487
Oils	54,662	Corks	2,613
Teas	679,924	Copper Nails and Spikes	76
Coffee	1,497,097	Anchors and Castings	2,208
Cocoa	345,674	Fire-Arms	19,870
Sugar, brown and white	826,833	Steel	18,472
" candy and loaf	1,666	Salt	10,718
Fruits	39,204	Coal	682
Candles, Sperm, & Tallow	28,007	Potatoes	68
Cheese	6,878	Paper	53,224
Soap	7,560	Books	12,749
Tallow	25,893	Glass	56,769
Beef and Pork	34,284	Fish	400
Vitriol	14	Cigars	39,945
Spices	181,307	Playing Cards	1,246
Tobacco, manufactured	458		
Wool, not exceeding 33⅓ per square yard,	1,326 square yards		750
Sail Duck " "	6,019 "		1,382
Iron—Tacks, Brads, Sprigs and Nails, Spikes			4,627
Rods, brazier or round, nail or spike, slit or rolled			19,466
Sheets and Hoops			3,796
Shoes and Slippers, Boots and Bootees			808
			$5,477,958
Value of Merchandise free of Duty			8,427,678
" " paying Duties *ad Valorem*			7,689,381
" " paying specific Duty			5,477,958
			$21,595,017

3. *Imports.*

1. *Value of Merchandise Imported into the United States from Foreign Countries, free of Duty, paying Duties ad Valorem, and specific Rates of Duty, from* 1821 *to* 1827, *inclusive.*

Years.	Free of Duty.	Paying Duties ad Valorem.	Paying specific Duties.	Total.
1821	$10,082,313	$30,894,917	$21,608,494	$62,585,724
1822	7,298,708	46,361,215	29,581,618	83,241,541
1823	9,048,288	40,621,552	27,909,427	77,579,267
1824	12,563,773	41,250,833	26,734,401	80,549,007
1825	10,947,510	55,923,959	29,468,606	96,340,075
1826	12,567,769	42,713,330	29,693,378	84,974,477
1827	11,855,104	41,956,121	25,672,842	79,484,068

2. *Value of Merchandise Imported into the United States in American and Foreign Vessels, from* 1821 *to* 1827, *inclusive.*

Years.	Free of duty.			Paying duties ad valorem.		
	In American vessels.	In foreign vessels.	Total.	In American vessels.	In foreign vessels.	Total.
1821	$8,095,118	$1,987,195	$10,082,313	$29,118,313	$1,776,604	$30,894,917
1822	6,731,123	567,585	7,298,708	41,955,134	4,406,081	46,361,215
1823	8,508,504	539,784	9,048,288	36,511,345	4,110,207	40,621,552
1824	11,730,944	832,829	12,563,773	37,825,847	3,424,986	41,250,833
1825	10,310,224	637,286	10,947,510	53,164,660	2,759,299	55,923,959
1826	12,047,329	520,440	12,567,769	40,047,110	2,666,220	42,713,330
1827	11,432,689	442,415	11,855,104	39,423,835	2,532,286	41,956,121

4. COMMERCE OF EACH STATE AND TERRITORY.

STATEMENT of the COMMERCE of each STATE and TERRITORY, commencing on the 1st day of October, 1827, and ending on the 30th day of September, 1828.

States and Territories.	Value of Merchandise Imported.			Value of Merchandise Exported.		
	In American vessels.	In foreign vessels.	Total.	Domestic produce.	Foreign produce.	Total.
	Dolls.	Dolls.	Dolls	Dolls.	Dolls.	Dolls.
Maine . . .	1,240,608	6,201	1,246,809	1,003,642	15,875	1,019,517
N. Hampshire	299,849	. . .	299,849	115,947	8,486	124,433
Vermont . .	177,396	143	177,539	239,610	. . .	239,610
Massachusetts	14,835,412	235,032	15,070,444	4,096,025	4,929,760	9,025,785
Rhode Island	1,127,347	879	1,128,226	541,675	180,491	722,166
Connecticut .	485,174	. . .	485,174	493,925	27,620	521,545
New York .	39,050,506	2,877,286	41,927,792	12,362,015	10,415,634	22,777,649
New Jersey .	706,872	. . .	706,872	1,892	. . .	1,822
Pennsylvania	12,286,693	597,715	12,884,408	3,116,601	2,935,479	6,051,480
Delaware . .	15,260	. . .	15,260	27,028	2,367	29,395
Maryland . .	5,393,944	235,750	5,629,694	3,107,819	1,226,603	4,334,422
Dist. of Colum.	167,958	13,707	181,665	705,581	1,862	707,443
Virginia . .	290,236	85,002	375,238	3,324,616	15,569	3,340,185
North Carolina	259,720	8,895	268,615	522,498	1,249	523,747
South Carolina	843,438	398,610	1,242,048	6,508,570	42,142	6,550,712
Georgia . .	199,163	109,506	308,669	3,104,425	. . .	3,104,425
Alabama . .	120,184	51,725	171,909	1,174,737	7,822	1,182,559
Louisiana . .	4,341,923	1,875,958	6,217,881	10,163,342	1,784,058	11,947,400
Ohio . . .	. . .	. . .	. . .	. . .	. . .	. . .
Florida Terri.	106,196	62,096	168,292	60,321	. . .	60,321
Michigan do.	3,440	. . .	3,440	. . .	. . .	. . .
Total .	81,951,319	6,558,505	88,509,824	50,669,669	21,595,017	72,264,686

5. TONNAGE.

A Comparative View of the Registered and Enrolled and Licensed Tonnage of the United States from 1815 *to* 1827 *inclusive.*

Years.	Registered Tonnage.	Enrolled & Licensed Tonnage.	Total Tonnage.
	Tons and 95ths.		
1815	854,294 74	513,833 04	1,368,127 78
1816	800,759 63	571,458 85	1,372,218 53
1817	809,724 70	590,186 66	1,399,911 41
1818	606,088 64	609,095 51	1,225,184 20
1819	612,930 44	647,821 17	1,260,751 61
1820	619,047 53	661,118 66	1,280,166 24
1821	619,096 40	679,062 30	1,298,958 70
1822	628,150 41	696,548 71	1,324,699 17
1823	639,920 76	696,644 87	1,336,565 68
1824	669,972 60	719,190 37	1,389,163 02
1825	700,787 08	722,323 69	1,423,111 77
1826	737,978 15	796,212 68	1,534,190 83
1827	747,170 44	873,437 34	1,620,607 78

14. PUBLIC LANDS.

Purchase and Sale of Public Lands from the 4th July, 1776, *to the 31st of December,* 1825.

	Quantity of land purchased by the United States.	Expenses of selling the public lands.	Amount of Sales.	Quantity of land remaining unsold, 1st Jan. 1826.	Land appropriated for Schools and Colleges.
	Acres.	Dollars.	Dollars.	Acres.	Acres.
Ohio . .	24,388,745·80	498,434·48	16,235,123·75	6,191,927·53	746,585·16
Indiana .	16,060,036.70	169,070·17	5,611,197·22	12,131,461·90	492,192·13
Illinois .	29,517,262·62	103,848·75	1,729,145·58	24,161,662·93	866,003·96
Michigan	17,561,470·00	19,990·29	416,096·07	16,600,554·26	510,858·61
Missouri .	39,119,018·89	66,475·11	1,971,217·84	35,522,350·69	1,132,719·41
Arkansas	33,661,120·00	7,499·60	49,115·90	31,441,309·31	958,071·11
Louisiana	31,463,040·00	20,451·62	265,907·22	25,392,602·67	920,061 66
Mississippi	14,188,454·00	80,176·37	2,220,132·81	11,643,275·05	440,203·72
Alabama	24,482 159·83	186,776·91	11,763,351·88	20,268,863·58	726,139·99
Florida .	31,254,120·00	2,228·54	90,591·92	30,237,952·17	914,250·00
	261,695,427·84	1,154,951·84	40,351,880·19	213,591,960·09	7,707,085·75

15. INDIANS.

The whole number of Indians, within the limits of the United States both east and west of the Mississippi, is estimated in round numbers at 300,000, of whom 120,000 reside in the States and Territories. The following tables are abridged from those contained in the work entitled "*Indian Treaties,*" published by order of the Department of War in the year 1826.

1. STATEMENT showing the NAMES and NUMBERS of the DIFFERENT TRIBES of INDIANS now remaining within the LIMITS of the SEVERAL STATES and TERRITORIES, and the QUANTITY of LAND claimed by them RESPECTIVELY.

TRIBES.	Number of each Tribe.	Number of Acres claimed by each Tribe.
MAINE.		
St. John's Indians	300	
Passamaquoddies	379	100
Penobscots	277	92,160
	956	92,260
MASSACHUSETTS.		
Marshpee	320	
Herring Pond	40	
Martha's Vineyard	340	
Troy	50	
	750	
RHODE ISLAND.		
Narragansett	420	3,000
CONNECTICUT.		
Mohegan	300	4,000
Stonington	50	300
Groton	50	
	400	4,300
NEW YORK.		
Senecas	2325	
Tuscaroras	253	
Oneidas	1096	
Onondagas	446	
Cayugas	90	246,675
Stockbridge	273	
Brotherton	360	
St. Regis Indians	300	
	5143	246,675
VIRGINIA.		
Nottaways	47	27.000
SOUTH CAROLINA.		
Catawbas	450	144,000
OHIO.		
Wyandotts	542	163,840
Shawanees	800	117,615
Senecas	551	55,505
Delawares	80	5,760
Ottowas	377	50,581
	2350	393,301
MICHIGAN TERRITORY.		
Wyandotts	37	} 7,057,920
Pottawatamies	106	
Chippewas & Ottawas	18,473	
Menomeenees	3,900	
Winnebagoes	5,800	
	28,316	7,057,920
INDIANA.		
Miami and Eel River Indians	1,073	10,104,000
ILLINOIS.		
Menomeenees	270	} 5,314,560
Kaskaskias	36	
Sauks and Foxes	6,400	
	6,706	5,314,560

TRIBES.	Number of each Tribe.	Number of Acres claimed by each Tribe.
INDIANA & ILLINOIS.		
Pottawatamies and Chippewas	3,900	
GEORGIA & ALABAMA.		
Creeks	20,000	9,537,920
GEORGIA, ALABAMA, and TENNESSEE.		Alabama
Cherokees	9,000	7,272,576
		Tennessee 1,055,680
MISSISSIPPI & ALABAMA.		
Choctaws	21,000	
MISSISSIPPI.		
Chickasaws	3,625	15,705,000
FLORIDA TERRITORY.		
Seminoles and Others	5,000	4,032,640
LOUISIANA.		
Billoxie	55	
Apolashe	45	
Pascagoula	111	
Addees	27	
Yaltassee	36	
Coshattees	180	
Caddow	450	
Delawares	51	
Choctaws	178	
Shawanees	110	
Natchitoches	25	
Quapaws	8	
Piankeshaws	27	
	1,313	
MISSOURI.		
Delawares	1,800	21,120
Kickapoos	2,200	9,600
Shawanees	1,383	14,086
Weas	327	
Ihoways	1,100	
	5,810	44,806
MISSOURI & ARKANSAS TERRITORY.		
Osages	5,200	3,491,840
Piankeshaws	207	
	5,407	3,491,840
ARKANSAS TERRITORY.		
Cherokees	6,000	4,000,000
Quapaws	700	
Choctaws		8,858,560
	6,700	12,858,560
Total	129,266	77,402,318

2. ABSTRACT of INDIAN TREATIES, whereby the UNITED STATES acquired the TITLE to LANDS in the STATES of OHIO, INDIANA, ILLINOIS, MISSOURI, MISSISSIPPI, and ALABAMA, and in the TERRITORIES of MICHIGAN and ARKANSAS.

Tribes of Indians.	Date of Treaty.	Where the Lands are situate.	Estimated contents in Acres.
Wyandot and others	3d Aug. 1795	Ohio and Indiana	17,724,489
Delaware and others	7th June, 1803	Indiana and Illinois	1,634,048
Kaskaskia	13th Aug. 1803	Illinois	8,608,167
Delaware	18th Aug. 1804	Indiana	1,910,717
Wyandot and others	4th July, 1805	Ohio	2,726,812
Delaware and others	21st Aug. 1805	Indiana	1,244,211
Piankeshaw	30th Dec. 1805	Illinois	2,616,921
Ottawa and others	17th Nov. 1807	Ohio and Michigan	5,937,760
Delaware and others	30th Sept. 1809	Indiana	2,685,386
Kickapoos	9th Dec. 1809	Illinois	282,547
Kiakapoo	9th Dec. 1809	Indiana and Illinois	113,344
Sacs and Fox tribes	3d Nov. 1804	Illinois and Missouri	9,000,000
United tribes of Ottawas	24th Aug. 1816	Illinois and Missouri	9,911,411
Wyandot and others	29th Sept. 1817	Ohio, Illinois, & Mich.	4,776,971
Peoria and others	26th Sept. 1818	Illinois	7,138,398
Pottawatima	2d Oct. 1818	Indiana and Illinois	899,615
Miami	6th Oct. 1818	Indiana and Ohio	7,087,431
Wyandot	20th Sept. 1818	Michigan	5,000
Great and Little Osage	10th Nov. 1808	Missouri and Arkansas	48,003,815
Do. do. do.	25th Sept. 1818	Arkansas & west thereof	7,392,000
Quapaw	24th Aug. 1818	Arkansas & Louisiana	29,190,560
Kickapoo of Vermilion	30th Aug. 1819	Indiana and Illinois	2,343,049
Kickapoo	30th July, 1819	Illinois	969,400
Chippewa	24th Sept. 1819	Michigan	7,451,520
Chippewa	16th June, 1820	Michigan	10,240
Wea	11th Aug. 1820	Indiana	30,000
Ottawas and others	29th Aug. 1821	Michigan and Indiana	4,933,350
Quapaw	15th Nov. 1824	Arkansas	1,500,000
Choctaw	17th Dec. 1801	Mississippi	2,245,720
Choctaw	16th Nov. 1805	Mississippi & Alabama	5,987,044
Choctaw	18th Oct. 1820	Mississippi	5,417,267
Choctaw	20th Jan. 1825	Arkansas	5,030,912
Chickasaw	23d July, 1805	Alabama	345,600
Chickasaw	20th Sept. 1816	Mississippi	408,000
Cherokee	7th Jan. 1806	Tennessee & Alabama	1,209,600
Cherokee	4th Oct. 1816	Alabama	1,395,200
Cherokee	27th Feb. 1819	Alabama & Tennessee	738,560
Creek	9th Aug. 1814	Georgia, Mississippi, & Alabama	22,244,800

RECAPITULATION OF THE ABOVE TABLE.

From the foregoing statement it appears, that the United States have acquired lands from the Indians as follows.

	Acres.		Acres.		Acres.
Ohio	24,854,888	Louisiana	2,492,000	Missouri	36,169,383
Indiana	16,243,685	Alabama	19,586,560	Michigan Territory	17,561,470
Illinois	24,384,744	Mississippi	12,475,231	Arkansas Territory and west thereof	55,451,904
				Making an aggregate of	209,219,865

3. STATEMENT of ANNUITIES payable by the UNITED STATES to INDIAN TRIBES, showing their AMOUNT, and the TIMES for which they are RESPECTIVELY PAYABLE.

Tribes.	Amount of Annuity.	Time.	Tribes.	Amount of Annuity.	Time.
Six Nations . .	$4,750	Permanent.	Quapaws . . .	$1,000	Ending in 1835.
Wyandots . .	6,725	"	Peoria & others .	300	Ditto 1830.
Shawanees . .	3,000	"	Kickapoos of Illinois .	2,000	Ditto 1834.
Shawanees & Senecas .	2,000	"	Kickapoos of Vermilion	2,000	Ditto 1829.
Delawares . .	5,500	"	Ioways . . .	500	Ditto 1834.
Weas	3,000	"	Kansas	3,500	Ditto 1845.
Piankeshaws . .	8,800	"	Creeks	24,500	Permanent.
Kaskaskias . .	1,000	"	Chickasaws . .	3,000	"
Ottawas . . .	4,300	"	Chickasaws . .	20,000	Ending in 1833.
Ottawas . . .	1,000	Ending in 1832.	Cherokees . . .	10,000	Permanent.
Ottawas . . .	1,590	Ditto 1831.	Choctaws . . .	12,300	"
Chippewas . .	4,800	Permanent.	Choctaws . . .	6,000	Ending in 1836.
Chippewas . .	1,000	Ending in 1832.	Choctaws . . .	6,000	Ditto 1840.
Pottawatimies .	4,400	Permanent.	Florida Indians .	7,000	Ditto 1843.
Pottawatimies .	1,300	Ending in 1832.			
Pottawatimies .	5,000	Ditto 1841.			
Pottawatimies .	1,000	Ditto 1836.	Amount of Permanent Annuities .	108,375	
Miamies . . .	17,300	Permanent.			
Eel-Rivers . .	1,100	"			
Sacs and Foxes .	1,000	"	Amount of limited		
Sacs and Foxes .	1,000	Ending in 1834.	Annuities . .	61,200	
Osages	1,500	Permanent.			
Osages	7,000	Ending in 1845.	Aggregate Amount		
Quapaws . . .	1,000	Permanent.	of Annuities . .	$179,575	

16. POST OFFICE.

1. NUMBER of POST OFFICES, AMOUNT of POSTAGE paid to POSTMASTERS, INCIDENTAL EXPENSES, TRANSPORTATION of the MAIL, NET REVENUE, and EXTENT of MILES, from 1789 to 1828.

Years.	No. of Post Offices.	Amount of Postage.	Amount paid to Postmasters.	Incidental Expenses.	Transportation of the Mail.	Net Revenue.	Extent in Miles Post Roads.
1789	75	. .	. .	. .	. .	. .	. .
1790	75	$37,935	$8,198	$1,861	$22,081	$5,795	1,875
1795	453	160,620	30,272	12,262	75,359	42,727	13,207
1800	903	280,804	69,243	16,107	128,644	66,810	20,817
1805	1558	421,373	111,552	26,180	239,635	44,006	31,076
1810	2300	551,684	149,438	18,565	327,966	55,715	36,406
1815	3000	1,043,065	241,901	18,441	487,779	294,944	43,748
1816	3260	961,782	265,944	16,508	521,970	157,360	48,673
1817	3459	1,002,973	303,916	23,410	589,189	86,458	52,089
1818	3618	1,130,235	346,429	24,792	664,611	94,403	59,473
1819	4000	1,204,737	375,828	24,152	717,881	86,876	67,586
1820	4500	1,111,927	352,295	26,206	782,425	——	72,492
1821	4650	1,059,087	337,599	31,003	815,681	——	78,808
1822	4799	1,117,490	355,299	23,655	788,618	——	82,763
1823	4043	1,130,115	360,462	29,069	767,464	——	84,860
1824	5182	1,197,758	383,804	35,276	768,939	9,739	84,860
1825	5677	1,306,525	411,183	32,214	785,646	77,482	94,052
1826	6150	1,447,703	447,727	33,885	885,100	80.991	94,052
1827	7003	1,534,633	486,411	40,203	942,345	55.574	105,336
1828	7530	1,659,915	548,049	55,583	1,086,313	——	——

2. Rates of Postage.

For Single Letters, composed of One Piece of Paper.

Any distance, not exceeding	30 miles	6	cents.
Over 30, and not exceeding	80 "	10	"
Over 80, and not exceeding	150 "	12½	"
Over 150, and not exceeding	400 "	18¾	"
Over 400 miles		25	"

Double Letters, or those composed of two pieces of paper, are charged with double those rates.

Triple Letters, or those composed of three pieces of paper, are charged with triple those rates.

Quadruple Letters, or those composed of four pieces of paper, are charged with quadruple those rates.

All Letters, weighing one ounce *avoirdupois*, or more, are charged at the rate of single postage for each quarter of an ounce, or quadruple postage for each ounce, according to their weight; and no letter can be charged with more than quadruple postage, unless its weight exceeds one pound *avoirdupois*.

The postage on *Ship Letters*, if delivered at the office where the vessel arrives, is six cents; if conveyed by post, two cents in addition to the ordinary postage.

Newspaper Postage.

For each Newspaper, not carried out of the state in which it is published; or if carried out of the state, but carried not over 100 miles, 1 cent.
Over 100 miles, and out of the state in which it is published, 1½ "

Magazines and Pamphlets.

If published	periodically,	dist. not exceeding 100 miles,	1½	cents p.	sheet.
Ditto	do.	distance over 100 "	2½	"	"
If *not* pub.	periodically,	dist. not exceeding 100 "	4	"	"
Ditto	do.	distance over 100 "	6	"	"

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17. COINAGE.

The operations of coinage at the Mint commenced in the year 1792. The coinage effected from that period to the 1st of January, 1829, was as follows.

Gold Coins: 132,592 eagles; 1,344,359 half eagles; 39,239 quarter eagles—making 1,566,190 pieces of gold coin, amounting to $8,395,812·50.

Silver Coins: 1,439,517 dollars; 41,604,347 half dollars; 1,855,629 quarter dollars; 5,526,250 dimes; 265,543 half dimes—making 50,691,286 pieces of silver coin, amounting to $23,241,499·90.

Copper Coins: 50,882,042 cents; 6,137,513 half cents, making 57,020,555 pieces of copper coin, amounting to $539,512·97½.

Total Amount—109,278,031 pieces of coin, making $32,176,825·37½.

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18. PATENTS.

By the following tables, which have been compiled from the official statements of the Patent Office, it appears that the whole number of patents issued from 1790 to 1828 inclusive is 5516.

1. *Table showing the Number of Patents issued from* 1790 *to* 1814, *inclusive.*

Years.	No.	Years.	No.	Years.	No.	Years.	No.
1790	2	1797	51	1804	84	1811	219
1791	35	1798	26	1805	55	1812	260
1792	10	1799	44	1806	62	1813	152
1793	20	1800	25	1807	102	1814	214
1794	24	1801	46	1808	155		
1795	11	1802	72	1809	204	Total	2227
1796	45	1803	91	1810	218		

2. *Table showing the Number of Patents issued from* 1815 *to* 1828, *inclusive, and also the Number issued to Persons residing in each State for each Year respectively.*

States.	1815	1816	1817	1818	1819	1820	1821	1822	1823	1824	1825	1826	1827	1828	Total
Maine . .	1	1	1	2	..	6	3	9	6	7	17	29	16	12	110
Mass. . .	21	32	31	37	20	25	19	22	23	23	26	33	39	51	402
N. Hamp.	1	6	10	11	5	3	..	2	4	2	4	3	3	5	59
R. Island	4	1	1	12	2	2	5	5	1	7	10	8	7	10	75
Connecticut	20	17	7	17	8	17	7	17	11	17	12	14	19	28	211
Vermont .	3	4	5	1	9	4	4	8	5	5	7	3	11	10	79
New York	57	53	39	70	36	41	74	74	60	82	112	116	109	175	1098
New Jersey	8	11	1	6	2	2	7	6	9	15	10	6	7	6	96
Pennsylva.	23	30	19	33	23	8	13	27	20	25	38	35	37	54	385
Delaware	..	1	..	4	1	..	..	..	1	2	1	1	2	2	15
Maryland	9	13	19	15	12	13	8	8	3	8	11	12	17	20	168
Virginia	8	9	9	15	11	6	10	12	10	9	15	13	18	19	164
N. Carolina	1	3	1	..	3	1	2	1	2	1	3	12	25	3	58
S. Carolina	..	1	..	..	6	2	2	4	2	2	3	5	3	10	40
Georgia .	..	..	..	2	1	1	1	..	..	4	..	..	..	7	16
Ohio . .	..	6	1	5	1	6	6	1	5	11	10	10	16	30	108
Kentucky	1	7	1	3	..	3	..	1	..	4	5	3	1	11	40
Tennessee	..	2	1	2	2	3	..	1	1	2	2	1	5	7	29
Illinois .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Indiana .	..	..	..	1	2	2	..	..	1	1	4	1	3	6	21
Alabama .	..	..	..	..	..	..	1	1	1	2	1	..	..	..	6
Mississippi	..	..	..	..	..	..	..	..	..	1	1	1	..	..	3
Louisiana	1	..	1	2	..	..	2	1	2	2	1	1	..	..	13
Missouri .	..	..	..	..	..	..	..	1	2	..	1	..	2	..	6
Dist. Col.	2	8	4	5	3	1	4	3	2	2	7	5	4	1	51
Uncertain	5	4	2	5	2	..	3	..	..	..	..	..	..	..	21
England .	..	..	..	..	..	1	..	..	1	2	1	4	3	3	15
															3289

19. MILITARY POSTS.

List of Military Posts and Arsenals, and the Places in which they are Situate.

Posts.	State or Territory.
Fort Brady	Michigan Territory.
Fort Mackinac	"
Fort Howard, Green Bay	"
Fort Dearborn	"
Fort Gratiot	"
Fort Niagara	New York.
Madison Barracks	New York.
Hancock Barracks	Maine.
Fort Sullivan	Maine.
Fort Preble	Maine.
Fort Constitution	New Hampshire.
Fort Independence	Massachusetts.
Fort Wolcott	Rhode Island.
Fort Trumbull	Connecticut.
West Point	New York.
Fort Columbus	New York.
Fort Delaware	Delaware.
Fort McHenry	Maryland.
Fort Severn	Maryland.
Fort Washington	Maryland.
Fortress Monroe	Virginia.
Fort Johnston	North Carolina.
Fort Moultrie	South Carolina.
Fort Johnson	South Carolina.
Oglethorpe Barracks	Georgia.
Fort Marion	Florida.
Fort Snelling	Upper Mississippi.
Fort Crawford	Upper Mississippi.
Fort Winnebago	Michigan Territory.
Fort Armstrong	Upper Mississippi.
Cantonment Leavenworth	Right Bank of the Missouri.
Jefferson Barracks	Missouri.
Cantonment Gibson	On the Arkansas.
Cantonment Jesup	Louisiana.
Cantonment Towson	On Red River.
Baton Rouge	Louisiana.
Fort Wood	Louisiana.
Fort Pike	Louisiana.
Cantonment Clinch	Florida.
Cantonment Brooke	Florida.
Cantonment King	Florida.
Fort Mitchell	Alabama.
Arsenal, Watertown	Massachusetts.
Arsenal, Watervliet	New York.
Arsenal, Rome	New York.
Arsenal, Pittsburg	Pennsylvania.
Arsenal, Frankford	Pennsylvania.
Arsenal, Baltimore	Maryland.
Arsenal, Washington	District of Columbia.
Arsenal, near Richmond	Virginia.
Arsenal, Augusta	Georgia.
Arsenal, Baton Rouge	Louisiana.

20. VESSELS OF WAR.

Ships of the Line.—7.	Guns.	
Independence	74	In ordinary.
Franklin	74	"
Washington	74	"
Columbus	74	"
Ohio	74	"
North Carolina	74	"
Delaware	74	Commission.
Frigates—1 *Class.*—6.		
United States	44	Ordinary.
Constitution	44	"
Guerriere	44	Commission.
Java	44	"
Potomac	44	Ordinary.
Brandywine	44	Commission.
2*d Class*—4.		
Congress	36	Ordinary.
Constellation	36	"
Macedonian	36	Commission.
Fulton (Steam)	30	Ordinary.
Corvettes–3*d Class.*—2.		
John Adams	24	Ordinary.
Cyane	24	"

Sloops of War.—12.	Guns.	
Hornet	18	Commiss'n.
Erie	18	"
Ontario	18	"
Peacock	18	"
Boston	18	"
Lexington	18	"
Vincennes	18	"
Warren	18	"
Natchez	18	"
Fairfield	18	"
Vandalia	18	"
St. Louis	18	"
Schooners.—7.		
Dolphin	12	Commiss'n.
Grampus	12	"
Porpoise	12	"
Shark	12	"
Fox	3	Ordinary.
Alert (store ship)		"
Sea Gull (Galliot)		"

Vessels building at	Line.	Frigates.
Portsmouth	1	1
Charlestown	2	0
Brooklyn	0	2
Philadelphia	1	1
Washington	0	1
Gosport	1	1
	5	6

21. NAVY YARDS.

There are seven Navy Yards in the United States, as follows.

No. 1. The Navy Yard at Portsmouth, New Hampshire, is situated on an island, on the east side of Piscataqua river, within the jurisdiction of Maine, contains fifty-eight acres, and cost 5,500 dollars.

No. 2. The Navy Yard at Charlestown, Massachusetts, is situated on the north side of Charles river, on a point of land east of the town of Charlestown, contains thirty-four acres, exclusive of extensive flats, and cost 39,214 dollars, including commissions and charges.

No. 3. The Navy Yard at New York is situated on Long Island opposite to the city of New York, on the Wallabout Bay, contains forty acres, including the Mill Pond, and cost 40,000 dollars.

No. 4. The Navy Yard at Philadelphia is situated on the west side of the river Delaware, within the District of Southwark, adjoining the city of Philadelphia, in the state of Pennsylvania, contains eleven acres, to low water mark, and cost 37,000 dollars.

No. 5. The Navy Yard at Washington, in the District of Columbia, is situated on the eastern branch of the river Potomac, contains thirty-seven acres, and cost 4,000 dollars.

No. 6. The Navy Yard at Gosport is situated on the south branch of Elizabeth river, adjoining the town of Portsmouth, in the state of Virginia, contains sixteen acres, and cost 12,000 dollars.

No. 7. The Navy Yard at Pensacola, in Florida.

22. MILITIA.

Table showing the aggregate Number of the Militia of the United States in the Years

States, &c.	1811.	1813.	1816.	1822.	1824.	1826.	1827.
Maine . . .	. .	. .	. .	37,042	38,221	38,364	40,209
New Hampshire	24,805	24,405	24,902	29,211	28,705	29,135	30,159
Massachusetts .	70,710	70,530	69,175	52,708	53,842	55,255	54,935
Rhode Island .	4,200	4,211	8,255	8,941	10,812	9,956	25,581
Connecticut .	20,384	21,666	18,309	22,671	26,288	25,764	9,460
Vermont . . .	20,439	20,273	20,259	23,976	25,581	25,581	25,731
New York . .	95,324	98,606	95,026	138,964	146,719	149,409	150,027
New Jersey . .	33,740	33,891	36,966	39,568	42,283	42,283	42,283
Pennsylvania .	94,074	99,414	99,414	143,923	158,512	158,512	167,775
Delaware . .	8,346	7,451	7,448	7,451	7,451	7,451	7,451
Maryland . .	33,410	32,189	32,189	32,189	32,189	40,091	40,091
Virginia . . .	79,429	75,780	83,847	94,552	96,709	100,206	100,662
North Carolina	50,177	50,992	43,217	41,873	58,453	60,976	60,660
South Carolina	32,958	33,729	32,202	33,729	28,220	36,429	36,429
Georgia . . .	25,243	25,729	27,480	29,661	29,651	29,651	39,056
Alabama . . .	. .	. .	. .	. .	11,281	21,061	23,000
Mississippi . .	2,151	5,291	. .	. .	5,291	5,291	12,274
Louisiana . .	5,945	. .	8,768	10,189	10,189	10,642	5,291
Tennessee . .	16,822	29,183	29,193	36,146	42,685	42,685	42,685
Kentucky . .	40,599	44,442	49,719	61,313	68,013	63,503	70,266
Ohio	28,099	35,275	40,832	86,021	94,896	110,188	110,364
Indiana . . .	2,067	4,160	5,010	14,990	15,818	37,787	37,787
Illinois . . .	. .	. .	. .	2,031	8,310	8,310	8,310
Missouri . . .	. .	. .	2,812	12,030	3,521	3,929	3,824
Michigan . .	1,028	. .	. .	1,707	1,503	1,503	1,503
Arkansas . .	. .	. .	. .	. .	. . .	2,028	2,028
District of Colum.	2,245	2,252	2,252	. .	2,600	2,317	2,317
Total .	694,735	719,449	748,566	977,458	1,047,743	1,118,307	1,150,158

23. INTERNAL IMPROVEMENTS.

1. Canals.

The following list, which was drawn up for the "Yeoman's Gazette," gives a summary view of the principal canals, now finished, in progress, or in immediate contemplation in the United States.

1. *Middlesex Canal.*—This has been finished and in operation for several years; its length is 29½ miles; it has 136 feet lockage. It runs from Boston harbour to Chelmsford, in Massachusetts.

2. *Blackstone Canal.*—This has been in operation between one and two years. Its length is 45 miles, from Worcester, Massachusetts, to Providence, Rhode Island.

3. *Farmington Canal.*—This is unfinished. Length 37 miles, from Northampton, Mass., to New Haven, Connecticut.

4. *Hudson and Erie Canal.*—This is in operation. Length 360 miles, from Albany to Buffalo, N. York.

5. *Champlain Canal.*—Completed; length 63 miles, from Albany to White Hall.

6. *Oswego Canal.*—Completed; length 38 miles, from Salina to Oswego, connecting the Hudson and Erie canal with Lake Ontario.

7. *Seneca Canal.*—Completed; its length 20 miles, connecting the Seneca and Cayuga lakes with Hudson and Erie canal.

8. *Delaware and Hudson Canal.*—Length 65 miles, from Delaware, in Orange county, to the Hudson, near Kingston.

9. *Morris Canal.*—This is in progress; its length 86 miles, from Easton to Newark, N. Jersey.

10. *Chesapeake and Delaware Canal.*—Completed; length 14 miles, from Delaware river to Chesapeake bay.

11. *Port Deposite Canal.*—Completed; length 10 miles, from Port Deposite, on the Susquehannah, to the Maryland line.

12. *Chesapeake and Ohio Canal.*—This was begun on the 4th of July, 1828, when ground was broken by the President of the United States. Length 360 miles, from Georgetown, District of Columbia, to near Pittsburg, Pennsylvania.

13. *Ohio State Canal.*—Unfinished; length 306 miles, from Cleveland, on Lake Erie, to the Ohio, at the mouth of the Sciota.

14. *Miami Canal.*—Unfinished; length 265 miles, from Cincinnati to the Maumee, near the head of Lake Erie.

15. *Lehigh Canal.*—Unfinished; length 46 miles, from Stoddartsville, on the Lehigh, to Easton, on the Delaware.

16. *Little Schuylkill Canal.*—Its length 25 miles from the mouth of Little Schuylkill river fo the coal mines.

17. *Conestogo Canal.*—Length 18 miles, from Lancaster to the mouth of Conestogo creek.

18. *Schuylkill Canal.*—Finished; length 108 miles, from Philadelphia to Mount Carbon.

19. *Union Canal.*—Finished; length 79 miles, from Reading to Middletown.

20. *Pennsylvania Canal.*—In progress, it having been commenced at both extremities; length 296 miles, from Middletown to Pittsburg.

The three last mentioned canals form a line from Philadelphia to the Ohio, at Pittsburg, and may be considered parts of the same great enterprise.

21. *Ohio and Erie Canal.*—Its length 213 miles, from Pittsburg to Erie, on Lake Erie.

22. *Delaware Canal.*—This will run from Philadelphia to meet the Delaware and Hudson Canal. It has already been begun.

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2. AMOUNT of MONEY expended in each STATE and TERRITORY, by the UNITED STATES, upon WORKS of INTERNAL IMPROVEMENT, from the ADOPTION of the FEDERAL CONSTITUTION to the 1st Day of October, 1828.

Maine	$11,724 22	Tennessee	4,200 00
Massachusetts	104,042 46	Ohio	390,159 03
Connecticut	2,069 97	Indiana	108,623 88
Rhode Island	195 19	Mississippi	49,385 52
New York	68,138 45	Illinois	8,000 00
Pennsylvania	39,728 32	Alabama	81,762 78
Delaware	307,104 01	Missouri	22,702 24
Maryland	10,000 00	Arkansas	44,690 00
Virginia	150,000 00	Michigan	48,607 95
North Carolina	1,000 00	Florida	799,002 01
Kentucky	90,000 00	Total	$2,341,136 03

Road from Cumberland to the Ohio	1,662,246 75
Continuation of the Cumberland Road	453,547 86
Repairs of the Cumberland Road	55,510 00
Road from Nashville to Natchez	8,000 00
Road from Wheeling to the Mississippi river	10,000 00
Road from Missouri to New Mexico	30,000 00
Road from Mississippi to the State of Ohio	5,539 35
Road from Georgia to New Orleans	5,500 00
Roads in Tennessee, Louisiana, and Georgia	15,000 00
Road from Nashville to New Orleans	7,920 00
Surveys of Roads and Canals	166,681 49
Surveys of Maps and Charts of the Ohio and Mississippi rivers	4,185 24
Improving the Navigation of the Ohio and Mississippi rivers	103,409 72
Military Roads	10,218 43
Surveys of the water courses of the Mississippi river	11,122 04
Road through the Creek Nation	3,621 01
Opening the old Natchez road	5,000 00
Breakwater at the mouth of Delaware Bay	5,000 00
Grand Total	$4,903,637 92

24. POPULATION.

1. Table showing the amount of Population in the different States and Territories, and the Number of Square Miles in each.

States and Territories.	Extent in Sq. Miles.	1790.	1800.	1810.	1820.
Maine	32,000	96,540	151,719	228,705	298,335
New Hampshire	9,280	141,885	183,858	214,460	244,161
Massachusetts	7,800	378,787	422,375	472,040	523,287
Rhode Island	1,360	68,825	69,122	76,931	83,959
Vermont	10,212	85,539	154,465	277,895	235,764
Connecticut	4,674	237,946	251,002	261,942	273,248
New York	46,000	340,120	586,058	959,049	1,372,812
New Jersey	6,900	184,139	211,149	245,562	277,575
Delaware	2,068	59,094	64,273	76,672	72,749
Pennsylvania	43,950	434,373	602,548	810,091	1,049,449
Maryland	10,800	319,728	349,692	380,546	407,350
Virginia	64,000	747,620	886,149	974,622	1,065,366
North Carolina	43,800	393,951	478,103	555,500	638,829
South Carolina	30,080	249,073	345,591	415,115	502,741
Georgia	58,200	82,548	162,686	252,433	340,989
Kentucky	39,000	73,677	220,959	406,511	564,317
Tennessee	40,000	. .	105,602	261,727	422,613
Ohio	39,000	. .	. .	230,760	581,434
Louisiana	48,220	. .	. .	20,845	153,407
Indiana	36,250	. .	5,641	24,520	147,178
Mississippi	45,350	. .	8,850	40,352	75,448
N. W. Territory	. .	. .	45,365	. .	. .
Orleans "	. .	. .	. .	76,555	. .
Illinois	59,000	. .	. .	12,282	55,211
Alabama	50,800	. .	. .	. .	127,901
Missouri	60,300	. .	. .	. .	66,586
Western Territories	. .	35,691	. .	. .	. .
Michigan Territory	54,000	. .	. .	4,762	8,896
Arkansas "	121,000	. .	. .	. .	14,246
Florida "	45,090	. .	. .	. .	. .
Dist. of Columbia	100	. .	14,093	24,023	33,039
Total . .		3,929,326	5,319,762	7,239,904	9,637,999

2. Relative Increase of the White and Colored Classes.

	1790.	1800.	1810.	1820.
Total	3,929,328	5,319,762	7,239,903	9,663,226
Free	3,227,046	4,429,881	6,074,562	8,110,108
Slaves	694,280	889,118	1,165,441	1,538,118
Proportion of Slaves to Free	177/1000	167/1000	160/1000	159/1000

25. COLLEGES IN THE UNITED STATES.

[This table and the following are taken from the Journal of the American Education Society.]

Table containing the proper title of each college; the place where it is situated; the time when founded; the name of the President or Provost; the number of academic instructers; the number of graduates in 1828; the number of undergraduates in the respective classes in 1828—9; the number of volumes in the college libraries, and in the social libraries of the students.

Name.	Place.	When founded.	President or Provost.	No. academic Inst'ers.	Graduates in 1828.	Under. 1828—9.	Vols. in College Librar.	Vols. Students.
Waterville	Waterville, Maine	1820	Rev. Jeremiah Chaplin, D. D.	5	12		1700	500
Bowdoin	Brunswick, Maine	1794	Rev. William Allen, D. D.	7	20	107	8000	4300
Dartmouth	Hanover, N. H.	1769	Rev. Nathan Lord, D. D.	8	41	128	3500	8000
Middlebury	Middlebury, Vt.	1800	Rev. Joshua Bates, D. D.	5	18	81	1646	2322
Vermont Univ.	Burlington, Vt.	1791	Rev. James Marsh	5	4	33	1500	1000
Williams	Williamstown, Mass.	1793	Rev. E. D. Griffin, D. D.	7	18	92	2100	1660
Amherst	Amherst, Mass.	1821	Rev. Heman Humphrey, D. D.	9	40	211	2300	3140
Harvard Univ.	Cambridge, Mass.	1638	Hon. Josiah Quincy, LL. D.	15	52	254	30000	4600
Brown Univ.	Providence, R. I.	1764	Rev. Francis Wayland, D. D.	6	25	98	6000	5750
Washington	Hartford, Ct.	1826	Rt. Rev. Thomas C. Brownell, D. D.	9	15	74	5000	1200
Yale	New Haven, Ct.	1700	Rev. J. Day, D. D. LL. D.	16	82	324	8500	6500
Columbia	New York City	1754	Rev. William Harris, D. D.	8	. .	. .	. .	. .
Union	Schenectady, N. Y.	1794	Rev. E. Nott, D. D. LL. D.	9	69	223	5000	8000
Hamilton	Clinton, N. Y.	1812	Rev. H. Davis, D. D.		14	. .	. .	. .
Geneva	Geneva, N. Y.	1825	. . . .	5	3	20	390	580
Rutgers	New Brunswick, N. J.	1770	Rev. P. Milledoller, D. D.	6	20	63	. .	. .
Nassau Hall	Princeton, N. J.	1746	Rev. J. Carnahan, D. D.		26	43	8000	4000
U. Pennsylvania	Philadelphia, Penn.	1755	Rev. Wm. H. De Lancey, D. D.	5	11	50	. .	. .
Jefferson	Canonsburg, Penn.	1802	Rev. M. Brown, D. D.	4	28	99	600	1700
Dickinson	Carlisle, Penn.	1783	Rev. Wm. Neill, D. D.	6	22	62	2000	5000
Washington	Washington, Penn.	1806	. . . .	3	8	31	400	525

Western Univ.	Pittsburg, Penn.	1820	Dr. R. Bruce, Prin.	4	9	41	400	525
Madison	. . .	. .	Rev. Henry B. Bascom	. .	. .	. .	. .	. .
Alleghany	Meadville, Penn.	1815	Rev. Timothy Alden	2	. .	12	7000	. .
St. Mary's	Baltimore, Md.	1805	Rev. E. Damphoux, D. D.	13	. .	. .	10000	. .
Columbian	Washington, D. C.	1821	Rev. Stephen Chapin, D. D.	6	. .	60	3000	1000
Univ. Virginia	Charlottesville, Va.	1814	Hon. J. Madison, Rector	8	. .	131	8000	. .
Hampden Sidney	Prince Edward Co.	. .	Rev. J. Cushing	. .	. .	. .	. .	. .
William and Mary	Williamsburg, Va.	1691	Rev. A. Empire	7	3	103	3400	600
Washington	Lexington, Va.	1812	Rev. G. A. Baxter, D. D.	. .	17	23	700	1500
Univ. N. Carolina	Chapel Hill	1791	Rev. J. Caldwell, D. D.	9	13	54	. .	. .
Univ. S. Carolina	Columbia	1802	Thomas Cooper, M. D.	. .	. .	. .	. .	. .
Charleston	Charleston, S. C.	1785	Rev. Jasper Adams, D. D.	8	6	42	1000	. .
Uni. Ga. or Fr. C.	Athens, Geo.	1785	Rev. M. Waddel, D. D.	6	28	105	2000	1820
Univ. Nashville	Nashville, Tenn.	1806	Rev. Philip Lindsley, D. D.	7	16	54	. .	. .
E. Tennessee	Knoxville, Tenn.	. .	Rev. Charles Coffin, D. D.	2	3	21	340	200
Augusta	Augusta, Ky.	1822	Rev. Martin Ruter	. .	. .	82	1500	400
Greenville College	Greenville, Tenn.	1794	Rev. Henry Hoss	. .	. .	22	3500	. .
Univ. Ohio	Athens, Ohio	1802	Rev. R. G. Wilson, D. D.	4	10	60	1842	908
Miami Univ.	Oxford, Ohio	1824	Rev. R. H. Bishop, D. D.	3	9	45	. .	. .
TransylvaniaUniv.	Lexington, Ky.	. .	Rev. Alva Woods, D. D.	. .	. .	50	. .	. .
West. Res. Col.	Hudson, Ohio	1828	. . . .	. .	. .	30	. .	. .
Bloomington Col.	Bloomington, Ind.	1828	Rev. Andrew Wylie, D. D.	. .	. .	. .	. .	. .

TOTAL.—Colleges 43
Instructers in 32 colleges . 217
Graduates in 30 coll. in 1828 652

Under. in 33 coll. 1828–9
Seniors 670. Juniors 646 } 2809
Soph. 660. Freshmen 532

Vols. in 30 coll. Libraries 128,118
Vols. in 25 students' Libraries 66,730

26. THEOLOGICAL SEMINARIES.

Table containing the Name or Title; Location; Denomination; Date of going into Operation; whole Number educated; Number of Students in 1829; Volumes in Seminary Libraries; Volumes in the social Libraries of the Students.

Name or Title.	Place.	Denomination.	Com of Op.	No. educ.	Stu. in 1829	Vols. in Lib.	Vol. in S.L.
Bangor Theolog. Sem.	Bangor, Me. . .	Congregational	1816	51			
Andover Theolog. Sem.	Andover, Mass. .	Congregational	1808	444	137	6000	2340
Newton Theolog. Institu.	Newton, Mass. .	Baptist . .	1825	7	21		
Theological School . .	Cambridge, Mass.	Unitarian .	1816		52		
Theo. Dep. of Yale Col.	New Haven, Con.	Congregational	1822	42	48		600
Gen. Theo. Sem. Prot. Epis. Ch. in U. States.	New York City .	Prot. Epis.	1819	123	27	3600	
Theol. Sem. of Auburn	Auburn, N. Y. .	Presbyterian	1821	106	66	3500	
Hamilton Lit. & Th. Inst.	Hamilton, N. Y. .	Baptist . .	1820	20	15	1260	
Hartwick Theol. Sem.	Hartwick, N. Y. .	Evan. Luth.	1816	13	9	900	300
Th. Sem. Ref. Dutch Ch.	N. Brunswick, N. J.	Ref. Dutch Ch.	1784	147	21	1500	
Th. Sem. Pres. Ch. U. S.	Princeton, N. J.	Presbyterian	1812	470	113	6000	
Sem. Gen. Syn. Evan. Luth. Ch. in U. S.	Gettysburg, Pa.	Evan. Luth.	1826	6	23	6000	450
Th. Sem. Ger. Ref. Ch.	Carlisle, Pa. . .	Ger. Ref. Ch.	1825	7	4		30
Western Theol. Sem.	Alleghany-town, Pa.	Presbyterian	1828				
Theol. Sem. of Virginia	Alexandria, Va. .	Episcopal .	1823	60	24		
Union Theol. Seminary	Pr. Ed. Co. Va. .	Presbyterian	1824	11	28	2000	
South. & West. Th. Sem.	Maryville, Tenn.	Presbyterian	1821	22	27	4000	
Rock Spring Th. School	Illinois	Presbyterian	1827			1200	
				1529	599	35960	3720

27. RELIGIOUS DENOMINATIONS.

The following statements of the religious denominations in the United States, drawn from the Journal of the American Education Society, are not presumed to be exact; but the editors of that work have taken much pains to make it as nearly so, as the nature of the subject would admit. In some cases, partial reports only have been returned, and of course in such cases the aggregate numbers here given are too small.

CONGREGATIONALISTS OF NEW ENGLAND. *Orthodox.* Ministers 800; Vacant Churches 250; Communicants 115,000. *Unitarian.* About 150 congregations.

PRESBYTERIANS IN THE UNITED STATES. Synods 16; Presbyteries 90; Ministers 1289; Licentiates 193; Churches 1946; Communicants 146,297.

REFORMED DUTCH CHURCH. Ministers 117; Churches 155; Vacant Churches 16.

GERMAN REFORMED CHURCH. Churches about 400; Communicants 30,000.

EPISCOPAL CHURCH. Bishops 13; Clergy 507; Churches 5,989.

ASSOCIATED CALVINISTIC BAPTISTS. Associations 206; Churches 4,027; Ministers 2,749.

MORAVIANS. Congregations 23; Ministers 23; Members about 6,000.

METHODISTS. Bishops 3; Travelling Preachers 1,533; Superannuated 109; Members in Society 421,105; number of local preachers unknown.

EVANGELICAL LUTHERAN. About 200 Ministers and 800 Congregations.

NEW JERUSALEM CHURCH. Ordaining Ministers 8; Priests and Teaching Ministers Licentiates 12.

CHRISTIAN SOCIETY. From 800 to 1000 Churches.

UNIVERSALISTS. Between 200 and 300 Congregations.

ROMAN CATHOLICS. Number not known; estimated several years ago at 600,000, and has increased much since.

FREE WILL BAPTISTS. Ministers 242; Churches 335.

FRIENDS. Whole number estimated at 750,000.

SHAKERS. Societies 16; Preachers 40; Population 5,400.

SEVENTH DAY BAPTISTS. Churches 18; Ministers 29; Communicants 2,862.

SIX PRINCIPLE BAPTISTS. Churches 15; Ministers 20; Communicants 1,500.

TUNKERS. Churches 33; Ministers 30; Communicants 3,000.

MENNONITES. Churches 225; Ministers 200; Communicants 20,000.

FREE COMMUNION BAPTISTS. Churches 32; Ministers 23; Communicants 1284.

28. NEWSPAPERS AND PERIODICAL JOURNALS.

The following table, corrected from the "Traveller," contains a statement of the number of Newspapers published in the Colonies at the commencement of the Revolution; and also the number of newspapers and other periodical works in the United States in 1810 and 1828.

States.	1775	1810	1828	States.	1775	1810	1828
Maine			29	Florida		1	2
Massachusetts	7	32	78	Alabama			10
New Hampshire	1	12	17	Mississippi		4	6
Vermont		14	21	Louisiana		10	9
Rhode Island	2	7	14	Tennessee		6	8
Connecticut	4	11	33	Kentucky		17	23
New York	4	66	161	Ohio		14	66
New Jersey		8	22	Indiana			17
Pennsylvania	9	71	185	Michigan			2
Delaware		2	4	Illinois			4
Maryland	2	21	37	Missouri			5
District of Columbia		6	9	Arkansas			1
Virginia	2	23	34	Cherokee Nation			1
North Carolina	2	10	20				
South Carolina	3	10	16	Total	37	358	802
Georgia	1	13	18				

29. METEOROLOGY.

The two following tables show the results of observations taken at several of the Military Posts in the United States; selected from Dr. Lovell's Meteorological Register, and from other materials furnished by him. The observations were taken at 7 o'clock in the morning, and at 2 and 9 in the afternoon, and from these the aggregate means are deduced.

For the Year 1827.

Places of Observation.	THERMOMETER. Aggr. mean temp.	High est deg.	Low-est deg.	Range.	WINDS. N.	N. W.	N.E.	E.	S. E.	S.	S.W.	W.
					days.	days.	days	days	days	days	days	days.
Fort Brady	41.46	84	—20	104	0.75	9.41	4.82	3.08	6.16	0.75	3.00	2.47
Fort Snelling	46.10	96	—22	118	1.33	2.83	1.92	1.41	2.42	5.75	5.33	9.42
Fort Howard	45.60	98	—16	114	2.42	2.17	5.33	1.17	0.83	4.17	5.17	9.00
Fort Preble	45.93	95	—8	103	2.42	5.17	2.75	1.58	3.75	4.92	6.17	3.67
Fort Constitution	46.22	92	—8	100	2.00	7.16	3.66	1.42	1.17	8.00	2.58	4.42
Fort Wolcott	49.73	86	—2	88	2.33	9.58	4.83	0.42	2.25	0.58	9.50	0.92
Fort Armstrong	51.83	94	—6	100	3.83	5.42	2.58	2.75	2.08	6.83	4.08	2.83
West Point	51.66	101	—10	111	4.50	8.25	2.17	0.50	4.83	4.00	3.92	2.25
Fort Trumbull	53.10	88	0	88	2.08	4.67	5.00	1.33	3.25	3.83	7.16	3.83
Fort Columbus	51.77	96	0	96	3.75	7.50	3.25	1.08	5.08	3.50	3.08	3.17
Washington	57.84	98	9	89	1.75	9.00	5.25	0.58	4.00	2·58	6.00	1.00
Jefferson Barracks	59.27	94	8	86	3.25	4.92	0.58	1.92	3.42	6.67	4.25	5.42
Fortress Monroe	60.37	94	13	81	2.00	3.00	6.92	3.42	5.33	1.92	6.16	1.67
Augusta	66.81	102	26	76	2.08	2.58	3.16	3.00	4.17	3.67	6.50	4.50
Canton. Jesup	69.22	95	24	71	1.25	4.83	6.50	3.58	8.17	2.67	2.17	1.17
Canton. Clinch	70.32	92	24	68	3.50	3.16	1.75	0.67	5.58	5.08	9.58	1.08
Petites Coquilles	70.79	95	23	72	1.00	3.33	5.08	6.83	4.67	3.83	3.67	2.00
Canton. Brooke	74.19	94	26	68	0.25	1.67	1.83	1.25	5.83	3.83	3.33	12.42

FROM 1820 TO 1827.

		THERMOMETER.				WINDS.							
		Aggregate.	Highest.	Lowest.	Range.	N.	N. W.	N. E.	E.	S. E.	S.	S. W.	W.
						days.	days.	days.	days.	days.	days.	days.	days.
1820.	Lat.												
North	43°16′	47.72	99	—30	129	2.72	5.27	2.54	2.12	3.47	3.84	5.91	3.70
South	31 30	68.42	94	28	66	2.55	4.23	3.68	2.26	4.58	4.77	3.95	4.12
Mean	37 18	58.07	99	—30	129	2.63	4.75	3.11	2.19	4.02	4.30	4.93	3.91
1821.													
North	42°13′	47 89	100	—32	132	3.50	7.26	2.65	1.06	4.47	3.32	5.51	2.63
South	32 45	67.68	92	12	80	3.23	4.51	5.50	1.47	5.37	3.38	5.06	1.89
Mean	37 29	57.78	100	—32	132	3.36	5.88	4.07	1.26	4.92	3.35	5.28	2.26
1822.													
North	43°20′	46.58	108	—29	137	2.80	6.55	3.36	0.77	3.00	3.77	7.57	2.06
South	31 53	66.70	99	18	81	4.59	2.45	3.70	2.17	4.53	5.22	5.00	2.74
Mean	37 37	56.64	108	—29	137	3.69	4.50	3.53	1.47	3.76	4.49	6.29	2.40
1823.													
North	42°54′	45.47	102	—38	140	2.21	5.81	4.53	1.55	3.35	3.54	6.08	3.22
South	32 09	66.53	94	7	87	3.47	2.54	3.54	2.83	5.68	4.73	5.08	2.49
Mean	37 31	56.00	102	—38	140	2.84	4.17	4.03	2.19	4.51	4.13	5.58	2.85
1824.													
North	43°07′	46.78	103	—28	131	3.27	5.27	3.05	1.04	3.64	4.59	6.36	3.07
South	32 09	68.04	96	24	72	3.33	3.16	4.29	3.25	4.26	5.60	4.66	1.91
Mean	37 38	57.41	103	—28	131	3.30	4.21	3.67	2.14	3.95	5.09	5.51	2.49
1825.													
North	44°01′	47.35	102	—25	127	2.29	5.64	4.11	1.31	3.40	3.22	7.32	3.20
South	30 36	79.26	97	20	77	3.52	3.81	6.83	2.02	5.25	3.33	3.41	2.22
Mean	37 18	58.80	102	—25	127	2.90	4.72	5.47	1.66	4.32	3.27	5.37	2.71
1826.													
North	43°28′	47.27	104	—32	136	2.48	4.94	2.95	1.74	2.76	4.33	7.16	3.88
South	31 09	70.10	100	23	77	2.88	3.94	4.59	3.06	4.14	3.92	5.00	2.84
Mean	37 18	58.68	104	—32	136	2.68	4.44	3.77	2.40	3.45	4.12	6.08	3.36
1827.													
North	43°54′	45.79	98	—22	120	2.54	6.21	3.63	1.47	3.18	4.23	5.00	4.19
South	30 42	70.26	95	23	72	1.68	3.09	4.21	3.12	5.62	3.53	5.23	3.81
Mean	37 18	58.02	98	—22	12	2.11	4.65	3.92	2.29	4.40	3.88	5.11	4.00
	Lat.												
1820.	37°18′	58.07	99	—30	129	2.63	4.75	3.11	2.19	4.02	4.30	4.93	3.91
1221.	37 29	57.78	100	—32	132	3.36	5.88	4.07	1.26	4.92	3,35	5.28	2.26
1822.	37 37	56.64	108	—29	137	3·69	4.50	3.53	1.47	3.76	4.49	6.29	2.40
1823.	37 31	56.00	102	—38	140	2.84	4.17	4.03	2.19	4.51	4.13	5.58	2.85
1824.	37 38	57.41	103	—28	131	3.30	4.21	3.67	2.14	3.95	5.09	5.51	2.49
1825.	37 18	58.80	102	—25	127	2.90	4.72	5.47	1.66	4.32	3.27	5.37	2.71
1826.	37 18	58.68	104	—32	136	2.68	4.44	3.77	2.40	3.45	4.12	6.08	3.36
1827.	37 18	58.02	98	—22	120	2.11	4.65	3.92	2.29	4.40	3.88	5.11	4.00
Mean of 8 years		57.67	108	—38	146	2.94	4.67	3.95	1.95	4.16	4.08	5.52	3.00

XXXVII. STATISTICAL AND OTHER INFORMATION RESPECTING INDIVIDUAL STATES.

MAINE.

Receipts and Expenditures for the Year ending December 31, 1828.

Receipts.

Balance in the Treasury	$9,302 93	Fines, Forfeitures, &c.	$85 79
Taxes on Real Estate	48,943 47	Indians	112 84
Duties on Commissions	2,662 00	Land Agents	11,394 20
Tax on Banks	21,075 00	Loan	5,000 00
Justices' Fees	8,794 14	Lotteries.	
Notes Receivable	50 00	For the Cumberland and Oxford Canal	22,050 35
Interest on Money due	43 33	For Steam Navigation	3,317 24
Received from Land Agent	10,758 47		
Military Exempts	6 00		
Premium on a Loan	5 00	Total of Receipts	$143,487 92

Expenditures.

Pay Roll of the Council	$2,698 00	Pensions	640 00
Senate	3,260 00	Engrossing Clerks	1,092 75
Representatives	19,656 00	State Tax remitted	120 40
Electors of Pres. & V. Pres.	182 00	Cumberland and Oxford Canal Fund	22,050 35
Roll of Accounts	8,853 31	Chaplains	60 00
Salaries	14,883 91	Temporary Loan	17,900 00
Costs in Criminal Prosecutions	8,701 59	Interest on State Debt	3,206 77
To Bowdoin College	3,000 00	Steam Navigation Lottery	3,317 24
To Medical School	1,000 00	Miscellaneous	404 38
To Waterville College	2,000 00	Commissioners under the Act of Separation	307 21
To Gardiner Lyceum	1,000 00	Greenleaf's Maps	1,000 00
To the American Asylum at Hartford	1,415 32	Public Roads	2,237 21
State Prison	8,185 12	Northeastern Boundary	909 48
State Arsenal	900 00	Quarter Master Gen. Department	400 00
Public Buildings, &c.	2,626 73		
Land Agent	1,000 00		
Indians	2,406 56	Total of Expenditures	$137,351 83
State Printing	750 00	Balance of Cash in the Treasury, Dec. 31, 1828	6,136 09
Greenleaf's Reports	787 50		
Stationery	300 00		
Laws for the use of the Legislature	$100 00		$143,487 92

County Receipts and Expenditures.

From the imperfect nature of the returns in this State, as well as in others, it is difficult to ascertain the exact amount of receipts and expenditures in the several counties and towns. Mr. Greenleaf, in his valuable statistical work, entitled a "Survey of the State of Maine," has formed, in the shape of tables, an estimate of the County receipts and expenditures of that State for seven years in succession. These tables are curious and valuable, as showing not only the amount, but the *objects* of the expenditures. The tables for Cumberland County, which are here selected, will give a general idea of the subject.

ESTIMATE of RECEIPTS into the COUNTY TREASURY of Cumberland County, exclusive of Direct Taxes.

	1821.	1822.	1823.	1824.	1825.	1826.	1827.
		$	$	$	$	$	$
Entries		400 00	270 00	350 00	350 00	280 00	450 00
Jury fees		300 00	250 00	400 00	350 00	300 00	300 00
Duties on deeds . .		200 00	200 00	250 00	250 00	250 00	250 00
Probate fees . . .					100 00	100 00	

ESTIMATED AMOUNT and OBJECTS of the EXPENDITURES of the County of Cumberland.

	1821.	1822.	1823.	1824.	1825.	1826.	1827.
	$	$	$	$	$	$	$
Jurors	2,600	3,300	3,000	3,000	2,800	2,800	4,800
Prisons and Prisoners	1,400	1,400	1,500	1,550	800	400	450
Criminal Prosecutions	800	800	800	1,000		700	500
Bills of Sheriff, &c.	800	800	1,200	1,300	1,000	1,000	
Constables for services	200	200	250	255	230	230	
Coroner's Inquisitions	200	200	200	225	250	100	
Judge of Probate	50						400
Register of Probate							900
Municipal Judge							850
Justices C. S. &c.	500	500	400	725	570	450	
Treasurer	450	500	400	410	410	400	
Record Books and Sta.	100	100	350	400	400		
Roads and Bridges	12,000	600	4,400 75	2,200	1,150	1,500	11,181 32
Contingencies	500	500	600				

State Debt.

The whole amount of debt now outstanding against the State is $45,000, and was obtained in the following manner, viz.

Under Resolve of February 6th, 1822 - - -	$40,000,00
Under Resolve of February 25th, 1828, on the Treasurer's Note, dated November 25th, 1828 - - - -	5,000,00
Total amount of State Debt, December 31, 1828,	$45,000,00

The interest on the same is $2,250 per annum, and payable semi-annually at the Treasury Office.

Banks.

An Abstract from the Returns of the Directors of the several incorporated Banks within this State, made to the Office of the Secretary of State, June, 1829.

BANKS.	The Amount of capital Stock actually paid in.	Total Amount of Bills in Circulation.	Amount of Cash deposited.	Amount of undivided Profits.	Specie on hand.	Deposites in other Banks.	Rate of last Dividend per cent.
	Dolls.	Dolls.	Dolls. Cts.	Dolls. Cts.	Dolls. Cts.	Dolls. Cts.	
Augusta,	100,000	35,759	36,787 30	1,867 78	5,538 41	7,653 07	3
Bank of Portland,	200,000	26,206	101,413 38	6,291 14	19,738 85	28,792 32	2
Bangor,	50,000	37,341	11,711 83	19,110 22	2,157 36	5,000 00	3
Bath,	100,000	8,380	57,534 21	1,997 68	2,513 02	79 49	4
Canal,	300,000	35,366	59.807 71	2,773 01	13,277 69	12,001 55	2¼
Casco,	200,000	27,843	50,130 82	6,771 41	22,943 34	13,824 60	3
Cumberland,	200,000	35,682	41,879 65	14,625 54	32,181 79	53,425 30	3¾
Gardiner,	100,000	31,762	7,186 12	1,143 11	2,975 15	5,274 72	3
Kennebunk,	100,000	37,784	14,461 48	2,405 78	2,394 75	22,583 60	2½
Kennebec,	No return.						
Lincoln,	100,000	28,165	15,041 40	1,465,79	7,649 60	13,695 83	3½
Manufacturers',	100,000	19,171	5,596 36	1,044,60	2,637 72	4,388 66	2½
Merchants',	150,000	30,112	33,196 06	5,934 88	*24,847 24	19,180 35	3
Passamaquoddy,	No return.						3
Saco,	100,000	31,404	11,796 34	1,801 59	3,095 36	8,984 16	
South Berwick,	50,000	20,756	3,896 47	3,493 10	4,181 70	3,740 52	3½
Thomaston,	50,000	46,893	7,597 23	601 81	10,756 15	1,019 55	4
Union,	50,000	32,140	9,595 81	1,195 17	3,304 69	16,557 70	3½
Vassalborough,	50,000	40,217	7,174 15	2,323 76	2,439 46	13,499 04	3
Waterville,	50,000	26,221	5,310 64	142 36	3,291 57	2,343 49	3
Winthrop,	No return.						

* Including $5000 deposited in the State Bank, Boston.

Aggregate Amount of the Bills of the several Banks of Maine, in Circulation at different Periods.

Date of Returns from Banks.	Amount of Bills in Circulation.	Dates of Returns from Banks.	Amount of Bills in Circulation.
June 1820	$469,014	June 1824	$1,096,944
January 1821	781,816	January 1825	1,172,499
June 1821	1,062,370	June 1825	1,040,113
January 1822	1,270,201	January 1826	867,294
June 1822	1,148,753	June 1826	588,691
January 1823	879,681	January 1827	685,718
June 1823	728,199	June 1827	597,092
January 1824	1,050,608	January 1828	764,251

Academies.

List of Academies, with the Date of their Incorporation, Amount of their Endowments by the Legislature, and a Statement of the actual Funds belonging to them, from Official Returns.

Name.	Date of Incorporation.	Acres of Land granted.	Actual Funds.
Berwick	11th March, 1791	23,040	$6,837 00
Hallowell	5th March, 1791	23,040	7,886 00
Fryeburgh	9th February, 1792	12,000	10,000 00
Washington, at Machias	7th March, 1792	23,040	21,790 93
Portland	24th February, 1794	11,520	. . .
Lincoln, at New Castle	23d February, 1801	11,520	. . .
Gorham	5th March, 1803	11,520	. . .
Hampden	7th March, 1803	11,520	. . .
Bluehill	8th March, 1803	11,520	6,552 00
Hebron	10th February, 1804	11,520	8,006 64
Bath	6th March, 1805	11,520	8,050 00
Farmington	18th February, 1807	11,520	2,294 36
Bloomfield	18th February, 1807	11,520	3,000 00
Warren	25th February, 1808	11,520	. . .
Belfast	29th February, 1808	11,520	5,723 76
Bridgetown	8th March, 1808	11,520	10,441 97
Bath, Female	11th March, 1808	11,520	. . .
Limerick	17th November, 1808	11,520	4,051 44
Monmouth	19th June, 1808	11,520	6,649 92
Thornton, at Saco	16th February, 1811	11,520	7,180 00
North Yarmouth	4th February, 1811	11,520	19,710 65
Young Ladies', at Bangor	27th January, 1818	11,520	. . .
Cony, Female, at Augusta	10th February, 1818	11,520	9,985 00
China	12th June, 1818	11,520	8,333 00
Foxcroft	31st January, 1823	11,520	4,950 00
Brunswick	23d January, 1823	. .	. . .
Anson	8th February, 1823	. . .	. . .
Oxford, Female, at Paris	7th February, 1827	. .	. . .
Dearborn	. . . . .	. . .	1,776 37
Maine Wesleyan	. . . . .	. .	12,574 67
Wiscasset	. . . . .	. . .	4,428 00

Common Schools.

By a law of the state, every town, however large or small, is required to raise annually, for the support of schools, a sum equal at least to *forty cents* for each person in the town, and to distribute this sum among the several schools or districts, in proportion to the number of scholars in each. The expenditure of the sum is left principally to the discretion of the town, and its committee or agents, appointed for that purpose. In the year 1825 the legislature required a report from each town in the state, respecting the situation of the schools. From these reports, made in the winter of 1826, Mr. Greenleaf has drawn the following summary.

COUNTIES.	Number of School Districts.	Number of Children between 4 and 21.	Number who usually attend Schools.	Amount required by Law to be raised and expended annually.	Amount of money annually raised and expended for support of Schools.		Total annual Expenditures.
					From Taxes.	From the Income of permanent Funds.	
York	297	20,820	14,602	$18,513 20	$19,905 82	$229 93	$20,185 58
Cumberland	323	19,238	14,630	19,778 00	20,646 65	1,520 06	22,166 71
Lincoln	333	21,171	14,942	18,737 20	19,513 41	813 10	20,326 51
Waldo	210	11,712	8,129	8,901 20	11,099 46	100 00	11,199 79
Hancock	156	7,881	5,903	7,142 40	7,173 57	487 60	7,661 17
Washington	103	5,009	3,346	5,097 60	5,420 83	206 20	5,626 85
Kennebeck	341	19,561	14,923	16,060 00	17,827 31	375 77	18,203 08
Oxford	289	12,935	10,217	10,841 60	10,990 03	1,294 21	11,384 29
Somerset	296	11,903	8,340	8,710 00	10,737 07	336 53	11,073 65
Penobscot	151	7,701	6,923	5,543 00	9,849 77	251 20	10,100 97
Total	2499	137,931	101,325	119,334 00	132,253 92	5,614 65	137,878 57

Gardiner Lyceum.

This institution was founded by Robert H. Gardiner, Esq., in 1821, principally for the purpose of affording to the operative and productive classes of the community, such scientific education as may be most useful in their respective arts and occupations.

The Officers, in Jan. 1829, consisted of

	Salary.
Principal	$800
Professor of Natural History and Agriculture	600
Tutor in Mathematics	500

Number of Students, 25.

A workshop, fitted up with circular saws, lathes, and other machinery, and under the superintendence of Mr. P. C.

Holmes, enables many of the Students to meet a part or all of their expenses.

A farm is about being added, which will enable those who prefer agricultural pursuits to do the like.

Officers and their Salaries.

	Salary.
EXECUTIVE.	
Governor	$1,500
JUDICIARY.	
Supreme Court.—Prentiss Mellen, Chief Justice .	1,800
Nathan Weston, jr. Associate Justice . .	1,500
Albion K. Parris " . .	1,500
Common Pleas.—Ezekiel Whitman, Chief Justice .	1,200
Samuel E. Smith, Associate Justice . .	1,200
David Perham " . .	1,200

LEGISLATURE. The members of the Senate and House of Representatives receive each $2 a day; the President of the Senate and Speaker of the House, $4.

Cumberland and Oxford Canal.

This will unite the waters of Sebago Pond with those of Portland Harbour. Company incorporated in 1821. Canal commenced in May, 1828; to be completed in Sept. 1829. Length of artificial canal, 20½ miles; whole extent of water communication will exceed 40 miles, Sebago Pond being connected with Long Pond by a dam and lock. Estimated expense, from $190,000 to $200,000. Descent, about 250 feet, made by 25 locks. Articles of transportation; timber of various kinds, wood, stone, ashes, sand to make glass, and produce of the country, down the canal. In return, salt, plaster, fish, merchandise. The water communication may be extended to the Androscoggin, and even, it is said, to the Chaudiere.

State Prison at Thomaston.

Aggregate amount of the expenditures in the purchase, erection, and repairs of the state prison at Thomaston, from the commencement, in 1823, to the 30th Nov. 1826.

Purchase of the site for the prison, $3,000. Amount ex-

pended in erecting the prison in 1823, $23,910 55. In 1824, $4331 52. In 1825, $2007 08. In 1826, $619 31; making an aggregate of $33,768 46. In 1828, the Legislature made further appropriations, amounting to $7109 09.

The expenses of the prison, convicts, officers' salaries, &c. for the year 1824, were $4443 81. Net earnings of the convicts for the same period, $1755 83; stock remaining on hand at the close of the year, $1404 36; leaving a balance against the state, of $1283 62.

Expenses for the year 1825, $7758 09; net earnings, $4925 08; stock on hand, rents, &c. $2479 84; balance against the state, $353 17.

Expenses for the year 1826, were $11,194 30; net earnings, $6177 33; stock on hand, rents, &c. $2605 52; balance against the state, $2411 05.

The expenditures of the succeeding years cannot be yet accurately ascertained.

The number of convicts, Nov. 30, 1827, was 71. Received from Nov. 30, 1827, to Sept. 1, 1828, 32. Total, 103. Discharged during the same time, 15; pardoned, 8. Number of convicts, Sept. 1, 1828, 80. Received from Sept. 1, to Nov. 30, 1828, 23; discharged in the same time, 3; escaped, 1. Remaining, Nov. 30, 1828, 99. Whole number committed since July 2, 1824, 274. Discharged, 139. Pardoned, 29. Escaped, 2. Died, 5. Remaining, 99.

Of the whole number discharged, there have been returned on a second commitment, 22. Of the 99 now in prison, 14 are Irish, 3 are English, 3 are French, and 1 Portuguese negro.

The employments of the convicts, Dec. 1, 1828, were the following. Quarrying lime-stone, 28. Stone-cutters, 29. Blacksmiths, 5. Shoe-makers and cobblers, 8. Shoe-binders, 1, female. Carpenters, 2. Chair and cabinet makers, 2. Painters, 1. Barbers, 1. Tailors, 5. Washers, 2, females. Waiters, 2. Cooks, 2. Oakum-pickers and invalids, 6. In the hospital, 5.

NEW HAMPSHIRE.

Receipts and Expenditures for the Year 1828.

Receipts.

Cash in Treasury, on settlement of late Treasurer's account	$3,205 10
Taxes outstanding	1,502 45
Borrowed of Literary Fund	9,058 19
" of Merr. Co. Bank	19,000 00
" of Claremont Bank	5,000 00
Received of J. W. Weeks, an error in travel roll	2 00
Interest on 3 per cent. Stock	2,854 00
Received of Jacob Patch, error in attendance roll, Nov. 1828	90 00
Cash of Selectmen of Lyman, fees for Militia Exempts	2 00
State Tax for 1828	39,997 20
Of Secretary of State, fees of office	553 00
	$81,263 94

Expenditures.

Governor's Salary	$1,200 00
Contingent Expenses	100 00
Pay-roll of the Council	985 00
" Senate, June, 1828	602 40
" " Nov. 1828	1,398 60
" House, June, 1828	9,039 80
" " Nov. 1828	22,172 50
Orders in favor of Representatives whose names were omitted on the rolls	190 00
Orders in favor of the Clerks	765 90
" in favor of Doorkeepers	901 45
Salaries of Secretary, Treasurer, Warden of State Prison, and Adjutant General	2,600 00
Salaries of the Justices of Superior Court, Attorney General, and Solicitors	4,600 00
Salaries of Justices of the Court of Common Pleas	3,200 00
" Judges and Registers of Probate	4,418 69
Compensation of Commissioners on State Line	1,086 68
" Electors of President, &c.	147 00
Orders in favor of Deaf and Dumb	660 00
Other Orders	6,451 72
Wolf, Bear, and Wild Cat Bounty	250 00
Tax against Shelburne, received by late Treasurer	48 40
Principal and Interest of Money borrowed	18,619 16
Taxes outstanding, June 1, 1829	1,452 92
Cash in Treasury, June 1, 1829	373 72
	$81,263 94

The state has appropriated annually, for several years, $1,200, to educate deaf and dumb pupils, at the Hartford Asylum.

Officers and their Salaries.

EXECUTIVE.	Salary.
Benjamin Pierce, Governor . .	$1,200

Holds his office for a year, which will expire on the first Wednesday of June, 1830.

JUDICIARY.

Supreme Court.—William M. Richardson, Chief Justice	1,400
Samuel Green, Associate Justice .	1,200
John Harris, " . .	1,200
Common Pleas.—Arthur Livermore, Chief Justice	1,200
Josiah Butler, Associate Justice .	1,000
Timothy Farrar " . .	1,000

LEGISLATURE. The members of the Senate and House of Representatives receive $2 a day, during the session of the Legislature, and *ten cents* a mile for travel to and from the seat of government. The Council receives the same, with the addition of *fifty cents* a day, at extraordinary sessions of the Governor and Council.

Schools.

From the year 1808 to 1818, there were raised in New Hampshire $70,000 annually by law, for the support of common schools. This amount was raised by a separate tax, levied throughout the state, in the ratio of taxation for the state tax. Since 1818 the yearly amount of the sum raised has been $90,000. This is the amount required by law, but a few towns raise more than they are required. The Legislature assumes no control over the immediate appropriation, but leaves this to each town.

The state possesses a literary fund, amounting to $64,000, which has been formed by a tax of one half per cent. on the capital of the banks. This fund has been accumulating; but by a recent act of the Legislature, the proceeds of it are hereafter to be annually divided among the towns, in the ratio of taxation.

There is, moreover, an annual income of $9,000 from the tax of a half per cent. on banks, which is divided in the same manner. Some of the towns have also separate school funds.

Newspapers.

Names of the Newspapers published in New Hampshire, Places of Publication, and Number circulated.

Name.	Place.	Number circulated.
N. H. Patriot and State Gazette .	Concord,	4,000
New Hampshire Journal . .	"	3,000
Statesman and Register . .	"	2,000
Times and Enquirer . .	Dover,	1,500
New Hampshire Observer . .	Portsmouth,	1,400
New Hampshire Sentinel .	Keene,	1,200
New Hampshire Post . .	Haverhill,	1,200
Portsmouth Journal . .	Portsmouth,	1,000
New Hampshire Gazette . .	"	800
Farmer's Cabinet . . .	Amherst,	800
Nashua Gazette . . .	Dunstable,	700
Commercial Advertiser . .	Portsmouth,	600
Dover Gazette	Dover,	600
New Hampshire Republican .	"	600
Democratic Republican . .	Haverhill,	400
Farmer's Museum . . .	Keene,	400
New Hampshire Spectator .	Newport,	400

Banks.

Statement of the Condition of the several Banks in New Hampshire, on the 4th of May, 1829.

BANKS.	Value of Real Estate.	Amount of Debts due.	Amount of Specie in the Vaults.	Amount of Bills of other Banks on hand.	Amount of Deposites.	Amount of Bills in Circulation.
	Dolls.	Dolls.	Dolls.	Dolls.	Dolls.	Dolls.
New Hampshire	16,750 00	191,593 49	7,702 01	3,661 00	14,277 18	58,358 00
N. H. Union .	5,883 00	181,763 00	11,057 00	4,642 00	10,137 00	22,748 00
Rockinghnm .	1,000 00	125,900 90	3,030 30	3,396 62	14,051 30	12,419 00
Commercial . .		121,228 70	6,619 54	3,473 23	12,454 92	16,514 00
Piscataqua . .	1,500 00	239,330 50	5,749 00	12,166 14	37,650 53	61,358 00
Exeter . . .	4,000 00	119,026 20	32,829 22	2,071 00	7,542 19	35,016 00
N. H. Strafford .	4,500 00	141,374 42	2,201 93	3,031 00	8,734 24	25,166 00
Dover	6,005 00	174,577 18	7,996 79	2,805 39	3,811 13	30,933 00
Winnepisiogee .	4,610 26	98,592 13	5,422 55	794 00	583 00	15,727 00
Concord . . .	2,902 60	112,837 30	9,990 38	3,798 00	4,861 00	41,859 00
Merrimack County	6,271 65	125,562 40	25,069 12	497 00	2,980 82	45,578 00
Farmers' . . .	2,400 00	100,501 60	7,071 78	454 00	4,627 54	39,004 00
Cheshire . . .	2,054 00	166,587 29	10,032 96	1,559 00	4,902 23	74,452 00
Claremont . .	1,995 76	89,191 98	11,030 61	5,309 00	5,386 21	35,873 00
Connecticut River	2,444 65	114,598 28	17,726 60	436 00	15,727 15	51,127 00
Grafton . . .	983 62	154,071 35	52,293 10	3,974 50	20,650 61	89,518 25
Pemigewasset .	3,446 21	72,432 88	9,424 25	762 00	1,053 62	29,596 00

Portsmouth Bank. No Returns.

State Prison.

STATEMENT of RECEIPTS and DISBURSEMENTS in the New Hampshire State Prison, for the Year ending May 31, 1829.

Receipts.		*Disbursements.*	
In Stone-shop	$13,066 34	In Stone-shop	$9,325 49
Smith's Shop	3,978 46	Smith's Shop	3,168 14
Cooper's Shop	461 07	Cooper's Shop	329 80
Shoe, Tailor's, & Weaver's	684 16	Shoe, Tailor's, & Weaver's	278 51
Provisions	533 19	Clothing and Bedding	632 99
Clothing and Bedding	231 87	Provisions	1,189 64
Furniture and Fuel	261 02	Furniture and Fuel	144 25
Received from Visitors	181 78	Expenses for Pay and Subsistence of Overseers and Watchmen, and Incidental Expenses	1,894 98
" for Interest	41 39	Expenses for Repairs	322 59
		" for Hospital	62 33
Total of Receipts	19, 489 28	Total of Disbursements	$17,348 72

Militia.

By the returns of the militia, made to the governor on the 12th of June, 1829, the number was as follows.

Infantry, Light Infantry, and Grenadiers	24,843
Cavalry	1,601
Artillery	1,592
Riflemen	864
Total	28,900

The number in the preceding year was 28,415; thus making an increase of 485 for the last year.

VERMONT.

Names of Officers and their Salaries.

EXECUTIVE. The governor is chosen annually by the people, and his term of office expires on the second Thursday in October, on which day the session of the Legislature commences. His salary is $1150. The Lieutenant-Governor's pay is $4 a day during the session of the Legislature, and *six cents* a mile for travel.

JUDICIARY. The Judges of the SUPREME COURT, which is a court for the determination of questions of law, and petitions, and other matters not triable by jury, and has general chancery powers and jurisdiction, are five in number, and are chosen annually by the Legislature. Including an allowance of $125 per annum to each judge, for preparing reports of the decisions of the Supreme Court, to be published by the State, the salaries of the judges are $1175 each.

Richard Skinner, Chief Justice.
Samuel Prentiss,
Titus Hutchinson,
Bates Turner,
Ephraim Paddock,
} Assistant Justices.

The Legislature appoints annually two assistant judges in each county, who, with *one* judge of the Supreme Court, compose the County Court. The County Court has original exclusive jurisdiction in cases triable by jury, where the matter or thing in question exceeds the value of one hundred dollars; and in some cases where smaller damages are claimed. The assistant judges of this court have no salaries, and their fees vary *probably* from $50 to $250 per annum, according to the business done in the respective County Courts. There are thirteen counties.

LEGISLATURE. The Counsellors and Representatives are paid $1,50 a day, and six cents, going and coming, for travel. The Speaker of the House receives $2,50 a day, and the same allowance for travel.

Receipts and Expenditures.

The revenue of the State is derived chiefly from direct taxation. The auditor's report for the year ending Sept. 30th, 1829, contains the following results.

RECEIPTS.

Balance in the Treasury at last settlement	$8,314 56
Interest on arrearages	644 72
Cash received of the several State's Attorneys *	1,887 34
On Bonds given Commissioners of Deaf and Dumb	105 00
Agents of Foreign Insurance Companies	201 72
Of Clerk of Windsor County, balance of County Court Fees	72 26
On Dividends of the several Banks	1,862 00

* This item is made up chiefly of fines, and forfeited recognisances for the appearance of criminals.

Pedlars' Licenses	799 23
On State Bank Debts	4,330 28
Of Principal of School Fund	289 75
Cash received of School Fund in Treasury last year	215 43
Cash received Interest on School Fund	827 30
On Taxes	39,942 46
Total	$59,492 05

EXPENDITURES.

Cash paid Debentures of last General Assembly, and the Salaries of the Judges of the Supreme Court*	$14,302 00
Several State's Attorneys †	1,619 72
Supreme Court Orders	15,987 14
Auditor's ‡ do.	3,725 93
Wolf Certificates §	260 10
Commissioners of Deaf and Dumb	2,400 00
Superintendent of the State Prison ‖	2,205 40
On Special Acts	569 08
Electors of President and Vice-President	78 36
Salaries of the Secretary of State, Clerk of the House, Secretary of Governor and Council, Auditor of Accounts, Engrossing Clerk, Governor, and Commissioners of School Fund	2,475 30
Cash applied to School Fund	8,060 00
Balance in the Treasury	7,809 32
Total	$59,492 05

Valuation for Tax List.

The Grand List, as it is called, for assigning the ratio of taxation, is made as follows. The polls of all males, except students of colleges, and persons properly equipped and doing military duty, between the ages of 21 and 60, are set in the list at $10; improved land, at 6 per cent. upon its value as ascer-

* The judges of the Supreme Court, when sitting with the assistant judges of the County Court for County Court business, receive the same fees as the assistant judges; but they account with the treasurer for the money thus received, as part of their salaries.

† The Supreme and County Courts, by their clerks, draw orders on the State Treasury for the expenses of conveying convicts to the State Prison, the fees of witnesses, and services and expenditures in those criminal cases where the penalty (if a fine may be imposed) goes to the State, and for the fees of State's attorneys, grand jurors, and clerks of the courts.

‡ The auditor of accounts against the State is empowered to audit, examine, allow, and draw orders for the payment of accounts between the State and persons acting under its authority, in all cases not required to be examined by the courts, or referred to some particular board by special enactment; a sort of appeal from the decision of the auditor may be taken to the General Assembly.

§ The bounty on each wolf is twenty dollars.

‖ The disbursements of the State Prison exceeded the income received from it, by the sum of $652·08. The superintendent in his report gives the State credit for $168·67 received for admission of visitors.

tained by appraisers; houses and lots appurtenant at 4 per cent.; mills, stores, distilleries, &c. at 6 per cent.; oxen at $2; cows and other cattle of three years old, at $1·25; cattle of two years old, at 75 cents; horses and mules of three years old, and of the value of $25 or less, at $1; horses and mules worth more than $25, and less than $75, at $3; horses and mules worth more than $75, at $6; horses and mules of two years old, at $2; do. of one year old, at $1·25; jack-asses at $40; sheep at 10 cents per head; carriages at 6 per cent. upon their appraised value; brass clocks and timepieces at $3; gold watches at $4; other watches at $1. Money on hand and debts due to (deducting debts due from) persons assessed, at 6 per cent.; bank and insurance stock (within the State) at 3 per cent.; attorneys, physicians, and surgeons, mechanics and manufacturers, and merchants and traders, in addition to their property, at such sum as the *listers* [assessors] think fit, (generally from $10 to $200.) Upon the list so made up, all taxes, school, state, town, district, and those for highways and bridges, are assessed.

Common Schools.

An act was passed in 1827 to provide for the support of common schools. The 4th section of the act was repealed in 1828, and in lieu of its provisions it was enacted, that the superintending committees should *recommend* (instead of *direct*) suitable class-books to be used in the schools; that the committee should not be required to visit each school more than twice during the term (generally three or four months), and that teachers may, at the request of any particular district, be licensed, though *not possessing* the qualifications specified in the first section. Very few town committees made the report prescribed by the act, the last year, and the number of schools or scholars cannot be ascertained, with any tolerable degree of accuracy. The money raised by the general law for the support of schools, at 3 per cent. on the Grand List, would amount to $51,119·42. Perhaps as much more is raised by district taxes, and a considerable sum is paid for the support of private schools.

In 1825 an act was passed, imposing upon all the banks in the State a tax of 6 per cent. upon their annual profits, and appropriating the money thus received, together with that derived from pedlars' licenses, and the remaining property of the old Vermont State Bank, to the creation of a fund for the

support of common schools. This fund is to be profitably invested under the direction of the Treasurer of the State, and is to accumulate until the income derived from it shall be sufficient to support a common free school in every district in the State, for two months in each year.

The report of the Treasurer of the School Fund was as follows, Sept. 30th, 1829.

To Amount loaned the year past as per receipt of Auditor, in the Treasury Department	$8,060 00
To Balance in Treasury applicable to this object . .	264 39
	$8,324 39
Cr.	
By Balance in the Treasury last year . . .	$215 43
By Cash received appropriated to this object, as per report of Auditor, in Treasury Department this day . .	8,108 96
	$8,324 39

The operations and increase of the School Fund will be more distinctly seen by the following statement.

By the Report of the Auditor last year, it appears that there was then on Loan the sum of	$15,993 07
Principal paid since that Report	289 75
	$15,703 32
Amount loaned the past year	8,060 00
Amount now on loan	$23,763 32

There are about twenty incorporated academies in the State, where young men may be fitted for college. No returns have been made, but the number of students will probably average about forty at each.

State Prison.

The State Prison at Windsor was established by an act of the Legislature in 1808. Confinement at hard labor in this prison is the punishment for almost all of that class of offences which are called *mala in se.* Murder, high treason, perjury, in those cases where the life of another is taken away by false swearing, and arson, where death or serious injury to the person ensues, are the only crimes punishable by death. In all cases not capital, the courts may impose a fine; but this is rarely done, except for the breach of positive statutes, and for assault and battery, riot, or resisting the execution of the laws. From the last report of the superintendent it appears, that the number of convicts in the prison on the 1st of October, 1828,

was 123. On the 1st of October, 1827, the number was 134. The convicts are chiefly employed in weaving cotton goods by hand looms; and 180,000 yards were woven the last year.

Banks.

State of the Banks, according to the Report of the Inspector, dated April 1st, 1828.

BANK OF BURLINGTON *owes—*

Stock paid in	$51,216 00
Bills in circulation	134,042 77
Deposites and dividends due	65,699 53
	$250,958 30

Funds and Property on Hand.

Discounted notes	$103,485 59
Stock in other Banks	3,200 00
Real estate at cost	10,450 50
Specie, current bills, and deposites in other Banks	161,153 63
	$278,289 72

BANK OF WINDSOR *owes—*

Stock paid in	$60,000 00
Bills in circulation	107,366 00
Deposites	5,639 10
	$173,005 10

Funds and Property on Hand.

Discounted notes	$143,322 77
Due from depositors & on book	8,988 93
Real estate at cost	2,006 12
Specie, current bills, and deposites	28,465 00
	$187,782 82

BANK OF BRATTLEBOROUGH *owes*

Stock paid in	$50,000 00
Bills in circulation	155,818 00
Deposites	23,930 28
	$229,748 28

Funds and Property on Hand.

Discounted notes	$132,367 44
Real estate at cost	2,408 84
Specie, current bills, & deposites	100,358 74
	$235,135 02

BANK OF RUTLAND *owes—*

Stock paid in	$50,000 00
Bills in circulation	207,357 00
Deposites and dividends due	5,727 62
	$263,084 62

Funds and Property on Hand.

Discounted notes	$119.514 52
Due on book	426 90
Real estate at cost	1,747 66
Specie, current bills, and deposites	147,050 04
	$268,739 12

BANK OF MONTPELIER *owes—*

Stock paid in	$30,000 00
Bills in circulation	147,560 00
Deposites	11,654 43
	$189,214 43

Funds and Property on Hand.

Discounted notes	$85,904 00
Due on book	7,287 00
Real estate at cost	2,047 19
Specie, current bills, and deposites	98,761 87
	$194,000 06

BANK OF CALEDONIA *owes—*

Stock paid in	$30,000 00
Bills in circulation	85,702 00
Deposites	4,041 09
	$119,743 09

Funds and Property on Hand.

Discounted notes	$58,377 68
Real estate at cost	3,506 38
Specie, current bills, and deposites . .	59,837 00
	$121,721 06

BANK OF ST. ALBANS *owes*—

Stock paid in .	$20,000 00
Bills in circulation	32,317 53
Deposites . .	6,309 61
	$58,627 14

Funds and Property on Hand.

Discounted notes	$46,535 38
Real estate at cost	1,400 00
Specie, current bills, and deposites . .	12,893 85
	$60,829 23

BANK OF VERGENNES *owes*—

Stock paid in .	$30,000 00
Bills in circulation	79,681 23
Deposites . .	5,854 79
	$115,536 02

Funds and Property on Hand.

Discounted notes	$49,994 46
Specie, current bills, and deposites . .	66,387 14
	$116,381 60

BANK OF BENNINGTON *owes*—

Stock paid in .	$29,400 00
Bills in circulation	51,322 00
Due Suffolk Bank of Boston . .	6,641 00
Deposites . .	3,293 74
	$90,656 74

Funds and Property on Hand.

Discounted notes	$48,909 34
Specie, current bills, and deposites . .	41,920 00
	$90,829 34

BANK OF ORANGE COUNTY *owes*—

Stock paid in .	$20,000 00
Bills in circulation	66,400 00
	$86,400 00

Funds and Property on Hand.

Discounted notes	$51,741 50
Specie, current bills, and deposites . .	27,799 52
	$79,541 02

From which it appears, that the Banks in operation on the 1st of April, 1828, had paid in $370,616 capital stock; that they had on hand at that time in specie and specie funds $674,904·27; that at that time they were authorized by their charters to circulate bills to the amount of $1,188,498·82, but actually had in circulation $949,844·53.

Note.—The two last named Banks were newly chartered, and did not go into operation until after the 1st of April, 1828.

Bank of Burlington	chartered in	1818	with a nominal	capital of	$150,000
" of Windsor	"	1818	"	"	100,000
" of Brattleborough	"	1821	"	"	100,000
" of Rutland	"	1824	"	"	100,000
" of Montpelier	"	1825	"	"	100,000
" of Caledonia	"	1825	"	"	100,000
" of St. Albans	"	1825	"	"	100,000
" of Vergennes	"	1826	"	"	100,000
" of Bennington	"	1827	"	"	100,000
" of Orange County	"	1827	"	"	100,000

Internal Improvements.

In 1824 an act of the Legislature was passed incorporating a company for the purpose of improving the navigation of Connecticut river. The company has gone into operation, and it is supposed the river will be rendered navigable for steamboats, nearly up to the 15 mile falls. They have not, however, yet made much progress in effecting the object of their incorporation. In 1825 the governor and council were authorized to appoint canal commissioners, to assist the United States' engineers in examining routes for canals, and $500 were appropriated to defray the expenses of the commissioners. The Legislature also appropriated $75 to defray the expense of surveying a canal route from Montpelier to Lake Champlain. United States' officers have examined routes from Lake Memphremagog to Connecticut river, and to Lake Champlain, and from the river to the lake, by way of Montpelier; but it is not likely that canals will ever be constructed on any of these routes. A company was incorporated in 1825, for the purpose of constructing a tow path along the bank of Otter Creek, from Vergennes to the lake, which has been accomplished.

MASSACHUSETTS.

Officers and their Salaries.

	Salary.
EXECUTIVE.	
Governor, Levi Lincoln, (term of office expires on the last Wednesday in May, 1830,)	$3,666 67
Lieutenant Governor, Thomas L. Winthrop	533 33
JUDICIARY.	
Supreme Court.—Isaac Parker, Chief Justice	3,500 00
Samuel Putnam, Associate	3,000 00
Samuel S. Wilde, "	3,000 00
Marcus Morton "	3,000 00
Common Pleas.—Artemas Ward, Chief Justice	2,100 00
Solomon Strong, Associate	1,800 00
John M. Williams "	1,800 00
David Cummins "	1,800 00
Municipal Court, Boston.—Peter O. Thacher, Judge	1,200 00
LEGISLATURE.	
40 Senators, 501 Representatives, Pay, $2 for each day's attendance, and $2 for every ten miles' travel.	

Receipts and Expenditures,

For the Year ending December 31st, 1828.

RECEIPTS.

On arrearages of State Tax	$38 95
Amount of the Bank Tax	190,427 20
Duties on Sales by Auction	34,297 65
Principal and Interest of Notes and Bonds due the Commonwealth	9,221 51
Lands in Maine sold by the Agents	2,724 60
Of County Treasurers	761 58
Of the Attorney General	217 00
Of the Solicitor General	131 12
Miscellanies	2,206 71
Money borrowed of Banks	210,000 00
Total of Receipts	$450,026 32

EXPENDITURES.

On Warrants and Rolls for the support of Government, including the pay of Representatives	$146,063 43
On Rolls of the Committee on Accounts for different years	70,888 53
County Treasurers	26,355 95
Principal and Interest of the 5 per cent. Funded Debt	293 08
Adjutant and Acting Quarter Master General's Department	4,687 00
Agricultural Societies	5,438 84
Support of Deaf and Dumb Persons in the Asylum at Hartford	6,227 79
Wounded Soldiers, $137, Pensioners $1243 33	1,380 33
Medical Institution in Berkshire County	1,000 00
Commissioners for settling the affairs of Massachusetts and Maine, principally for Surveying	951 37
Interest on Money repaid to Banks	2,425 74
Miscellanies	42,056 97
Principal of Money repaid to Banks	140,000 00
Total of Expenditures	$447,769 03

Memorandum.

Cash in the Treasury, January 1st, 1828	20,466 73
Amount of Receipts in 1828, including money borrowed of Banks	450,026 32
Amount of Expenditures in 1828, including money repaid to Banks	447,769 03
Amount of Cash in the Treasury, January 1st, 1829	$22,724 02

Schools.

The following results are contained in a Report of the Secretary of the Commonwealth for the year 1827, collected from imperfect returns of the several towns.

Number of Public School districts	972
Number of Academies and Private Schools	708
Estimated number of pupils in Private Schools	18,143
Number of pupils in the Public Schools	71,006
Amount paid for public instruction	$163,929 76
Estimated amount of private tuition	158,809 00

Medical School in Boston.

The Courses of Lectures begin annually on the third Wednesday in October, and are continued daily for three months, on the following subjects.

Anatomy and Surgery, by John C. Warren, M. D.
Chemistry, by John W. Webster, M. D,
Materia Medica, by Jacob Bigelow, M. D.
Midwifery and Medical Jurisprudence, by Walter Channing, M. D.
Theory and Practice of Physic, by James Jackson, M. D.

The apparatus and collections of specimens used in illustrating the demonstrative courses, are very extensive. The fees for all the courses amount to $70. Board is obtained for about $3 per week.

This institution now offers greater advantages for the acquirement of a thorough medical education, than it has done at any former period of its history. During the last two years the means of obtaining practical knowledge of the anatomical structure of the human body have been amply supplied to pupils, probably at a less expense than in any other of the schools in the United States. The opportunity of witnessing numerous important and capital operations in surgery, and of attending the clinical practice of one of the best regulated hospitals in this country, are gratuitously afforded to all who attend the lectures of the professors.

Militia.

[From the Return of December 18th, 1828.]

7 Divisions			
16 Brigades			
67 Regiments of Infantry, and			
1 Battalion	"		
494 Companies of Infantry		Aggregate of Infantry with the General Staff	49,658
11 "	Grenadiers		
107 "	Light Infantry		
36 "	Riflemen		
4 Regiments of Cavalry			
2 Battalions	"	Aggregate of Cavalry .	1,431
34 Companies	"		
4 Regiments of Artillery			
13 Battalions	"	Aggregate of Artillery .	3,255
51 Companies	"		
		Total . . .	54,344

Banks.

There are 65 Banks in the Commonwealth, of which the following are the aggregate returns for the year 1828.

Due from the Banks.

Capital Stock paid in	$20,140,050
Bills in circulation of $5 and upwards, not bearing interest	3,989,612
Bills in circulation under $5 not bearing interest	1,044,981
Bills or notes in circulation bearing interest	3,713,262
Net profits on hand	397,050
Balances due to other Banks	1,151,734
Cash deposited	2,020,226
Cash deposited bearing interest	484,335
Total amount due from the Banks	33,178,493

Resources of the Banks.

Specie	$1,225,294
Real estate	639,838
Bills of other Banks incorporated in this state	718,110
Bills of other Banks incorporated elsewhere	404,640
Amount of debts due	28,753,263
Total amount of the resources of the Banks	33,276,430

State Prison.

Number of Convicts, September 30, 1827		285
Received since		104
Remanded by the Court, who had detained for trial		2
		391
Discharged on expiration of sentence	77	
Pardoned	14	
Died	4	
Escaped	2	
Discharged by the Supreme Court	4	
	—	101
Remaining, Sept. 30, 1828		290

Whole number committed since 1805		2176
Discharged on expiration of sentence	1379	
Pardoned	366	
Escaped and not retaken	17	
Died	114	
Discharged by the Court	10	
Remaining, Sept. 30, 1828	290	
	——	2176

Of the whole number discharged there have returned on a second commitment 290; and of the 290, 32 were of those who had been pardoned. Of the 290 now in the prison, 135 are from Massachusetts; 21 New Hampshire; 14 New York, 13 Connecticut; 7 Pennsylvania; 11 Rhode Island; 9 Vermont; 15 Maine; 3 Virginia; 3 New Jersey; 3 South Carolina; 3 Maryland; 1 New Orleans; and the following Foreigners, *viz.* 20 from Ireland, 9 England; 9 Scotland; 2 France; 3 Nova Scotia; 2 Holland; 6 West Indies; 1 Portugal. *One sixth* part of the convicts are colored persons.

Expense and Income for the Year ending September 30, 1828.

To Stock on hand, Sept. 30, 1827		$17,151	87	By Cash received of the State Treasurer in full of a grant of the Legislature for the support of the Institution	$6,392 56
Provision department. For meat, meal, &c.		6,868	14	Cash received from the State Treasurer on account of the New Prison	10,000 00
Expense department. For wood, oil, &c.		3,414	03	Sales of stone	16,766 38
Clothing department. For cloth, leather, &c.		3,418	68	Labor departm't. Amount charged contractors	5,513 69
Pay of Officers		13,634	63	Labor departm't. Amount of labor on New Prison	4,578 00
Transportation of Prisoners		929	94	Labor departm't. Amount for repairing damages by fire	333 18
Amount paid Prisoners discharged		78	97	Amount credited interest account	11 72
Hospital department		527	44	Sales of oakum	285 41
Stone-cutters' department. For rough stone, steel, &c.		9,691	20	Fees received for admitting visitors	444 22
Labor department. For sheep skins		14	40	Stock for New Prison on hand	11,165 17
Betterment account. For stock and labor of convicts, repairing damages by fire		1,203	31	Stock on hand, Sept. 30, 1828	16,954 17
Stock and labor of convicts on New Prison		15,743	17	Balance	231 28
		$72,675	78		$72,675 78

RHODE ISLAND.

Receipts and Expenditures.

The following summary of the Treasurer's Report embraces the *six months* between October 25th, 1828, and April 29th, 1829.

Balance in the Treasury, October, 1828	$11,731 16
Receipts the last six months, except for Free Schools	8,795 92
	$20,527 08
Expenditures	11,673 03
Balance in the Treasury to new account	8,854 05
	$20,527 08

Banks.

Returns of the several Banks in the State of Rhode Island, to the General Assembly, at their October Session, 1828.

Names of the Banks.	Capital Stock paid in.	Deposites.	Bills in Circulation.	Specie.	Bills of other Banks.	Deposited in other Banks.
Providence . .	$500,000	$85,277 67	$51,293 00	$19,252 12	$2,939 29	$17,166 96
Exchange . .	500,000	73,831 19	24,160 00	12,747 33	6,607 00	1,816 17
Bank of N. America	100,000	137,494 44	21,158 00	24,140 36	1,266 00	3,348 70
Eagle Bank . .	300,000	26,517 24	14,930 00	12,327 25	2,103 50	921 59
Roger Williams .	499,950	83,500 36	39,043 00	39,831 66	12,306 00	1,205 86
Union, Providence	500,000	51,472 18	15,465 00	17,831 76	9,998 50	527 86
Merchants', Prov.	500,000	148,091 02	36,797 17	18,947 37	32,265 92	8,911 10
Mechanics', Prov.	378,550	63,214 08	32,872 00	16,427 65	14,140 00	2,030 23
High-Street Bank	19,590	4,482 15	8,187 00	13,194 17	4,969 00	
Mech's' & Manuf'rs'	100,000	13,748 62	8,335 00	4,736 15	4,024 86	1,716 73
Smithfield Exchange	40,000	4,063 00	12,898 00	6,768 22	1,910 00	905 00
Woonsocket Falls	12,184				192 81	323 00
Smithfield Union .	60,000	5,086 79	11,976 00	2,828 16	519 00	3,274 56
Village . . .	40,000	1,538 62	24,671 00	5,041 90	859 00	5,990 35
Burrillville . .	37,340	3,089 46	9,402 00	3,805 05	938 50	
Smithfield LimeRock	100,000	5,362 11	39,787 00	5,524 89	1,722 45	3,532 65
Cumberland . .	65,750	6,432 53	26,735 00	3,304 56	730 50	3,447 07
Franklin . .	38,000	5,171 23	17,558 00	4,248 35	881 00	3,413 46
Cranston . .	25,000	654 20	9,423 00	4,015 88	469 00	1,732 60
R. I. Agricultural .	49,780	32,051 79	23,932 00	5,888 42	221 00	
Scituate . .	15,660	1,266 06	10,463 00	3,169 61	1,300 00	144 45
Mount Vernon .	40,000	2,974 50	35,081 00	10,128 40	237 50	
Farmers' & Mech's'	200,000	27,414 11	37,413 00	12,576 26	1,164 00	9,057 93
Manufacturers' .	220,000	15,294 98	19,338 00	8,847 09	6,453 00	8,754 02
New England Pacific	83,750	4,102 04	19,286 00	6,428 14	2,792 00	1,524 84
Commercial, Bristol	150,000	3,271 45	10,178 00	2,149 22	3,617 35	853 15
Bank of Bristol .	150,000	45,051 49	3,618 00	5,020 00	4,631 00	6,399 13
Eagle, Bristol .	50,000	3,235 15	5,506 00	4,550 12	846 95	215 80
Freeman's . .	67,000	1,136 57	3,762 00	1,143 87	910 73	
Mount Hope . .	75,000	1,350 89	12,704 00	2,978 00	2,069 45	794 95
Warren . . .	100,000	5,051 21	13,122 00	3,475 19	1,218 64	2,260 27
Hope, Warren .	100,000	4,294 26	7,392 00	2,102 00	612 00	2,758 76
N. England Com'cial	75,000	8,815 30	27,553 00	5,131 51	2,242 50	7,636 66
R. Island Union .	200,000	16,612 42	23,893 00	8,646 18	3,946 30	6,061 04
Bank of R. Island	100,000	14,249 01	16,183 00	5,603 14	2,937 00	2,550 01
Merchants',Newport	50,000	18,232 35	28,167 00	7,042 99	7,122 75	2,345 84
Newport . .	120,000	37,845 77	32,535 00	5,876 66	5,346 25	4,634 63
R. Island Central	60,000	7,636 56	12,282 00	2,030 24	284 00	4,577 42
Warwick . .	20,000	2,337 59	7,401 00	1,383 30	893 00	1,506 32
Bank of Kent .	20,000	4,073 20	18,117 50	6,317 95	381 00	4,729 98
Pawtuxet . .	87,858	3,431 79	15,651 00	6,641 08	375 00	
North-Kingston .	44,400	5,553 20	19,564 00	5,322 96	890 00	
Narragansett .	50,000	5,481 70	10,110 00	4,383 17	872 00	620 34
Washington . .	75,000	1,886 74	25,125 00	8,336 02	3,699 74	3,050 20
Landholders' . .	50,000	1,033 68	19,618 00	2,195 30	250 50	5,202 03
Phœnix . . .	43,000	3,874 65	20,420 00	4,039 14	1,276 51	9,031 82
Bristol Union .	40,000	4,004 91	4,810 00	1,203 38	2,449 00	
	$6,151,912	1,000,595 39	887,969 67	357,612 07	163,881 50	150,353 14

Officers and their Salaries.

EXECUTIVE.	Salary.
Governor, James Fenner, (term expires on the first Tuesday in May)	$400
JUDICIARY.	
Supreme Court.—Samuel Eddy, Chief Justice	650
Charles Brayton, Samuel Randall, Associate, each	550

The Judges receive also an entry of $3 on Insolvent Petitions.

In each county is a Court of Common Pleas consisting of five Judges each, making 25 in the whole, besides the Judges of the Supreme Court.

LEGISLATURE. The Members of the Legislature receive $1,50 a day.

Schools.

In January, 1828, the Legislature appropriated $10,000 annually for the support of Public Schools, to be divided among the several towns in proportion to the population, with authority for each town to raise by annual tax double the amount received from the Treasury, as its proportion of the $10,000. There has been as yet no report of the number of school establishments under the act, but it is thought they may safely be put down at 60, as all the towns have availed themselves of its provisions. The whole number of Schools in the state now probably exceeds 650.

CONNECTICUT.

Officers and their Salaries.

EXECUTIVE.	Salary.
Gideon Tomlinson, Governor	$1100
John S. Peters, Lieutenant-Governor	300
JUDICIARY.	
Supreme Court.—Stephen T. Hosmer, Chief Justice	1100
John T. Peters, Jeremiah G. Brainard, James Lanman, David Dagget, Associate—each	1050

County Courts.—The Judges are appointed annually by the Legislature. Pay of the Chief Judge, $3 50 a day; and

of the Associate Judges $3 a day, during the Session of the Court, and 9 cents a mile for travel.

LEGISLATURE. Senators receive $2 a day during the Session of the Legislature, and 9 cents a mile for travel. The Speaker of the House of Representatives receives $2 50 a day; clerks, $2; members, $1 50, and 9 cents a mile for travel.

School Fund.

According to the Report of the Commissioner, the Capital of the Connecticut School Fund was as follows, on the 1st of April, 1829.

In Bonds and Mortgages	$1,454,435 31
Bank Stock	97,850 00
Cultivated Lands and Buildings	174,442 73
Wild Lands in Ohio, Vermont, and New York	138,423 95
Farming Utensils and Stock	1,750 00
Cash on Hand	15,359 69
Total amount of capital	$1,882,261 68

The revenue derived from the Fund during the year ending the 31st of March, 1828, amounted to $80,243 29. The State is divided into 208 School Societies, which contain, in the aggregate, according to the enumeration taken in August last, 84,899 children, between the ages of four and sixteen. The dividends made to schools from the School Fund, amount to 85 cents on each child enumerated; so that $72,164 16 have been paid from this Fund for the support of Common Schools during the past year.

The following summary shows the amount of money paid from the School Fund, and the number of children taught at different periods, in the respective counties.

Counties.	1820.		1824.		1828.	
	No. of children.	Amount of School Money.	No. of children.	Amount of School Money.	No. of children.	Amount of School Money.
Hartford	14,324	$11,459 20	14,223	$12,089 55	14,277	$12,135 45
New Haven	11,874	9,499 20	12,159	10,335 15	11,877	10,095 45
New London	12,028	9,708 80	11,970	10,174 50	12,042	10,239 95
Fairfield	12,851	10,280 80	13,192	11,213 20	13,231	11,246 35
Windham	7,826	6,260 80	7,935	6,744 75	8,071	6,860 35
Litchfield	12,658	10,126 40	12,787	10,868 95	12,498	10,623 30
Middlesex	7,042	5,633 60	7,139	6,068 15	7,220	6,137 00
Tolland	5,576	4,460 80	5,744	4,882 40	5,678	4,826 30
Total	84,179	$67,429 60	85,149	$72,376 65	84,899	$72,164 15

Banks.

Statement of the Annual Bank Returns made to the Legislature at their Session in 1829.

Hartford Bank.

Capital	$1,252,900 00
Bills in circulation	362,662 06
Deposites except from Banks	101,530 95
Deposites from Banks	22,426 84
Dividends unpaid	1,014 03
	$1,740,534 88

Due Bank, considered good	$1,396,902 56
Bank Stock	104,300 00
Cash on hand	84,946 68
Cash deposited in other Banks	51,746 10
Real estate, except Banking House	9,418 26
Banking House	24,169 54
Deficiency	67,051 74
	$1,740,534 88

Phœnix Bank, Hartford.

Capital	$1,218,500 00
Notes in circulation	446,961 64
Deposites, except from Banks	141,379 47
Deposites from Banks	22,310 55
Unclaimed dividends	4,249 62
Earnings on hand	90,759 61
	$1,924,160 89

Bonus paid for Charter	$50,000 00
Real Estate	46,329 27
Bank Stock	500 00
Debts due, except from Banks	1,521,638 34
Notes of Essex Bank, and Expenses on do.	53,141, 50
Cash, viz. in Bank	110,977 25
Deposites in other Banks	142,192 50
	$1,924,778 86

Union Bank, New London.

Capital	$100,000 00
Amount of discounted Bills	122,031 30
Deposites	8,483 88
Bills in circulation	54,239 00
Real Estate	15,594 90
Specie funds in New York, and Bills of Banks paying specie	23,495 91
Amount due from Banks & sundry individuals	5,079 01
	$328,924 00

New London Bank.

Capital	$146,437 50
Debts due the Bank	168,031 26
Deposites	11,021 83
Bills in circulation	35,380 00
Cash on hand Do. in other Banks	19,038 43
Real Estate	8,499 62
	$388,408 64

Windham County Bank.

Capital	$104,390 00
Deposites	22,289 04
Notes in circulation	44,324 50
Dividend unpaid	242 25
Debts owed by Bank	820 98
Balance of interest ac.	2,661 91
Excess	52 20
	$174,779 88

Cash	$11,272 48
Deposites in New York	1,483 93
" in Boston	8,042 22
" in Providence	4,072 54
" Con. Banks	3,078 47
Debts due the Bank	144,448 94
Real Estate	1,861 59
Profit and loss	519 71
	$174,779 88

Stonington Bank.

Capital	$53,000 00
Bills discounted	63,523 52
Notes in circulation	20,031 00
Specie funds	14,456 59
Deposites	3,782 01
Real Estate	1,500 00
	$156,293 12

NORWICH BANK.

Capital	$150,000 00
Notes in circulation	75,909 50
Due other Banks	12,016 61
Deposites	17,117 89
Real Estate	3,815 74
Debts due the Bank	212,777 71
Cash in the Bank, and deposites in other Banks	48,822 56
	$520,460 01

FAIRFIELD COUNTY BANK.

Capital	$133,000 00
Notes in circulation	199,939 00
Deposites	28,072 78
	$361,011 78
Bills discounted	$115,640 16
Specie funds	208,311 39
Cash	27,095 49
Real Estate	9,954 74
	$361,011 78

MECHANICS' BANK, New-Haven.

Bills discounted	$218,776 64
Farmington Canal stock	200,000 00
Real Estate	8,625 17
Specie on hand	21,871 38
Notes and checks in other Banks	5,312 32
Loaned in N. York, subject to be drawn at sight	96,128 58
Due from other Banks	4,482 19
	$555,196 28
Capital paid	$333,850 00
Notes in circulation	135,347 00
Profits	3,707 48
Dividend unpaid	1,112 60
Deposites	81,179 14
	$555,196 22

MIDDLETOWN BANK.

Capital	$400,000 00
Notes in circulation	152,892 08
Deposites, including balances due to other Banks, and disc't ac., and profit and loss ac.	125,965 49
	$676,857 57
Debts due the Bank, including Stock and Banking House	594,327 94
Cash, including Deposites in other Banks, & Notes of do.	84,229 28
Expenses since Jan. 1	300 25
	$676,857 57

BRIDGEPORT BANK.

Capital	$100,000 00
Notes in circulation	85,354 00
Deposites	28,895 37
	$209,249 37
Bills receivable	$71,203 50
Due from Mechanics'	8,180 27
Real Estate	7,874 05
Specie funds	96,779 89
Cash on hand	25,211 66
	$209,249 37

NEW-HAVEN BANK.

Capital	$339,600 00
Notes in circulation	146,615 00
Deposites	109,699 19
	$595,864 19
Bills discounted	$438,958 94
Specie, Bills of other Banks, and Funds in New York	144,422 48
Real Estate	8,254 26
Due from other Banks	4,218 57
	$595,864 19

THAMES BANK.

Capital	$153,500 00
Deposites	17,480 50
Bills in circulation	65,344 00
Due other Banks	30,686 37
	$266,910 87
Debts due the Bank	$223,694 34
Real Estate	4,640 55
Deposited in other Banks	24,949 97
Cash on hand	16,002 60
	$269,287 46

Receipts and Expenditures.

Abstract from the Controller's Report for the year ending April 1st, 1829.

RECEIPTS.

Balance in the Treasury	$25,770 07
Avails of Courts	78 71
Forfeited Bonds, &c.	958 02
Duties on Writs and Licenses	10,091 42
Notes, &c.	3,337 42
Dividends on Bank Stock	15,530 85
Interest on United States Funded Debt	1,659 08
Taxes	36,948 49
Total of Receipts	$94,374 06

EXPENDITURES.

Salaries	$9,034 00
Debentures and Contingent Expenses of General Assembly	13,484 91
Contingent Expenses of Government	8,830 36
Judicial Expenses	23,209 11
Expenses of supporting State Paupers	2,000 00
Warden of State Prison, for Advances	2,201 98
Quarter Master General	747 50
Building Committee of State House at New-Haven	9,201 00
Registered Debt discharged for Orders paid	357 87
	$69,063 73

Treasurer's Accounts, audited for Payments made by him, viz.

Abatements on State Tax, payable 20th February, 1829	$4,478 10
Collecting Fees and Travel	1,411 65
	$5,889 75
Total of Expenditures	$74,953 48
Leaving a balance in the Treasury of	$19,420 58

State Fund.

Fund in Bank Stock not transferable	$327,100 00
" Bank Stock transferable	52,700 00
" United States Funded Debt	55,302 66
Total Fund	$435,102 66

State Prison.

This contains 134 convicts, of whom 24 are under 20 years of age, 78 between twenty and thirty, 14 between thirty and forty,

9 between forty and fifty, 5 between fifty and sixty, 2 between sixty and seventy, 2 over seventy. The income and expenditures of the prison for the year ending April 1st, 1829, were as follows.

INCOME.		EXPENDITURES.	
From Smiths' Shop .	$474 39	For Provisions .	$1,863 03
Coopers' Shop	6,258 88	Clothing and Bedding	495 20
Shoe Shop .	3,540 62	Wages, Subsistence,	
Nail Shop .	1,771 64	Fuel, Furniture, &c.	3,378 78
Carpenters' Shop	1,363 72	Hospital . .	139 12
Taylors' Shop	15 84		
Interest . .	16 52	Total amount of Expenditures . . .	$5,876 13
Labor of Lumpers	49 35	Gain to the Institution	3,229 41
Visitors . .	614 58		
Total amount of Income	$9,105 54		$9,105 54

Asylum for the Deaf and Dumb at Hartford.

The instructors at this institution are Thomas H. Gallaudet, Principal, and nine Assistants.

There have been received into the Asylum since its commencement 303 pupils, of whom 160 have left the school, and 143 were remaining in May, 1829.

The Directors state in their report, that of the 279 pupils, who have received the benefit of the Institution, 116 were born deaf, 135 lost their hearing in infancy, or childhood, by disease or accident, 28 uncertain.

These 279 pupils have come from 247 families, 47 of which have contained more than one deaf and dumb child; 29 families have each contained two; 4 families three; 7 families four; 4 families five; 2 families six; and 1 family seven. In one instance, the father and two children are deaf and dumb. In another, the father is deaf and dumb, and also 4 of the children. These are the only instances, that have come to the knowledge of the Directors, in which either of the parents has labored under this defect.

The expenses of the Institution for the last year were $22,979 37, and the receipts $23,041 55, leaving a balance of $62 18.

The annual charge to each pupil is $150, which includes board, lodging, washing, fuel, stationery, and tuition.

In the year 1823, the State of Connecticut appropriated $1500 for the Asylum; in 1829 the amount was extended to $2000. The present grant of Massachusetts is $6500 an-

nually, which, if not expended for pupils sent to the Asylum for the term of 4 years, may be applied to the continuance of such as are deserving of it for a longer period. The States of Maine, New Hampshire, and Vermont, also make appropriations for the same purpose.

NEW YORK.

Officers and their Salaries.

EXECUTIVE.

Enos T. Troop, Lieutenant-Governor, acting as Governor. Salary, $4000. Incidental Expenses, $750. Rent and Taxes of his house also paid. Term of service expires Dec. 31, 1830.

JUDICIARY.

	Salary.
Reuben A. Walworth, Chancellor . .	$2000
Supreme Court.—John Savage, Chief Justice,	$2000 each.
Jacob Sutherland, Associate,	
William L. Marcy, "	

Circuit Court.—8 Judges. Salary, $1250 each.

1. Ogden Edwards.	5. Nathan Williams.
2. James Emott.	6. Samuel Nelson.
3. William A. Duer.	7. Daniel Mosely.
4. Esek Cowen.	8. John Birdsall.

The term of service of all the above judges expires at the age of 60 years.

There are 55 counties in the State, in each of which (except in New York) there are five judges of the County Courts. No salary paid by the State. Term of service, 5 years.

Superior Court, New York.

Samuel Jones,
Josiah Ogden,
Thomas I. Oakley,
} Judges. Term of service 5 years.

LEGISLATURE.

32 Senators.
128 Members of Assembly.
} Pay $3 per day, fixed by the constitution.

Receipts and Expenditures.

STATEMENT of the Balance in the Treasury, and the Amount of Receipts and Payments of the official Year, ending the 30th Nov. 1828.

RECEIPTS.

Tolls received on the Erie, Champlain, and Oswego Canals	$822,134 87
Vendue Duty	257,187 40
Taxes on Salt manufactured in the Western District	111,546 36
Interest on Bonds for Lands of the General Fund	40,145 31
Principal of the same	29,264 69
Interest on Bonds for Lands of the Common School Fund	6,204 48
Principal of the same	5,452 03
Interest on miscellaneous Bonds and Mortgages	10 17
Principal of the same	219 83
Interest on Bonds for Lands of the Literature Fund	4,314 88
Principal of the same	2,843 43
Interest on Bonds for escheated Lands	594 03
Principal of the same	1,301 62
Interest on Loan of 1786	2,005 80
Principal of the same	1,529 17
Interest on the Loan of 1792	23,434 27
Principal of the same	20,972 61
Interest of the Loan of 1808	23,422 08
Principal of the same	3,817 96
Dividends on Bank Stock, viz.—Bank of America	3,283 20
New York State Bank	1,432 02
Mechanics' and Farmers' Bank	845 00
Bank of Columbia	1,200 00
Mohawk Bank	300 00
Merchants' Bank	11,448 00
Manhattan Company	3,500 00
Middle District Bank	3,000 90
Interest on Loans to Individuals and Corporations	14,470 30
Principal of the same	16,196 68
Public Stock of the general Fund, sold to the Commissioners of the Canal Fund	20,000 00
Balances due from Individuals on the Settlement of their Accounts	54 00
Fees accounted for by the Comptroller	527 44
Fees accounted for by the Secretary of State	576 20
Wharfage, &c. from the State Pier at Sagg-Harbour	285 65
Sales of General Fund Lands	5,430 63
" of School Fund "	12,567 12
" of escheated "	200 11
" of Literature Fund Lands	246 00
" of Oswego Canal Fund Lands	13,960 00
Rents of surplus Waters	1,723 00
Rents of Lands leased of the General Fund	420 30
" of the School Fund	537 44
Fees of the Clerk's Office of the Supreme Court	782 77
Interest on Loans of the Literature Fund	365 18
Premium on Sales of Stock issued by the State for the benefit of the Delaware and Hudson Canal Company	34,726 75

Interest on Public Stock of the General Fund	$15,000 00
" of the School Fund	13,910 92
State Tax	249 99
Pedlars' Licenses	1,990 00
Arrears of County Taxes	27,570 58
Interest of the same	3,367 78
Quit-rents	52 44
Tax on incorporated Companies	28,980 17
Redemption of Lands sold for Arrears of Taxes	76,564 68
Of the Commissioners of the Canal Fund, for Amount advanced to them in 1827 and 1828, out of the general funds	155,196 01
Tax for draining Marsh in Madison County	4,951 29
Redemption of Lands sold for said Tax	155 32
Sales of Lands for Arrears of County Taxes, and Direct Tax of United States	21 11
Military Fines	145 14
Miscellaneous Receipts	105,421 98
	$1,938,006 19

EXPENDITURES.

Late Governor	$1,460 27
Lieutenant-Governor, acting as Governor	2,539 73
Incidental Expenses of Government	750 00
Lieutenant-Governor	954 00
Chancellor and Justices of the Supreme Court	8,185 30
Justices of the Circuit Courts	10,085 64
Comptroller	2,500 00
Clerk hire for the Comptroller's Office	6,500 00
Stationery and contingent Expenses of ditto.	672 16
Late Deputy Comptroller	1,413 69
Present "	164 38
Secretary of State and Superintendent of Common Schools	1,500 00
Clerk hire for the Secretary of State's Office	807 00
Stationery, &c. for " "	385 21
Deputy Secretary	1,500 00
Treasurer	1,375 00
Clerk hire for the Treasurer's Office	250 00
Stationery and Expenses for ditto	194 57
A. Oake, Treasurer's Clerk	1,100 00
Surveyor-general	850 00
Clerk hire for the Surveyor-general's Office	737 50
Stationery and Expenses for ditto	182 34
Attorney-general	1,000 00
Clerk hire for Attorney-general's Office	600 00
Adjutant-general	800 00
Clerk hire for the Adjutatant-general's Office	350 00
Judge Advocate-general	150 00
Commissary-general	700 00
Late Reporter of the Supreme Court	284 25
Present " "	205 82
Late Reporter of the Court of Chancery	288 36
Present " "	212 67
Late private Secretary of the Governor	300 00
Present " "	300 00

State Librarian	$477 00
Chancellor's Clerk	604 11
Clerk of the Court of Exchequer	625 00
Legislature	125,732 90
Court of Errors	7,623 10
Auburn State-Prison	9,376 00
Trasportation of Convicts	3,361 20
Mount Pleasant State-Prison	41,366 18
Apprehension of Fugitives from Justice	3,385 03
College of Physicians and Surgeons in the City of New York	500 00
Support of Foreign Poor in the City of New York	12,500 00
Deaf and Dumb (Central Asylum)	1,260 00
" (New York)	4,632 72
Gun-houses	300 00
Bounties for the Destruction of Wolves	1,138 75
Draining Cayuga Marshes	20,000 00
Premium on Salt manufactured at Salina	3,071 40
Canal Appraisers	2,043 00
Indian Annuities	17,067 92
Sarah Doxstader, her Annuity	70 00
Schools in New-Stockbridge	300 00
Incidental Expenses attending Indian Affairs	500 00
Agent of the Onondaga Indians	50 00
Attorney to the Oneida, New-Stockbridge, and Brothertown Indians	106 25
Brigade Inspectors	3,972 00
Division "	12 00
Adjutant-general's Department	833 01
Counsel to assist Attorney-general	1,018 00
Costs of Suit	663 46
Courts-martial	1,568 00
Commissary's Department	5,965 22
Keepers of Arsenals	125 00
James Minor, for his Annuity	60 00
Jeremiah Ryan, "	100 00
Frederick Sammons	150 00
Slaves	109 12
Repairs of the State Hall	258 17
Postage of the official Letters of the Secretary of State, and Superintendent of Common Schools, the Comptroller, Treasurer, and Adjutant-general	1,586 14
Proportion of Tolls, to the Owners of the Albany Basin, for 1827	2,660 27
State Library	1,419 26
County Treasurers	47,877 94
Clerks of Counties	36 12
Claimants of Lands improperly sold	218 00
Printing for the State	21,769 22
Sheriffs	6,947 55
Survey, &c. of public Lands	1,500 00
Commissioners of the Canal Fund, advanced out of the General Fund, for the Construction of the Oswego and the Cayuga and Seneca Canals	18,135 42
Erroneous Payments into the Treasury, refunded	645 51
Roads	5,359 52

Surveys of Canal Routes	$460 30
Revising and Publishing the Laws	20,115 05
Commissioners of the Canal Fund	1,173,018 04
Hospital in the City of New York	22,500 00
Escheated Lands	504 07
Common Schools	100,000 00
Orphan Asylum in the City of New York	500 00
Commissioners for draining the Madison County Marsh	5,318 92
Discoverers of forfeited Estates	185 91
Delaware and Hudson Canal Stock, for Account of the Common School Fund	107,766 63
Regents of University	2,307 07
Redemptions received into the Treasury for Lands sold for County Taxes, and refunded to the Purchasers	74,984 80
Military Fines	693 79
Erroneous Payment of Quit-rents into the Treasury, refunded	227 10
Peter Smith, amount paid by him, &c. refunded	99 00
Special Messengers	10 00
Canal Fund	11,983 02
" miscellaneous Payment	172 29
Miscellaneous Payments	39,581 11
	$1,988,804 48

State Funds.

Account of the Nature and Amount of the Funds belonging to the State, as reported by the Controller, January 14, 1829.

1. General Fund, consisting of Bank Stock, Bonds, Mortgages, and Loans	$1,644,986 79
2. Common School Fund	1,684,628 80
3. Literary Fund	256,858 96
4. Canal Fund	356,289 49

This last item denotes only the money on hand Jan. 1, 1829, being a balance of the proceeds of the canals, during the preceding year. The *Canal Fund*, as a valuable possession of the State, cannot be estimated in money. It consists of lands granted for the construction of the canals by the State, by companies, and by individuals, remaining unsold; and also of the canals themselves. To this fund also belong a part of the auction duty, the whole of the salt tax, the steam-boat tax, and the canal tolls.

Revenue of Canals.

The following is the net amount of tolls collected on the canals, in the year 1828.

Erie Canal	$727,650 20
Champlain Canal	107,757 08
Oswego Canal	2,757 67
Cayuga and Seneca Canal	279 70
Total amount collected during the year	$838,444 65

The commissioners of the canal fund, in their Report, of March 20, 1829, make the following estimate of the revenue and expenditure for the current year.

ERIE AND CHAMPLAIN CANAL FUND.

Balance of Revenue in hand, 1st January, 1829		$343,135 26
Canal Tolls		850,000 00
Vendue Duty		200,000 00
Salt Duty		130,000 00
Interest on Delaware and Hudson Canal Stock		10,000 00
" Neversink Navigation Co. "		500 00
" Loan to the City of Albany		9,000 00
" The Deposit of the Fund		7,000 00
Amount due from the Cayuga and Seneca Canal Fund		63,957 86
		$1,613,593 12
The Payments on account of this Fund during the Year, will be, for		
Interest on Loans	$397,592 80	
Estimated Expense of Repairs, Improvements, Superintendence, and Collection of Tolls	250,000 00	
Damages	20,000 00	
Incidental Expenses of the Commissioners of the Canal Fund	500 00	—668,092 80
Balance of the Revenue over the estimated charges upon it for the current Year		$945,500 32

OSWEGO CANAL FUND.

Balance of Revenue in hand, 1st January, 1828		$13,154 23
Amount Commissioners are authorized to raise by Loan		15,000 00
Canal Tolls		20,000 00
		$48,154 23
The Payments on account of this Fund during the Year will be, for		
Interest on Loans	$21,850	
Amount required to complete the Canal, and for Repairs, and collection of Tolls	20,000	
Extra Allowances on Canal Contracts	20,000	—61,850 00
Deficiency of the Revenue for the current Year to meet the estimated charges upon it		$13,695 77

CAYUGA AND SENECA CANAL FUND.

Canal Tolls	$25,000 00
Amount the Commissioners are authorized to raise by Loan	55,000 00
	$80,000 0

The Payments on account of this Fund during the Year, will be, for

Interest on Loans	$10,000 00	
Cost of Repairs, Superintendence, and Collection of Tolls	8,000 00	
Extra Allowances by Canal Board	10,000 00	
Amount due the Erie & Champlain Canal Fund	63,957 86	—91,957 86
Deficiency of the Revenue to meet the estimated charges upon it for the current Year		$11,957 86

Canal Debt.

ERIE AND CHAMPLAIN CANALS.

Amount of Stock bearing an Interest of 5 per cent.		$4,409,655 99
" " " 6 per cent.		2,943,500 00
		$7,353,155 99
Redeemable as follows, viz.		
5 per cent. 1st July, 1837	$1,400,000 00	
6 " " "	2,093,500 00	
5 per cent. 1st July, 1845	3,009,655 99	
6 " " 1846	850,000 00	—7,353,155 99

OSWEGO CANAL.

5 per cent. redeemable 1st July, 1846	437,000 00

CAYUGA AND SENECA CANAL.

5 per cent. redeemable 1st July, 1846	$150,000 00

Progress of Vegetation.

The following table, containing the results of observations, will afford an index to the progress of vegetation in several parts of the state of New York. The table is constructed for the year 1828.

	Albany.	Clinton.	Franklin.	Johnstown.	Onondaga.	Utica.
Lilacs in blossom			May 20			May 12
Mezereon in blossom	Mar. 29					
Currants in blossom	May 2	May 5	May 7	May 6	May 4	May 6
Shad bush in blossom	May 3		May 5		May 2	
Gooseberries in blossom	May 3					
Peach in blossom	May 5	May 2	May 7			
Apples in blossom	May 15	May 16	May 15	May 13	May 8	May 15
Cherry in blossom			May 10			
Locust trees in blossom			June 5			
Daffodil in blossom				May 4		
Pear trees in blossom		May 10	May 16	May 8	May 1	
Dog-wood in blossom		May 4	June 9			
Plums in blossom			May 10	May 6	April 30	May 5
Dandelions in blossom			May 17			
Strawberries in blossom		May 9		May 2		
Indian corn in silk		July 19				
Barn swallows seen		April 20	April 27	April 23	April 24	April 12
Robins seen			Mar. 22	Mar. 19		Mar. 15
First thunder-storm	Mar. 24				Mar. 24	
Strawberries ripe		June 8	June 23	June 9	June 5	
Currants ripe			July 8			
Cherries ripe		July 5		July 10		
Hay harvest commenced					June 21	
Wheat harvest commenced		July 17	July 22	Aug. 5		
First fall of snow	Nov. 12	Nov. 14	Oct. 14	Nov. 16	Oct. 15	Oct. 14
First killing frost in autumn	Oct. 15	Oct. 16	Sept. 30	Oct. 12	Oct. 16	Oct. 14

Banks.

STATEMENT of the Names; the Time of Incorporation; Limitation, by Act of Incorporation or subsequent Acts; the Amount of Capital authorized to be invested; the Amount paid in, or secured to be paid in, so far as the Controller is enabled to ascertain the same; the Amount of Stock authorized to be subscribed for, and the Amount now owned by the State.

NAMES OF COMPANIES.	Time of Incorporation.	Limitation.	Capital auth. to be invested.	Capital paid.	Am't of Stock auth. to be sub. for by State.	Am'nt now owned by the State.
Bank of Albany	10 Apr. 1792	1832	$240,000	$240,000	$43,800	sold
New York State Bank, Albany	19 Mar. 1803	1832	369,600	369,600	126,000	$16,800
Mechanics' & Farm Bank "	22 Mar. 1811	1831	640,000	312,000	30,000	10,140
Commercial Bank "	12 Apr. 1825	1845	300,000	....	....	....
Albany Savings Bank	24 Mar. 1820	...	....	....	....	....
Bank of Auburn	31 Mar. 1817	1832	400,000	143,928	....	....
Bank of Chenango, Norwich	21 Apr. 1818	1834	200,000	100,000	....	....
Bank of Plattsburgh	7 Apr. 1817	1832	300,000	60,000	....	....
Bank of Columbia, Hudson	6 Mar. 1793	1832	180,000	168,112	....	20,000
Bank of Hudson	25 Mar. 1808	1832	310,000	....	....	15,000
Middle Dist. Bank, Poughkeepsie	22 Mar. 1811	1832	550,000	191,335	....	50,000
Dutchess County Bank "	12 Apr. 1825	1845	150,000	....	....	....
Bank of Niagara, Buffalo	17 Apr. 1816	1832	400,000	....	....	....
Catskill Bank	26 Mar. 1813	1833	350,000	88,000	....	....
Greene County Bank, Catskill	21 Apr. 1818	1832	90,000	70,883	....	....
Jefferson Co. Bank, Watertown	17 Apr. 1816	1832	400,000	74,000	....	....
Long Island Bank, Brooklyn	1 Apr. 1824	1840	300,000	300,000	....	....
Bank of Rochester	19 Feb. 1824	1840	250,000	150,000	....	....
Bank of New York	21 Mar. 1791	1832	1,000,000	965,000	65,000	sold
Manhattan Company, New York	2 Apr. 1799	1838	2,050,000	2,050,000	....	50,000
Merchants' Bank "	26 Mar. 1805	1832	1,490,000	1,490,000	....	180,000
Mechanics' Bank "	23 Mar. 1810	1832	2,000,000	2,000,000	250,000	....
Union Bank "	8 Mar. 1811	1831	1,000,000	1,000,000	....	....
Bank of America "	2 June, 1812	1832	2,049,500	2,049,500	....	60,800
Phœnix Bank "	15 June, 1812	1832	500,000	500,000	....	....
City Bank "	16 June, 1812	1832	1,496,250	1,496,250	....	....
Franklin Bank "	21 Apr. 1818	1832	500,000	500,000	....	....
North River Bank "	23 Mar. 1821	1842	500,000	500,000	....	....
Tradesmen's Bank "	29 Mar. 1823	1833	600,000	600,000	....	....
N. Y. Chemical Manufac. Co.	1 Apr. 1824	1844	500,000	500,000	....	....
Fulton Bank, New York	1 Apr. 1824	1844	500,000	250,000	....	....
Del. & Hud. Canal Co. "	19 Apr. 1824	1844	500,000	500,000	....	....
New York Dry Dock Company	12 Apr. 1825	Unlim.	200,000	....	....	....
Bank for Savings, New York	26 Mar. 1819	...	....	....	....	....
Branch of the U. S. Bank "	...	...	....	....	....	....
Bank of Utica	1 June, 1812	1832	1,000,000	315,350	2000 sh.	....
Bank for Savings, Utica	27 Mar. 1821	...	....	....	....	....
Ontario Bank, Canandaigua	12 Mar. 1813	1833	500,000	400,000	....	....
Bank of Geneva	28 Mar. 1817	1832	400,000	200,000	....	....
Bank of Newburgh	22 Mar. 1811	1832	400,000	120,000	50,000	sold
Bank of Orange County, Goshen	6 Apr. 1813	1833	400,000	105,660	....	....
Central Bank, Cherry-Valley	21 Apr. 1818	1833	200,000	72,000	....	....
Farmers' Bank, Troy	31 Mar. 1801	1832	390,000	278,000	30,000	sold
Bank of Troy	22 Mar. 1811	1831	550,000	176,000	16,000	sold
Troy Savings Bank	23 Apr. 1823	...	....	....	....	....
Lansingburgh Bank	19 Mar. 1813	1833	220,000	72,000	6,000	sold
Mohawk Bank, Schenectady	13 Mar. 1807	1830	265,000	165,000	....	5,000
Bank of Washington and Warren, Sandy-Hill	7 Apr. 1817	1832	400,000	400,000	....	....

Academies.

From the last Report of the Regents of the University, respecting the Academies of the State, the following abstract is drawn.

Number of Academies in the State	50
Whole number of Students	3,424
Number of Teachers	146
Amount of Money apportioned by the Regents out of the Literary Fund	$ 9,993 88
Total Value of the Academy Lots and Buildings	283,353 57
Value of other Real Estate	27,018 42
Philosophical Apparatus and Library	14,147 21
Other Personal Estate	115,797 59
Tuition Money for the year	41,913 16
Interest or income of permanent Fund	8,901 11
Debts due	28,423 03

Common Schools.

The following statements are derived from the Report of the Superintendent of Common Schools to the Legislature, February 6, 1829.

1. Condition of the Common Schools.

There are 55 organized counties, and 757 towns and wards in the State, from all of which the Reports in relation to Common Schools have been received.

There are in the towns which have made Reports, 8609 school districts, and consequently the like number of schools organized. Returns have been received from 8164 of those districts.

It appears, also, that 311 new school districts have been formed during the year 1828, and that the number of districts which have made returns, exceeds that of the preceding year by 358.

That there are in the districts from which Reports have been received, 449,113 children, between the ages of 5 and 15; and that in the Common Schools of the same districts, 468,205 scholars have been taught during the year 1828—the general average of instruction having been about 8 months.

The number of scholars instructed in the Common Schools, exceeds, by 11,775, the whole number of children between the ages of 5 and 15. This estimate does not include the scholars instructed in the cities of New York and Albany, where the children between 5 and 15 are not reported.

The returns show an increase of 29,897 of the children between 5 and 15; and the number of children taught in the Common Schools of the State has increased 26,349, since the last annual Report.

Under the present school system, the first returns were made in 1816. There were reported in that year, 2,755 school districts, in which 140,106 children were instructed. The increase of school districts in 13 years has been 5,854, and the increase of the number of scholars instructed in the same period has been 328,099.

2. Estimates and Expenditures of the School Moneys.

During the year 1828, $232,343 21 have been paid to the several school districts which have made Reports. Of this sum $100,000 were paid from the state treasury; $119,209 30 were raised by a tax upon the several towns in the State, and $13,133 91 were derived from a local fund, possessed by certain towns. The towns have raised, by a voluntary tax, $19,209 30 more than was required to entitle them to the public moneys.

The amount distributed among the several district schools exceeds that of the preceding year by $9,347 44.

The productive capital of the Common School fund has been increased, since the last annual Report, by $61,854 34.

The productive capital of the Common School fund now amounts to $1,684,628 80.

The revenue actually received into the treasury, on account of the Common School fund, for the past year, has been $89,034 96; leaving a deficit in the amount annually distributed, of $10,965 04, to be supplied from the general funds of the State. The revenue of the next year is estimated by the controller, at $105,200.

In addition to this fund, the constitution provides, that "the proceeds of all lands belonging to this State, which shall be hereafter sold or disposed of, shall belong to the fund for the support of Common Schools." The lands embraced in this provision are computed by the surveyor-general at 869,178 acres, and although much of this land is rough, and at present inaccessible, the receipts from this source, must, in a few years, make the total school fund at least two millions of dollars.

In several of the counties there is a local fund for the use of schools. This fund is derived from reservations made by the State for the use of schools, in granting certain tracts of land. Seventy-four towns are reported as having participated in this local fund, the total revenue of which, for the last year, has been $13,133 91.

A Comparative View of the Returns of Common Schools, from 1816 to 1828, inclusive.

The year in which the report was made to the Legislature.	Number of towns from which the returns were made.	Whole number of school districts in the said towns.	Number of school districts from which returns were received.	Amount of public moneys received in the said towns.	Number of children taught in the school districts making returns.	Number of children between 5 and 15 years of age, residing in those districts.	Proportion of the number of children taught, to the number of children reported, between the ages of 5 and 15.
1816	338	2,755	2,631	$ 55,720 98	140,106	176,449	4 to 15
1817	355	3,713	2,873	64,834 88	170,386	198,440	6 to 7
1818	374	3,264	3,228	73,235 42	183,253	218,969	5 to 6
1819	402	4,614	3,844	93,010 54	210,316	235,871	8 to 9
1820	515	5,763	5,118	117,151 07	271,877	302,703	9 to 10
1821	545	6,332	5,489	146,418 08	304,559	317,633	24 to 25
1822	611	6,659	5,882	157,195 04	332,979	339,258	42 to 43
1823	649	7,051	6,255	173,420 60	351,173	357,029	44 to 45
1824	656	7,382	6,705	182,820 25	377,034	373,208	94 to 93
1825	698	7,642	6,876	182,741 61	402,940	383,500	101 to 96
1826	709	7,773	7,117	182,790 09	425,586	395,586	100 to 93
1827	721	8,114	7,550	185,720 46	431,601	411,256	105 to 100
1828	742	8,298	7,806	222,995 77	441,856	419,216	96 to 91
1829	757	8,609	8,164	232,343 21	468,205	449,113	25 to 24

PENNSYLVANIA.

Salaries of Officers.

Governor, George Wolf $4000

Chief Justice 2666 66
And $4 a day when on circuits.

Assistant Judges of the Supreme Court . . 2000 00
Also $4 a day for travelling expenses when on the circuits.

Judge of the District Court (Philadelphia) . 2000 00

President Judge of Common Pleas (Philadelphia) 2000 00

President Judge of Courts of Common Pleas throughout the state 1600 00

Assistant Judges 400 00

State Treasurer 2000 00

Secretary of the Commonwealth . . 1600 00

Surveyor-General 1400 00

Auditor-General 1400 00

Secretary of the Land-Office . . . 1400 00

There are 24 Senators, and 100 Representatives, whose pay is $3 a day, and 15 cents mileage.

Speaker of each House $4 a day.

RECEIPTS AND EXPENDITURES FOR THE YEAR ENDING NOVEMBER 30, 1828.

Receipts.		*Expenditures.*	
Lands & land-office fees	$95,609 44	Internal improvements	$2,611,967 24
Auction commissions	18,050 00	Expenses of government	204,757 96
Auction duties	144,839 59	Militia expenses	24,542 80
Dividends on bank stock	118,672 50	Pensions and gratuities	26,295 22
Dividends on bridge and turnpike stock	17,965 00	Education	26,259 28
Tax on bank dividends	29,649 51	Interest on loans	91,725 00
Tax on offices	8,541 35	Internal improvement fund	98,579 97
Fees, secretary of state's office	1,400 54	Pennsylvania claimants	304,38
Tavern licenses	46,311 85	State maps	2,363 38
Duties on dealers in foreign merchandise	52,108 03	Penitentiary at Philadelphia	4,000 00
State maps	2,597 86	Penitentiary near Pittsburg	4,364 65
Collateral inheritances	5,993 41	Conveying convicts	672 19
Pamphlet laws	100 68	Conveying fugitives	933 88
Militia and exempt fines	890 70	House of Refuge	2,500 00
Tin Pedlars' licenses	450 00	Miscellaneous	8,286 55
Escheats	208 88		3,107,552 50
Commissioners of the internal improvement fund	150,000 00	Balance in the treasury, 1st December, 1828	189,815 46
Loans and premiums on loans	2,432,100 00		$3,297,367 96
Old debts and miscellaneous	3,980 75		
	3,129,470 09		
Balance in the treasury, 1st December 1827	167,897 87		
	$3,297,367 96		

State Funds and Debts.

Funds.		*Debts.*	
Bank stock	$2,108,700 00	Turnpikes	$126,413 06
Turnpike stock	1,888,048 31	Bridges	22,000,00
Bridge stock	394,000,00	Rivers	17,878 00
Canal stock	200,000 00	Miscellaneous	43,900 98
		Due on loans	5,140,000 00
Funds	$4,590,748 31	Debts	$5,350,192 04

Banks.

From a statement reported to the Legislature, January 5, 1829.

BANKS.	Capital.	Notes in circulation.	Specie.	Dividend per year.
	$	$	$	
North America	1,000,000 00	244,526 61	101,708 79	4½
Philadelphia	1,800,000 00	301,176 00	143,346 00	4½
Farmers' & Mechanics' .	1,250,000 00	341,560 00	173,480 00	6
Commercial	1,000,000 00	193,484 00	64,517 97	6
Mechanics'	529,330 00	284,783 00	110,995 41	9
Schuylkill	500,000 00	322,794 00	109,584 38	6½
Northern Liberties . .	200,000 00	327,197 00	84,218 64	10
Southwark	249,630 00	238,755 00	96,223 19	9½
Kensington	92,740 00	137,315 00	36,743 51	9½
Penn. Township . . .	99,910 00	12,985 00	47,723 22	4
	6,721,610 00	2,504,575 61	968,541 11	
Germantown	129,500 00	61,067 00	22,808 53	6
Harrisburg	158,525 00	594,315 94	112,191 50	8
Pittsburg	346,155 50	390,790 00	29,391 44	6
Farmers' of Lancaster .	400,000 00	181,138 00	56,487 49	4
Lancaster B.	134,235 00	140,545 00	20,250 55	2⅛
Columbia Bridge Company	395,000 00	139,971 36	45,174 57	5
Farmers' B. of Reading .	300,350 00	184,715 00	25,028 37	5
Chester County . . .	90,000 00	221,621 00	61,195 64	10
Delaware County . . .	77,510 00	76,632 00	34,654 34	8
Montgomery County . .	133,250 00	149,170 50	31,066 18	5
Easton	181,140 00	289,311 33	37,930 91	5
York	168,720 00	109,570 00	128,622 11	7
Northampton	112,500 00	310,897 00	28,128 09	7
Carlisle	168,230 00	139,810 00	32,353 99	7
Chambersburg	246,651 67	213,515 00	17,184 00	6
Gettysburg	125,298 00	76,275 00	29,455 49	5
Monong. B. of Brownsville	102,123 00	144,935 00	20,214 23	6½
Westmoreland	112,783 00	181,955 00	25,423 21	—
Farmers' of Bucks County	60,090 00	75,756 00	9,304 35	3
19 country banks—Totals	3,442,061 17	3,681,990 13	766,864 99	
10 city do. do.	6,721,610 00	2,504,575 61	968,541 11	
Grand Totals . . .	10,163,671 17	6,186,565 74	1,735,406 10	

Canals and Roads.

WORKS EXECUTED, and SUMS EXPENDED on CANALS, RAIL-WAYS, ROADS, and BRIDGES, according to an account drawn up by GEORGE W.

SMITH, and published in Hazard's "Register of Pennsylvania," Volume I. page 407.

Schuylkill and Susquehanna } Do. and Delaware }	$440,000 00	State canals and Railways	2,160,000 00
Conewago, East & West	220,000 00	Appropriations for clearing rivers, erecting piers, harbours, &c. including private expenditures on minor works	440,000 00
Chesapeake and Delaware, old canal	100,000 00		
Chesapeake and Delaware, new canal	2,028,600 00		
Schuylkill Navigation Company	2,490,176 29		$11,019,495 18
Lehigh Coal and Navigation Company, on their works, *exclusive* of the the purchase of land, stocks, &c. (to July 1, 1828) . .	1,100,718 79	102 Turnpike Roads, extending 2,380 miles	8,431,859 50
Union Canal . . .	1,600,000 00	49 Bridges, constructed by companies . .	2,560,000 00
Delaware and Hudson Canal and Rail road (the part in Pa.) . .	440,000 00	Total expended on Roads, Bridges, and on Inland Navigation from 1791 to 1828	$22,010,554 68

WORKS in PROGRESS, and ESTIMATED COST.

Canals.	Length in miles.	Lockage in feet.	Estimated cost.
From Tioga, or New York line, to Northumberland	162	377	$1,820,000
" Bald Eagle Creek to Northumberland	70	102	670,000
" Northumberland to the mouth of the Juniata river	40	88	441,000
" Juniata to the mouth of the Swatara	24	51	461,000
" Swatara to Columbia	18	36	212,000
" Juniata (mouth) to Frankstown (this line is partly to be re-located; this estimate is, therefore, only an approximation	133	594	2,000,000
" Johnstown to the mouth of the Kiskeminetas river	76	363	1,108,000
" Kiskeminetas to Pittsburg . . .	30	81	686,000
" French Creek, feeder of 21 miles	166	837	2,664,000
" Pittsburgh to Erie by the Ohio, Beaver, &c. to Connaut Lake	167	852	1,730,000
" Easton to Bristol	60	170	686,596
Rail Roads.		Ascent and descent.	
From Philadelphia to Columbia on the Susquehanna, exclusive of fences, damages, &c.	84½	—	1,013,019,000
" Columbia to York; not yet located	(15?)	—	—
" Franckstown to Johnstown, do. (including machinery)—this estimate of the cost is merely a supposition	41	2937	1,200,000

It thus appears that more than *twenty two millions* of dollars have been expended since the year 1791, by the State of Pennsylvania, and by corporations, on canals, rivers, turnpike roads, rail-ways, and bridges, exclusive of the sums expended by counties on roads and bridges.

The works now in progress, estimated to cost *twelve millions* more, it is supposed will be finished by the end of the year 1831; thus making an expenditure of *thirty four millions* for internal improvements in forty years.

The number of companies incorporated by the legislature for effecting those purposes has been 265. Some of these have not gone into operation.

Schuylkill Navigation.

STATEMENT of ARTICLES, which ascended and descended the SCHUYLKILL NAVIGATION in the year 1828.

Ascending.

	Tons.	Cwt.	Qrs.
Merchandise	6007	3	0
Salt Fish	2054	1	2
Salt	473	4	0
Plaster	6308	10	0
Bricks	36	19	0
Iron	352	7	2
Iron ore	2267	10	0
Limestone	2701	00	0
Virginia Coal	363	8	0
Burr Stones	5	00	0
Marble	40	16	2
Cement	24	2	2
Grain, 2000 bushels	50	4	2
Blooms	270	10	0
Lumber	82	11	0
Sundries	292	1	2
Total,	21,329	9	0

Descending.

	Tons.	Cwt.	Qrs.
Coal	47284	15	0
Flour, 66,835 barrels	6365	6	0
Grain, 105,782 bushels	2644	11	1
Whiskey	1152	11	1
Iron	1853	14	3
Oil	29	15	0
Butter	126	4	1
Flaxseed, 6430 bushels	160	14	2
Leather	84	2	3
Paper	32	19	0
Lumber	6795	4	0
Potash	3	17	1
Hats	10	8	0
Live hogs	37	00	0
Limestone	5358	00	0
Iron ore	1674	00	0
Nails	904	15	0
Sawed Marble	552	00	0
Cord wood	1445	00	0
Stone	6791	00	0
Blooms	273	3	2
Lime	83	00	0
Lead ore	54	00	0
Ice	32	00	0
Tallow	8	00	0
Sundries	377	12	0
Total,	84,133	13	2

Coal Trade.

TABLE showing the Number of Tons of Lehigh and Schuylkill Coal imported and exported at Philadelphia, for Nine successive Years, its Value, and the Number of Vessels employed.

	IMPORTS.				EXPORTS.				
Years.	Lehigh.	Schuylkill.	Total tons.	Value at $6.	Lehigh.	Schuylkill.	Total.	Value at $6.	Vessels employed.
1820	365	——	365	2,190	——	——	——	——	——
1821	1,073	——	1,073	6,438	——	——	——	——	——
1822	2,440	——	2,440	14,640	73	——	73	438	——
1823	5,823	——	5,823	34,938	723	——	723	4,338	——
1824	9,541	——	9,541	57,246	3,255	——	3,255	19,530	——
1825	28,393	5,000	33,393	200,358	13,520	5,000	18,520	111,120	150
1826	31,280	16,767	48,047	288,282	12,769	11,596	24,365	146,190	200
1827	30,305	31,360	61,665	369,990	13,000	21,004	34,004	204,024	320
1828	30,111	47,284	77,395	464,370	23,156	23,039	46,195	277,170	503

It appears by the last report of the Schuylkill Navigation Company, that the amount of Tolls received from Coal in 1828, was 46,242 dollars, while those from all other articles than Coal, amounted to only 40,969 dollars.

The consumption of coal in the city of Philadelphia for the same year is stated at 34,721 tons, and of other towns on the Delaware, 5,844 tons. The total amount of the Anthracite coal business for the year, in Philadelphia and on the river, is estimated at $520,560.

Prices of Flour.

STATEMENT of the Average Price of Flour in Philadelphia for each Year, from 1785 to 1828.

1785	$5 87	1800	9 86	1815	8 71
1786	5 66	1801	10 40	1816	9 78
1787	5 25	1802	6 90	1817	11 69
1788	4 81	1803	6 73	1818	9 96
1789	5 20	1804	8 23	1819	7 11
1790	5 56	1805	9 70	1820	4 72
1791	5 22	1806	7 30	1821	4 78
1792	5 25	1807	7 17	1822	6 58
1793	5 90	1808	5 69	1823	6 82
1794	6 90	1809	6 91	1824	5 62
1795	10 60	1810	9 37	1825	5 10
1796	12 50	1811	9 95	1826	4 65
1797	8 91	1812	9 83	1827	5 23
1798	8 20	1813	8 92	1828	5 60
1799	9 66	1814	8 60		

Aggregate average of forty-four years, $7,42.

Schools.

TABLE showing the number of children educated at the public charge, in thirty-one counties, from which returns have been made, and the annual expense.

Year.	Number.	Expense.	Number educated on the Lancasterian plan.
1825	4,940	$15,931 79¾	
1826	7,943	30,192 47	3,950
1827	9,014	25,637 36½	4,342
1828	4,477	15,067 99½	4,267
	26,374	86,829 62¾	12,559

List of Governors.

NAMES of the Governors, Deputies, and Presidents of Pennsylvania, and the Dates of their Appointment to Office, from the First Settlement to the Present Time.

William Penn, Governor,	October,	1682
Thomas Lloyd, President,	August,	1684
John Blackwell, Deputy Governor,	December,	1688
John Blackwell, President,	February,	1690
Benjamin Fletcher, Governor,	April 26,	1693
William Markham, Deputy Governor,	June 3,	1693
William Penn, Governor,	December 3,	1699
Andrew Hamilton, Deputy Governor,	November 1,	1701
Edward Shippen, President,	February,	1703
John Evans, Deputy Governor,	February,	1704
Charles Gookin, Deputy Governor,	February,	1709
Sir William Keith, Deputy Governor,	March,	1717
Patrick Gordon, Deputy Governor,	June,	1726
James Logan, President,	June,	1736
George Thomas, Deputy Governor,	June,	1738
Anthony Palmer, President,	June,	1747
James Hamilton, Deputy Governor,	June,	1748
Robert H. Morris, Deputy Governo ,	October,	1754
William Denny, Deputy Governor	August 19,	1756
James Hamilton,	November 17,	1759
John Penn,	October 31,	1763
James Hamilton, President,	May 6,	1771
Richard Penn,	October 16,	1771
John Penn,	August,	1773
Thomas Wharton, President of Council,	March,	1777
Joseph Reed, " "	October,	1778
William Moore " "	November,	1781
John Dickinson " "	November,	1782
Benjamin Franklin " "	October,	1785
Thomas Mifflin " "	October	1788
Thomas M'Kean, Governor,	October	1799
Simon Snyder, "	October	1808
William Findlay, "	October,	1817
Joseph Hiester, "	October,	1820

J. Andrew Shultze,	"	October,	1823
George Wolf,	" . . .	October,	1829

A large portion of the preceding facts, respecting Pennsylvania, have been collected from Hazard's Register, one of the most valuable statistical works in the country.

DELAWARE.

Chesapeake and Delaware Canal.

This Canal commences at Delaware City, a point on the river of that name, 46 miles below Philadelphia; it crosses the peninsula, in the states of Delaware and Maryland, in a direction nearly west, and enters Back Creek, a navigable stream which runs into Elk River, a large branch or arm of Chesapeake Bay.

It is calculated for the navigation of sea vessels of a draught not exceeding ten feet.

Its length is 13½ miles.

Its breadth at top is 60 feet, at bottom 40 feet.

Its highest level is 8 feet above tide.

Its locks are 100 feet long, and 22 feet wide.

From the river Delaware, it passes for 4 miles to St. George's on the level of high tide, through a light marsh. The embankments through this were formed at great expense, by permitting upland earth to sink until it reached a firm foundation. It is supposed this sinking frequently exceeded fifty feet in depth.

From St. George's to the Deep Cut, 3 miles, the Canal is excavated along the bed of a creek, which is considerably deepened, a towpath being made on one side, and the natural shores forming the other.

The Deep Cut is four miles in length. At the highest point the depth is not less than ninety feet, and it is crossed by a bridge of imore than 200 feet span. Its sides are secured by thick stone walls fourteen feet high.

From the Deep Cut to Back Creek, 2½ miles, the Canal is made chiefly by excavating the bed of a small stream.

At each extremity a town has been laid out, and houses are already erected.

The cost of the work will somewhat exceed two millions. The government of the United States have subscribed $450,000 towards it; the state of Pennsylvania $100,000, Maryland $50,000, Delaware $25,000.

MARYLAND.

Officers and their Salaries.

		Salary.
EXECUTIVE.	Daniel Martin, Governor	$2,666 67
JUDICIARY.		
	Chancellor, Theodoric Bland	3,600 00
	Court of Appeals.—John Buchanan, Chief Judge	2,200 00
	Richard T. Earle, Associate	2,200 00
	William B. Martin, "	2,200 00
	Stevenson Archer, " (Baltimore)	3,000 00
	Thomas B. Dorsey, "	2,200 00
	John Steven, "	2,200 00

County Courts.—The State is divided into six judicial districts, for each of which there are three judges. Each court is constituted of one of the Judges of the Court of Appeals, and two Associates. The salary of these county Associate Judges is $1400 each, except in Baltimore district, where the Associates are paid $2200 each.

		Salary.
	Baltimore City Court.—Nicholas Brice, Chief Judge	$2,400
	William M'Mechen, Associate	1,500
	Alexander Nesbit, "	1,500

LEGISLATURE. The Members receive $4 a day. The Speakers of each House $5.

Receipts and Expenditures.

For the Year ending the 1st of September, 1828.

RECEIPTS.		EXPENDITURES.	
Amerciaments	$397 36	The Baltimore and Ohio Rail Road Company	25,000 00
Auction Duties	2,390 17	The Board of Public Works	279 68
Auctioneers' Licenses	3,450 00	Chancery Records	2,398 10
Bank Stock	30,050 84	Civil Officers	11,448 48
Billiard Table Licenses	830 17	Colleges, Academies, and Schools	12,999 98
Direct Taxes	2,789 46	The Colonization Society	1,000 00
The Eastern Shore Treasury	17,234 07	Commission	315 03
Fines and Forfeitures	1,629 09	The Executive Contingent	3,375 28
Funded 3 per cent. Stock	10,053 08	Indian Annuities	107 50
Hawkers' and Pedlars' Licenses	427 08	Internal Improvement Sinking Fund	615 00
Interest (on personal accounts)	1,110 50	The Judiciary	35,705 66
Land-Office Account	3,814 92	The Legislature	43,303 35
Licenses to Dealers in Lottery Tickets	1,102 53	The Library	200 00
Licenses to retail Dry Goods	4,512 15	Loans of 1827-28, for Interest	4,497 17
Licenses to retail Spirituous Liquors	4,583 28	The Militia	2,647 92
Licenses to Retail Spirituous Liquors at Horse Races	62 70	Miscellaneous Account	6,256 96
		The Penitentiary	12,259 00
		Penitentiary 5 per cent. Stock of 1822	1,397 20

Licenses to vend by wholesale	47 50
Marriage Licenses	4,364 18
Ordinary Licenses	15,797 39
The Penitentiary	2,522 36
Road Stock	615 00
State Lotteries	3,500 00
State Tobacco Inspection in Baltimore	27,275 22
The State's Wharves in Baltimore	487 84
Tax on Plaintiffs	1,318 61
Taxes in Chancery	934 78
Traders' Licenses	12,375 80
The Union Manufacturing Company of Maryland	400 00
The Univ. of Maryland	1,553 56
Victuallers' Licenses	241 95
	$155,872 36
Of this sum there had accrued prior to the year 1828	23,444 95
Accrued during the year 1828	132,421 36
To which add Receipts on the following Accounts, viz.	
Costs of Suits	63 67
Loan of 1828	30,000 00
The Public Buildings	100 62
Rail Road 5 per ct. Stock	25,000 00
The Union Bank of Maryland	10,000 00
	$221,036 65
Balance in the Western Shore Treasury, 1st December, 1827	76,291 39
	$297,328 04
Of the above there was received into the Eastern Shore Treasury during the said period:	
Of revenue accrued previous to the year 1828	10,104 16
Of revenue accrued during the year 1828	7,265 06
	$17,369 22

Pensions to Officers and Soldiers	15,370 89
The Public Buildings at the Seat of Government	2,621 94
State Tobacco Inspection in Baltimore	7,225 00
The State's Tobacco warehouses in Baltimore	61,692 81
University 5 per ct. Stock of 1822	1,500 00
The University Sinking Fund	500 00
The Washington Monument	14,249 36
	$267,002 31
Balance in the Western Shore Treasury, 1st December, 1828	30,325 73
	$297,328 04

On the Eastern Shore, and on the following accounts, *viz.*	
Civil Officers	1,040 49
Commission	256 28
The Judiciary	442 00
Miscellaneous Account	94 01
Pensions	40 00
	$1,872 78
Payment into the Western Shore Treasury, 7th June, 1828, (being part of its receipts,)	6,885 88
Balance in the Eastern Shore Treasury, 1st of December, 1828	8,610 56
	$17,369 22

The amount of the Productive Capital of the State is	$935,601 50
Unproductive Capital	264,373 09
Total	$1,199,974 59

Banks.

	Capital.		Capital.
Bank of Maryland .	$300,000	Hagarstown Bank . .	$250,000
Bank of Baltimore .	1,200,000	Frederick County Bank	500,000
Union Bank of Maryland	3,000,000	Farmers' and Mechanics' Bank of Frederick County, has a branch at Westminster . . .	500,000
Mechanics' Bank .	1,000,000		
Franklin Bank . .	600,000		
Com'cial & Farmers' Bank	1,000,000		
Farmers' & Merch'ts' Bank	500,000		
Marine Bank . . .	600,000	Farmers' Bank of Maryland at Annapolis, has a branch at Frederick and Easton	1,000,000

All the above Banks are in Baltimore.

Schools.

Provision has been made for the establishment of Primary Schools throughout the State, to be supported by a public tax. The first school under this provision was opened in Baltimore on the 21st of September, 1829, for children under 12 years of age. It is expected others will soon be established. Four dollars a year are to be paid for each pupil not an orphan.

There are 8 or 10 Academies in the state, which receive annually from $400 to $600 from the State Treasury.

The State has made, and continues to make, liberal grants to the University of Maryland. For the year 1829, the grant was $5000; and for Colleges, Academies, and Schools, $13,000.

NORTH CAROLINA.

Officers and their Salaries.

Executive.		Salary.
John Owen, Governor		$2000

Elected annually, eligible for three years in succession.

Judiciary.		
Supreme Court.—John Hall, . .	Judge,	2500
Leonard Henderson,	"	2500
John D. T———,	"	2500

Superior Court.—The state is divided into six circuits, in which the Court is held half yearly in the 64 counties; so that one judge attends ten or eleven counties, which occupies him so many weeks. The judges are paid $90 for every Court

they attend. Their names are William Norwood, J. J. Daniel, John R. Donnell, James Martin, Robert Strange, and W. P. Margum.

LEGISLATURE. The pay of the members of both Houses is $3 a day. The Speaker has $4.

Receipts and Expenditures.

From the 18th of December, 1827, to the 1st of November, 1828.

RECEIPTS.

Cash handed over by the Committee of Finance	$85,531 05
Arrears of Taxes	2,053 83
Additional Returns of Taxes	396 44
From the late Public Treasurer	1,646 77
Balances due for sales of Public Land	1,989 38
Tax on Banks, and Dividends	20,726 00
On account of Rent of Public Land	7 00
On account of Interest	38
Amount of the Revenue of 1827	61,883 16
Total of Receipts	$174,234 01
Deduct disbursements	80,890 41¼
Balance in the Treasury, 1st of November, 1828	$93,343 59¾

EXPENDITURES.

General Assembly	$36,658 23
Executive Department	1,561 98
Department of State	958 00
Treasury Department	1,375 87½
Controller's Department	942 06
Executive Council	128 00
Adjutant-General's Office	219 84
Public Printers	900 00
Judiciary	20,799 47
Arsenal	2,200 00
Sheriffs for settling Taxes	866 90
Congressional Election of 1827	19 32
Repairs of State House	86 40
Governor's House	676 00
Public Library	53 00
Buncombe Turnpike Company	1,250 00
State Bank of North Carolina	3,356 24
Pensioners	977 00
Miss Udney M. Blakely	600 00
Surveying and selling Cherokee Lands	3,057 91
Expenses for Surveying Land, &c.	263 55½
Bogue Banks	726 95¼
Roanoke Navigation Company, last instalment	1,000 00
Romulus M. Saunders, Commissioner	250 00
Contingencies	1,963 68
Total of Expenditures	$80,890 41¼

Taxes received for the Year 1827.

Showing the particular Items taxed, and the Amount on each. These Taxes are collected by the Sheriffs, and paid over by them to the Controller.

Land Tax	$24,867 49	Pedlar Tax	$ 935 30
Town Property Tax	1,402 86	Artificial Curiosity Tax	507 60
Poll Tax	26,932 21	Natural Curiosity Tax	239 70
Stud Horse Tax	1,484 82	Billiard Table Tax	470 00
Gate Tax	202 40	Fines	1,200 00
Store Tax	6,271 68		
Tavern Tax	2,827 52	Total	$67,341 58

State Funds.

In addition to the above receipts and disbursements, there have been received during the same period the fund of Internal Improvement, and the Literary and Agricultural funds, and disbursements have been made according to law. The aggregate of these funds is as follows.

Internal Improvement Fund	$71,912 19
Literary Fund	77,560 00
Agricultural Fund	251 62
The whole amount of the Funds of the State, in Cash, Bank Stock, and Bonds, is	1,047,485 33
Deduct State Debt	325,326 72
Total of State Funds	$722,158 61

Literary and Agricultural Funds.

The Literary Fund was formed by an act of the Legislature for the establishment of Common Schools, and for that purpose alone. The Constitution of this State provides, "that a School or Schools shall be established by the Legislature;" but though this instrument was formed in the year 1776, nothing was done to carry this injunction into effect until the act passed in 1825. The fund, which arises from Bank dividends, &c. amounts already to above 70,000 dollars, but no step has yet been taken for carrying the act into effect, by establishing schools. It is provided, that whenever the fund has sufficiently accumulated, the proceeds thereof shall be divided among the several counties, in proportion to the free population of each, to be managed as the Legislature may direct. No plan has yet been suggested for commencing this work.

An act to promote Agriculture and Family Domestic Manufactures within this State, passed in 1822. The Legislature appropriated $5000 a year for two years for the promotion of the objects in question; the money to be distributed among the several counties in proportion to their federal numbers. Wherever an Agricultural Society was formed in any one county, or in any two adjoining counties, and the members thereof annually raised by subscription any sum of money, the president and treasurer, on making affidavit of the fact, was to receive from the treasurer of the State a sum equal in amount to the sum subscribed, receiving in no case, however, a larger amount than such counties are entitled to from their federal number of inhabitants.

The several presidents of the Agricultural Societies (or delegates appointed for the purpose) were to form a Board of Agriculture for the State, to convene at the Capitol in Raleigh, on the first Monday after the annual meeting of the Legislature, when they were to choose their officers &c., and publish annually, at the expense of the State, 1500 copies of a volume containing Essays on Agricultural Subjects, the Report of the Geologist of the State, &c., to be distributed by the Agricultural Societies to the people of the State.

The Treasurer of the State is directed to pay annually, on the warrant of the governor, to said Board of Agriculture $1000 for the purpose of purchasing valuable Seeds, Models of Agricultural Implements, &c. for the use of the several Societies.

In 1823, so much of the above act as establishes a Board of Agriculture was confirmed, but the expenses of the Board are restricted to the publication of their Agricultural volume, including the expense of taking and publishing a Geological and Mineralogical Survey of the various regions of the State.

Part of the proceeds of this fund is appropriated in aid of the Literary Fund.

Banks.

There are three Banks in the State; viz. the State Bank of North Carolina (consisting of a principal Bank and six Branches), the Bank of Newbern, and the Bank of Cape Fear. The Bank of Newbern has offices of Discount and Deposit in Raleigh, Halifax, and Milton; the Bank of Cape Fear has offices of Discount at Fayetteville, Salem, Charlotte, and Hillsborough. The capital of the State Bank is $1,600,000. The capitals of the other two Banks are $800,000 each.

GEORGIA.

Officers and their Salaries.

EXECUTIVE. The Governor continues in office two years; salary $3000.

JUDICIARY.

Superior Court.—There are eight judges of the Superior Court, and each presides in a Circuit, making eight Circuits in the whole.

1. Northern	Circuit,	William H. Crawford,	Salary	$2100
2. Southern	"	Thaddeus G. Holt,	"	2100
3. Eastern	"	William Law,	"	2100
4. Western	"	Augustin S. Clayton,	"	2100
5. Oakmulgee	"	Thomas W. Cobb,	"	2100
6. Flint	"	Christopher B. Strong,	"	2100
7. Middle	"	William W. Holt,	"	2100
8. Chatahooche	"	Walter T. Colquitt,	"	2100

Inferior Court.—There is one in each county, each composed of five Justices elected by the people. They have no salaries, and possess the powers of Courts of Probate.

LEGISLATURE. Senators and Representatives are paid each $4 a day. The President of the Senate and Speaker of the House, $6.

Receipts and Expenditures,

For the Year ending on the 31st of October, 1828.

RECEIPTS.

General Tax of 1820	$ 31	12
" 1823	13	74
" 1825	2,007	07
" 1826	41,484	10
" 1827	3,513	00
Cash returned into the Treasury	12,241	58
Sale of Lots in and adjoining the Town of Columbus	26,198	20
Sale of McIntosh Reserves in Butts County	2,619	75
Sale of Lots in Macon	751	23
Fees received by State House Officers	28	37
Rent of Lots fraudulently drawn	65	00
Rent of Fractions, Reserves &c. under the Act of 1826	692	59¼
Rent of Indian Reserves	226	00
Fees on Copy Grants	89	11
Fees on Grants for Land drawn for 1820	3,440	00
" " " " 1821	2,876	00
" " " " 1827	22,194	00

Sale of Fractions under the Act of 1822	12,564 94½
" " " " 1823	1,125 48
Sale of Lots fraudulently drawn	2,466 18¾
Fees on Grants for Land fraudulently drawn	12 00
" " Lots in Macon	29 75
" " Fractions Sold under the Act of 1822	216 00
" " " " " 1823	64 25
Sale of Lots, Nos. 10 & 100	1,146 72
Rent of Public Property at Fort Hawkins	3,433 04
Fees on Grants for reverted Lots in Baldwin, Wilkinson, and Wayne	550 00
Fees on Grants and Testimonials	536 25
Tax on Pedlars	1,170 00
Dividend on Bank Stock	35,100 00
Vendue Tax	2,213 02½
Premium on United States Treasury Checks	80 07
Bonds for Uiversity Lands	1,972 80
Fund from Fees on Grants for Lots Nos. 10 & 100	4 00
	$181,155 38
Balance remaining in the Treasury Nov. 26, 1827	637,303 14
	$818,458 52

EXPENDITURES.

Appropriation for the Legislature	$52,743 40
Printing Fund of 1828	4,537 02
Appropriation for enlarging the State House	8,331 82
Civil Establishment of 1828	22,457 66
Appropriation for the Penitentiary, 1828	5,000 00
Contingent Fund of 1828	5,833 05
Special Appropriation, 1828	19,743 61
Land Fund of 1825	10,731 89
" 1826	4,022 15
Military Fund of 1827	4,888 21
Poor School Fund	7,724 63
Land Fund	12 38
Appropriation for County Academies	4,095 30
" Printing, 1827	513 21
Civil Establishment of 1827	581 25
Contingent Fund of 1827	1,689 83
Special Appropriation, 1827	31,250 00
" " 1824	1,273 75
" " 1822	1,500 00
	$186,929 16
Balance remaining in the Treasury Oct. 31, 1828	631,529 36
	$818,458 52

Banks.

From Returns made in October, 1828.

Bank of Augusta.

Capital Stock	$600,000 00
Bank Notes and Change Bills in circulation	379,923 00
Amount of Deposits by Individuals	108,805 71
Amount at the credit of the United States	30,395 76
Of former Dividends there remains unpaid	7,940 00
Amount at the credit of other Banks on open account	8,394 95
Reserved Fund	97,007 13
	$1,232,466 55

Bank of Macon.

Proportion of Capital Stock paid in	$50,000 00
Bills in circulation	87,972 00
Amount due other Banks	104 43
Amount of Deposits	2,724 05
Amount of Dividends	6,000 00
Undivided profits	2,249 08
	$149,049 56

Marine and Fire Insurance Bank, *Savannah.*

Notes in circulation	$125,845 00
Deposits	43,217 98
	$169,062 98

Bank of the State of Georgia.

Capital Stock	$1,500,000 00
Notes in circulation	1,119,853 00
Individual deposits	208,388 36
Balances between Principal Bank and Branches, and sundry State Banks	214,506 92
Sixth Circuit Court, United States	66,686 36
Dividends unclaimed	5,922 25
Surplus Fund	57,620 11
Discounts or net profits for the last six months	70,801 36
	$3,243,778 36

Planters' Bank, *Savannah.*

Notes of this Bank in circulation, of the old emission	$ 27,515	
New Emission	231,695	
		$259,210 00
Capital paid in	821,550	
Stock owned by the Bank	172,500	
		649,050 00
Due to other Banks		1,673 03
Due to individual depositors		158,068 07
Dividends unclaimed		14,433 74
Profits and reserved Fund		163,273 59
		$1,245,708 43

BANK OF DARIEN.

Amount of Bills in circulation		$396,524 44
Capital Stock paid in	$651,175	
Deduct Stock redeemed by the Bank	166,725	
		484,450 00
Deposited on individual account		14,074 64
Dividends not yet claimed		2,083 95
Reserved Fund		19,372 53
		$916,505 56

OHIO.

Officers and their Salaries.

		Salary.
EXECUTIVE.	Allan Trimble, governor	$1200
JUDICIARY.		
Supreme Court.—	Calvin Pease, Chief Justice	1200
	Peter Hitchcock, Associate	1200
	Joshua Collett "	1200
	Gustavus Swan "	1200

Circuit Court.—Presiding Judges in each Circuit.

	Salary.		Salary.
1. George B. Holt	$1000	6. George Smith	$1000
2. Frederick Grimké	1000	7. Ebenezer Lane	1000
3. George Todd	1000	8. Thomas Irwin	1000
4. Alexander Harper	1000	9. George P. Torrence	1000
5. Jeremiah H. Halsek	1000		

There are three Associate Judges in each county, who re-receive $2 a day, while the Court is in session. The Judges of both Courts are elected every seven years. The number of Associate Judges is about 200.

LEGISLATURE.

36 Senators
72 Representatives } receive each $3 a day.

Land and Taxes.

The following table, constructed for the year 1828, shows the number of acres of land in each county, the state tax, county tax, road tax, township tax, and school tax, and the total amount assessed for the year.

Counties.	Acres of Land.	State Tax.	County Tax.	Road Tax.	Township Tax.	School Tax.	Total.
Adams	225,674	$2,354 79	$1,917 09	$1,137 99	$ 491 28		$5,291 15
Ashtabula	445,885	3,426 85	2,878 59	3,410 10	716 83		10,432 38
Athens	264,446	1,118 35	2,600 20	1,200 09	225 52		5,144 18
Butler	253,777	5,958 09	3,989 92		830 81		10,778 83
Belmont	281,191	3,908 32	4,543 50		1,165 15		9,616 98
Brown	251,322	3,828 75	4,441 60	1,190 79	604 20		10,064 01
Clermont	272,500	4,237 52	3,646 13		885 47		8,739 13
Champaign	224,346	2,213 08	1,924 66		205 17		4,140 92
Cuyahoga	305,638	3,889 34	3,887 36	3,884 83	977 11	$627 08	13,265 72
Clinton	241,546	1,997 69	1,331 79	998 84	372 04		4,911 96
Coshocton	228,769	2,237 03	1,863 79		142 45	372 77	4,373 32
Columbiana	360,776	4,232 40	4,937 81	1,410 80	1,116 42		13,001 04
Clark	231,237	2,748 91	3,224 74		359 34		6,333 01
Crawford	42,609	344 17	975 15		43 87		1,363 19
Dark	106,415	559 11	1,118 23				1,708 40
Delaware	328,284	2,499 66	3,076 35	2,499 66	62 47		8,138 15
Franklin	310,150	4,033 76	3,118 70		639 73		8,027 11
Fayette	225,706	1,478 73	2,651 34		44 19		4,174 27
Fairfield	292,038	4,984 28	4,138 38		563 76		9,686 43
Green	253,238	3,532 51	3,745 56		335 00	588 88	8,201 94
Guernsey	242,132	2,223 51	2,778 22	1,447 50	346 54		9,795 78
Geauga	381,236	3,795 55	3,162 22	3,795 55	696 26		11,449 58
Gallia	170,517	1,282 15	1,845 94		89 02		3,515 77
Hamilton	231,489	17,284 77	17,285 77		6,350 63	2,881 04	43,802 27
Highland	315,705	2,809 08	3,317 56		279 78		6,406 37
Harrison	226,813	2,516 28	3,789 43	2,526 23	314 77		9,156 78
Huron	505,113	4,009 64	4,678 07	6,682 79	561 62		15,932 14
Hocking	82,560	515 75	1,203 36		27,05		1,746 18
Holmes	139,432	1,216 93	1,236 88	1,204 54	2 38		3,661 48
Jefferson	224,876	4,399 62	3,667 62		979 00		9,046 14
Jackson	45,070	429 45	1,073 64		1,548 69		1,525 89
Knox	291,544	3,252 20	3,252 20	1,083 39	172 58		7,760 38
Licking	334,212	5,294 64	4,411 52	1,765 08	374 99		11,846 25
Lorain	367,831	1,410 86	4,019 99	2,410 86	68 47		9,303 98
Lawrence	56,966	578 45	4,350 16			96 84	2,025 46
Logan	341,465	2,048 29	4,947 45	171 20	20 38		7,187 32
Montgom'ry	259,896	5,242 20	5,242 20		528 12		11,011 93
Miami	197,950	2,391 74	1,648 53		291 72	399 03	4,731 04
Madison	295,505	1,364 55	2,292 00				4,350 41
Muskingum	329,917	5,797 61	4,831 34	1,932 53	1,130 79		13,692 29
Monroe	77,606	675 01	1,800 03		295 16		2,770 21
Medina	297,597	2,405 21	2,807 07	2,404 39	260 57		7,877 26
Marion	108,143	746 73	2,116 50	746 78	11 92		3,622 00
Meigs	223,988	1,044 29	1,742 58	698 27	477 01	176 94	4,139 12
Morgan	144,612	1,031 81	1,737 30	514 02	69 33	173 15	3,524 53
Mercer	9,524	80 50	194 99			13 52	329 16
Preble	236,114	2,460 61	1,237 42		605 60	410 44	4,714 00
Pickaway	307,650	4,718 14	3,902 32		1,123 89		10,079 78
Perry	156,933	1,790 99	2,686 48		456 80		4,933 29
Portage	471,982	5,334 91	6,231 46	1,751 88	662 09		14,010 05
Pike	99,054	1,389 07	1,389 07		18 58		2,994 82
Ross	324,695	7,636 18	1,363 47		723 27		15,479 46
Richland	342,903	2,975 97	2,975 97	2,975 95	235 86	1,983 98	11,147 78
Seneca	49,599	383 30	638 84	383 30	4 25	63 88	1,473 58
Sandusky	47,582	488 00	1,382 84		19 75		1,890 59
Stark	387,010	4,790 43	4,003 61	1,529 2	407 84		10,731 71
Shelby	64,945	433 03	613 77			73 55	1,139 42
Scioto	101,167	2,116 66	2,470 25		101 44		4,688 36
Tuscarawas	230,998	2,674 18	2,755 20	1,714 48	831 31		7,975 19
Trumbull	554,635	4,655 99	3,881 53	1,552 61	634 46		10,774 59
Union	239,433	1,429 09	2,153 68	1,420 51	96 08		5,099 36
Warren	240,057	5,479 87	3,653 25	1,826 62	1,656 13	913 36	13,761 89
Washington	276,629	1,798 89	2,101 53	1,489 92	1,021 92		6,412 27
Wood	14,752	288 7	581 46	283 75	403 38	47 32	1,599 72
Wayne	331,727	3,507 1	4,090 48	3,370 98	179 37		11,147 97
Total	15,733,510	187,906 69	199,455 30	61,315 83	33,910 08	8,821 85	498,481 51

The footings of the columns in the table are not precisely accurate, because the fractions of cents are omitted in the items, though retained in the aggregates.

The 15,733,510 acres of land, as shown in the table, are valued at $41,344,520.

There are also *town lots* with their buildings valued at $8,771,693.

In the State are 151,042 horses, valued at $5,644,300;—also 308,947 cattle, valued at $3,003,558;—and 160 carriages, valued at $24,218.—Merchants' capital in the State, $3,492,765.

MISSOURI.

Officers and their Salaries.

EXECUTIVE. John Miller, governor; salary $1500. Term of office expires on the 3d Monday of November, 1832.

JUDICIARY.			Salary.
Supreme Court.—Mathias M'Girke,	Judge	.	$1100
George Thompkins	"	.	1100
Robert Wash	"	.	1100
Circuit Court.—David Todd,	Judge	.	1000
N. B. Tucker	"	.	1000
William C. Carr	"	.	1000
John D. Cook	"	.	1000

LEGISLATURE. Pay of the members of the General Assembly, $3 a day.

Receipts and Expenditures.

RECEIPTS for 1827 . . .	$49,558	
" for 1828 . . .	59,570	
	$109,128	
Average for two years		$54,564
EXPENDITURES for 1827 . .	$27,116	
" for 1828 . .	33,679	
	$60,795	
Average Expenditure for two years . .		$30,397
Average annual Balance		$24,167

CHRONICLE OF EVENTS IN 1829.

[The figures in the margin designate the day of the month.]

JANUARY.

1. The General Congress of Mexico assembled, and was opened by a speech from President Victoria.
2. Forty men and thirty horses killed by an explosion of fire-damp, at the mines of Logis de Peres, Marotret, France.
5. Large Factory in Lowell, Massachusetts, burnt; loss $125,000.
6. Vincente Guerrero chosen President, and Anastasio Bustamente Vice-President of Mexico, by the general Congress.
6. Session of the New Jersey Legislature commenced.
6. Grand Vizier arrives at Schumla and assumes the command of the Turkish army. Hostilities recommence against the Russians.
9. Discovery and failure of an extensive conspiracy at Lisbon, Portugal, to overthrow the government of Don Miguel.
9. Frederick von Schlegel, the celebrated German author, died in Germany.
13. The Buenos-Ayrean privateer Brig Patriot, Captain Almeida, risen upon by the crew, and carried into Porto Rico and delivered up to the Spanish authorities.
18. Dispersion of the guerillas and destruction of the Patian faction in the southern part of Colombia by General Cordova.
22. Four hundred and fifty Indians belonging to the army of the Provinces under the command of Molina, surprised and cut to pieces by General Lavalle, provisional Governor of Buenos Ayres.
26. Proclamation of Bolivar to the Insurgents under Obando and to the Inhabitants of Cauca, Popayan, and Patia, offering pardon to all who should surrender within twenty days.
26. Conspiracy discovered in Manilla, to declare the independence of the Islands. Several persons arrested and placed in close confinement.
27. Bill passed the House of Delagates of Virginia, to organize a Convention for the purpose of revising the Constitution of the state.
27. Opening of the Session of the French Chambers. The king in his speech stated that the three great powers of Europe had taken the Morea and the neighbouring islands of Greece

under their protection; that consuls had been appointed with the South American states; and that the finances were in a flourishing condition.

29. Colonel Timothy Pickering died at Salem, Massachusetts. He was a distinguished revolutionary officer, and held the post of Secretary of State during the administration of Washington.
30. Byram Cotton Factory in Connecticut burnt; loss $100,000.

FEBRUARY.

2. York Cathedral, in York, England, partly destroyed by fire.
5. Session of the English Parliament opened. The king in his speech stated, that diplomatic relations with Portugal were suspended, but that a negotiation for the settlement of existing difficulties was in progress, that the most perfect harmony subsisted between the three great powers of Europe, that the war between Russia and Turkey continued and was deeply regretted, that the finances were in a prosperous condition, and that the difficulties in Ireland and the civil disabilities of the Catholics were worthy of the deliberate consideration of Parliament.
7. General Harrison, Minister Plenipotentiary from the United States to Colombia, received and recognised at Bogotá, by the Minister of State, in the absence of the President Bolivar.
10. Death of Leo XII, Pope of Rome.
11. Electoral Votes for President and Vice-President opened by the Senate at Washington. Whole number 261. Andrew Jackson had 178 for President, and John C. Calhoun 171 for Vice-President, and both were declared to be elected.
15. Affray at Port Mahon between a party of sailors belonging to the United States' frigate Java and a party attached to the French brig Faune, in which a French Lieutenant was killed.
16. Meza, one of the chiefs opposed to Lavalle's government, shot in the public Plaza of Buenos Ayres.
17. Large fire at Savannah, Georgia. Forty buildings destroyed. Loss from 40 to $50,000.
19. The Russian General Kumianoff defeats a Turkish division of troops with considerable loss. The Turkish garrison of Giurgevo make a sortie with over 3000 men, but are driven back by the Russians.
20. Very heavy and violent snow storm attended with a strong northeast gale, throughout the Middle and Northern States. Nantucket Mail Packet Boat lost, and two men frozen to death.
20. Resolutions passed the Virginia House of Delegates, denying the power of Congress to pass the late tariff bill, and declaring it to be unconstitutional.
20. Fort Lithada taken from the Turks by the Greeks. It is sit-

uated at the entrance of the Maliaque Gulf, and capitulated after an assault.

21. Field Marshal Count Wittgenstein resigns the command of the Russian army for the invasion of Turkey, and General Diebitsch appointed to succeed him.
22. Brig Attentive, Captain Grover of Boston, taken by pirates off Matanzas, and six persons murdered, being the whole crew except the second mate, who escaped by secreting himself.
24. Bill for the Suppression of the Catholic Association and others of the same character, passed the English Parliament; the Catholic Association, however, had previously dissolved itself in anticipation of this measure.
24. The king of Spain issues a decree constituting the City of Cadiz a free port.
27. Battle between the Colombian and Peruvian armies at Tarqui, in the southern part of Colombiat; the former consisting of 5000 and the latter of 8000 men. The Peruvians were defeated with considerable loss. Convention signed for the cessation of hostilities on the field of battle, and mutual differences referred to the arbitration of the United States' government.

MARCH.

2. Bills passed the House of Representatives at Washington (having previously passed the Senate), authorizing a subscription of $——— to the Chesapeake and Delaware Canal Company, and of $600,000 to the Louisville and Portland Canal Company, in Kentucky.
3. Congress adjourned, *sine die.*
4. Andrew Jackson inaugurated as President of the United States at Washington. Senate convened, and John C. Calhoun sworn in as Vice-President of the United States.
5. Battle fought between the Turks and Russians, near the river Natonebi in Asiatic Turkey, in which the former lost 1000 men in killed and wounded, and the latter 200.
6. The United States' Senate confirm the President's nomination of Martin Van Buren as Secretary of State, and Samuel D. Ingham as Secretary of the Treasury.
6. Resolutions in favor of the Catholic Emancipation passed the English House of Commons, by a majority of 188.
6. M. Moreira and four other persons hanged at Lisbon, for an alleged canspiracy against the government of Don Miguel.
9. Cabinet completed at Washington by the appointment of John H. Eaton as Secretary of War, John Branch, Secretary of the Navy, and John M'Pherson Berrien, Attorney General.
10. The William and Ann, a British trading vessel, wrecked at the mouth of Columbia river on the northwest coast of America;

and the whole crew, consisting of 16 Europeans and 10 Sandwich islanders, murdered by the natives, in the expectation of obtaining their property.

16. Sally of the Russian garrison of Akhalzik. The Turkish besieging army driven off with a considerable loss in stores and men.
18. Decrees of amnesty for General St. Anna and his adherents, and for the general expulsion of the Spaniards from the country, passed both Houses of Congress of Mexico.
19. Treaty of Peace, Friendship, Commerce, and Navigation, between the United States and Brazil, ratified at Washington.
20. Sizeboli captured by the Russians, and fortified as a permanent position.
21. Duel in London between the Duke of Wellington and the Earl of Winchelsea.
21. Great earthquake in the provinces of Murcia and Orihuela in Spain. Upwards of four thousand houses and twenty churches destroyed, and great numbers of the inhabitants killed. A considerable portion of the former province converted into a barren desert.
22. Protocol agreed on between the plenipotentiaries of Great Britain, France, and Russia; fixing the government, boundaries, &c., of Greece.
23. Turkish fleet of four ships of the line, two frigates, and three corvettes with fire ships, &c., sailed from Constantinople towards the Black Sea.
26. Corner-stone of the cotton factory laid in Athens, Georgia.
28. General Rauch of the Lavalle or Buenos Ayres party, defeated by the Monteneros or party of the provinces.
29. Castle of Rumelia surrendered to the Greek army under Count Agostino Capo d' Istrias.
30. Catholic emancipation bill passes the English House of Commons.

APRIL.

1. General Guerrero inaugurated as President of the Mexican Republic at Mexico.
2. Extraordinary session of the Cortes of Brazil, convened by the Emperor, to take into consideration the state of the Treasury and of the Bank of Brazil, represented to be in a deplorable condition.
3. Great fire in Augusta, Georgia. *One hundred and eighty-three* houses destroyed.
3. Proclamation of Bolivar to the Colombians, complaining of the non-fulfilment by Peru of the convention concluded after the battle of Tarqui; and announcing his intention of re-occupying Guayaquil, and compelling the Peruvians to a peace.

9. Great inundation of the Vistula, near Dantzic. A great portion of that city and fifty villages overflowed. Nearly all of 8 or 10,000 head of cattle, and 4 or 5000 houses destroyed, and a considerable number of persons perished.
10. Fire in Savannah, Georgia. Fifty buildings destroyed.
11. Unsuccessful attack upon a Russian position near Trato on the Danube, by the Turks.
12. Capitulation of the city of Guatemala, after a long siege and some hard fighting, to the army of St. Salvador under General Morazan.
16. General Lamar embarks at Patia for Guayaquil with 1200 troops and 200 horses for the purpose of recommencing hostilities with the Peruvians.
18. Portuguese expedition against Terceira (held by the Constitutionalists) sailed from Lisbon.
22. Lepanto surrenders by capitulation to the Greeks.
27 & 28. Severe but undecisive fighting in the vicinity of Buenos Ayres, between the Federals and Unitarians.

MAY.

2. Extraordinary hail-storm in Tuscaloosa, Alabama. It fell to an average depth of twelve inches, and destroyed a great amount in gardens, orchards, windows, &c., in some instances killing animals exposed to its fury.
4. Riot in Manchester, England. One large factory burnt, and two others nearly destroyed.
6. The French Consul General at Buenos Ayres demanded his passports and left that place, in consequence of alleged insults to his flag and nation. The French Admiral took possession of the Buenos-Ayrean fleet of four brigs and several gunboats, after a hard action. One of the brigs burnt.
7. The Budget presented to the British Parliament by the Chancellor of the Exchequer. The most important fact stated in the speech of the Chancellor, was an anticipated decrease in the revenue of £850,000, arising from a depression of commerce. This depression was, however, considered as temporary, and the future prospects of the country were represented as encouraging.
7. The French Minister of Marine stated, in his Budget presented to the Chamber of Deputies, that the Navy had been increased by the addition of *seventy-nine vessels* within the year.
8. Decree issued by Bolivar, imposing additional duties on imports, for the purpose of increasing the revenue to meet the exigencies of the state.
8. Severe, but indecisive engagement between the Turkish garrisons of Rudschuk and Giurgevo and the Russian besieging army.

9. Destruction of the principal part of Transylvania University in Lexington, Kentucky, by fire.
14. Missolonghi and Anatolico surrender by capitulation to the Greeks.
15. Mr. O'Connell attempted to take his seat in the British House of Commons, under the provisions of the new law for the removal of Catholic disabilities; but without success, as he was elected previous to the passage of the law.
17. Death of John Jay at Bedford, N. York. He was one of the Presidents of the old Continental Congress, Minister to Spain and to Great Britain, Governor of New York, and Chief Justice of the United States.
17. A French minister, M. Bresson, arrives, and is presented to the Colombian government at Bogotá.
17. A body of Turkish troops, 5000 in number, defeated and driven into Silistria, by the Russian army under General Diebitsch, after a severe action, with heavy losses on both sides. Silistria completely invested by the Russians the same day.
17. Severe battle near Pravadia, between the Russian army under General Roth, and the Turkish army commanded by the Grand Vizier in person. The Turks are said to have lost 2000, and the Russians 1000 men. The Russian army maintained their ground; but no important advantage gained by either party.
18. Peruvian Frigate Prueba destroyed by fire in the harbor of Guayaquil, and a considerable number of persons killed.
20. Death of the reigning Duke of Oldenburgh.
22. A law passes the Mexican Congress, prohibiting the importation of most descriptions of woollen and cotton goods.
23. A Peruvian brig and schooner captured off the harbor of Guayaquil, by the Colombian schooner Istmena.
24. Coronation of the Emperor Nicholas of Russia, as king of Poland, at Warsaw.
27. Summer Session of the Massachusetts Legislature commenced.
27. Garrison of Silistria attempt a sally against the Russian besieging army, but are repulsed with loss.
29. Corner-stone of the first lock of the Chesapeake and Ohio Canal laid near Georgetown, District of Columbia, in the presence of the President of the United States.
29. Death of Sir Humphrey Davy, the celebrated Chemist, at Geneva.
30. Captain Ross sails from Woolwich, England, in the steam-boat Victory, on a voyage for the discovery of a Northwest passage.

JUNE.

2. Josiah Quincy inaugurated President of Harvard University in Cambridge, Massachusetts.
3. A detachment of men from the Austrian squadron under Baron Bundicra, land near Morocco, and destroy two Moorish brigs; and succeed in re-embarking with a loss of 22 men.
4. Explosion of the magazine of the steam frigate Fulton at the Navy Yard, Brooklyn, New York. The vessel was entirely destroyed, and 26 persons killed. Lieutenant S. M. Brackenridge among the number of the killed. The accident, it is supposed, took place through the carelessness of the gunner in taking a lamp into the magazine.
4. Resolutions introduced in the British House of Commons, declaring slavery unlawful, and that government should take measures to protect all their subjects born in the West Indies in the enjoyment of their natural rights. Negatived without a division.
6. Revolution effected at Lima by the party favorable to Bolivar; General Gamarra made President, and La Fuentes Vice-President.
9. The Turkish town of Rachova or Oriva, taken by assault by the Russian army under Baron Geismar. Five hundred prisoners taken, and among them a Pacha of two tails.
11. Great victory obtained by the Russians under General Diebitsch, near the village of Kulawtocha, not far from Schumla, over the Turkish army commanded by the Grand Vizier. The Russians having succeeded in getting in the rear of the Turkish troops, not only defeated, but completely dissolved their army. The Turks are said to have lost 6000 killed, 1500 prisoners, 60 pieces of cannon, and large quantities of ammunition and baggage. Russian loss 1400 killed, and 600 wounded.
12. A large body of Turkish cavalry and infantry defeated near Kurganoff, and 600 of them slain by the army under General Roth.
14. A body of Turkish troops, 15,000 in number, entirely defeated and their camp taken by storm, in the defile of Pozroy, by Russian detachments under Generals Marawicco and Buzzoro. The Turks lost 1200 men in killed and wounded, 400 prisoners, and large quantities of ammunition and other stores.
15. A squadron, with troops on board, sails from Lisbon for the reduction of Terceira.
16. The Emperor of Russia arrives at Warsaw.
17. Proclamation issued by the Captain General of Cuba to the Mexicans, informing them of an army about to be sent against them, and offering a general amnesty to all who submit and return to the paternal government of the king of Spain.
19. Mr. Gordon and Count Guilleminot, the British and French ambassadors, arrive at Constantinople.

22. A Spanish slave-ship, with 335 slaves, captured off Havana by the British government schooner Pickle. The slave-ship lost ten men killed in the action, and the Pickle lost two.
23. Battle between the Colombian troops under General Paez, and those under Generals Quiroga and Bustos, in which the latter were defeated with very heavy loss.
24. Eight persons killed on board the steam-boat Kenawha, on the Ohio river, by the bursting of her boiler.
24. English Parliament prorogued to the 20th of August.
24. Peace concluded between Generals Lavalle and Rosas, the chiefs of the two contending parties in the Argentine republic (Buenos Ayres). By the terms of the treaty, an election of representatives was to be immediately held, when both generals were to place their respective troops at the disposal of the legitimate government. In the mean time, the duty of preserving peace in the country districts was to devolve on Rosas, and in the city on Lavalle.
72. Ergerum captured by the Russians. Among the prisoners were the Seraskier and four Pachas; 150 cannon taken, 29 of them at Hassan-Kael.
30. Surrender of Silistria to the Russian army under General Krassowsky, after a long and obstinate resistance. The trophies of this achievement, were 8 or 10,000 prisoners, 2 three-tailed pachas, 250 pieces of cannon, and great quantities of ammunition.

JULY.

4. Navigation opened on the Chesapeake and Delaware Canal, by the removal of the embankment at the summit level. Corner-stone of an edifice for the accommodation of the United States' Mint, laid at Philadelphia.
5. Spanish invading expedition against Mexico sails from Havana. It consisted of one 74, two frigates, three corvettes, one brig, one schooner, and transports containing 4500 troops. The fleet commanded by Commodore Laborde, land forces by General Barradas.
15. Embargo laid on all merchant vessels at Vera Cruz, Mexico, in consequence of an expected Spanish invasion.
15. Two divisions detached from the Russian grand army before Schumla, to undertake the passage of the Balkan.
15. A general armistice or suspension of hostilities for seventy days, agreed upon between the Colombians and Peruvians, at Buijo, Bolivar's head-quarters; the department of Guayaquil to be put at the disposal of the Colombian government.
17, 18, & 19. Passage of the Balkane effected by the Russians, with comparatively little difficulty. The Turks lost 10 cannon, 400 prisoners, and a considerable number of killed.

19. Choris and Berbust, in Asiatic Turkey, occupied by the Russians.
22. A division of 6 or 7000 Turks defeated by the Russians in descending the Balkan ; 400 prisoners and a considerable number of cannon taken.
23. Capture of Mesembria, with 2000 men and 15 cannon.
23. Capture of Achiola, with 14 cannon and 2 powder magazines.
23. Greek National Assembly opened at Argos, on which occasion Count Capo d' Istria made a long speech.
24. Capture of Bourgas, with ten cannon, and large quantities of stores.
25. The new and large Roman Catholic Cathedral in Montreal, Lower Canada, opened for public worship the first time. Ten thousand persons were seated in it without inconvenience.
25. Capture of Aidos, with the whole Turkish camp; 600 tents, 500 barrels of powder, 4 cannon, and 220 prisoners.
25. Destructive hail-storm in the country near Bourdeaux, France. The crops almost entirely destroyed by it.
27. Kamabat, a strong post situated at the junction of several roads on the Balkan, taken by the Russians.
28. Operations commenced on the Baltimore and Susquehanna Rail Road.
28. Karabounar, 40 miles south of Aidos, on the road to Adrianople, occupied by the Russians under Count Pahlen.
29. Simultaneous movements by Russian corps from Maraseh and Karnabat; the former against the rear of Schumla, by General Krassowski, and the latter towards Jambouli, by General Sheremetief.
30. Battle near Eski Stamboul between the Russian division under Krassowski, and the troops of the Grand Vizier, resulting in a loss to the latter of 500 or 600 men.
30. Nine persons, several of them of rank, condemned to death for high treason at Barcelona, Spain.
31. Corner-stone of a College Hall for the Pennsylvania University laid in Philadelphia.

AUGUST.

1. Capture of Jambouli, and destruction of the Turkish camp, by a brigade of Hulans and Cossacks under General Sher metief, after having defeated on the road a body of 15,000 Turks, commanded by Halil Pacha.
1. Embargo laid on the shipping in Vera Cruz, Mexico.
2. Marriage of the Emperor Don Pedro, of Brazil, to the Princess de Leuchtenberg, at Munich ; Prince Charles of Bavaria acting as proxy for the Emperor.

3. Spanish invading army under General Barradas, having landed in Mexico, at Cabo Rojo (Cape Roque), take possession of the old town of Tampico, with 1500 men, after a trifling resistance.
4. Extraordinary session of the Congress opened at Mexico. Don Pedro Maria Anaya elected President of the Chamber of Deputies, and Don Valentia Gomez Farias, President of the Senate.
4. Severe storm and destructive flood in Scotland. The sudden rise of the rivers carried away great numbers of sheep and large quantities of timber, hay, &c. Eleven vessels were wrecked on the coast, and the crews of eight of them perished.
9. Entire change in the French ministry by a decree of the king. The Liberals or moderate party dismissed from office, and an Ultra-royalist ministry, with Prince de Polignac at its head, appointed in their places. This measure is said to have been effected through the influence of the British cabinet.
11. Attack on the island of Terceira, by the fleet and troops of Don Miguel. The expedition consisted of one 74, four frigates, and a large number of smaller vessels, with 4000 troops on board. The attack was entirely unsuccessful; 100 who landed were all killed or taken prisoners, and the fleet and crews suffered very severely.
12. Selimno, to which place the Grand Vizier had made his way from Schumla, attacked by several Russian corps, amounting to about 27,000 men, collected from different posts by General Diebitsch, into whose hands the place easily fell, the Turks flying in dismay.
12. Mr. M'Lane, Envoy to Great Britain, and Mr. Rives, to France, embark on board the United States frigate Constellation at New York.
12. Tampico declared a free port, for the admission of provisions, by General Barradas, the Spanish commander.
13 & 14. The Mexican army, under General Santa Anna, left Tuspan for Tampico.
20. Capture of Adrianople by a Russian force consisting of 28,000 men, commanded in person by General Diebitsch. The garrison of the city, amounting to 100,000 regular troops, laid down their arms immediately on the approach of the Russians, to whom the Turks also abandoned all their artillery, camp equipage, and munitions of war; 54 pieces of cannon, 29 stands of colors, and 5 horse-tails, fell into the hands of the conquerors.
20. British Parliament prorogued to the 15th of October.
22. The Mexican army, under General Santa Anna, make an unsuccessful attack upon the Spaniards in Tampico.
22. A new levy of troops ordered by the Emperor of Russia of three men out of every five hundred.
23. Rodosto, on the sea of Marmora, captured by the Russian army under General Roth.

24. Mr. Reuben Kelsey of Fairfield, Vermont, died of voluntary starvation, caused by mental delusion. He lived *fifty-two days* without taking any nourishment, except water.
24. General Vismout appointed governor of Buenos Ayres.
25. Joseph Story installed as the first Dane Professor of Law in Harvard University.
25. General Diebitsch, with the main body of the Russian army, commences his march from Adrianople towards Constantinople.

SEPTEMBER.

12. Surrender of the Spanish army under General Barradas at Tampico, Mexico, to the Mexican army under General Santa Anna; the Spaniards to transport themselves to Havana, and pledge themselves not to serve against Mexico in future.

*True Distances between the Centres of the Sun and Moon, for every third Hour (apparent Time) for the Meridian of Greenwich.**

When the distances decrease the sun is east, and when they increase, west, of the moon.

Jan. d. h.	Distance. ° ′ ″	Jan. d. h.	Distance. ° ′ ″	Jan. d. h.	Distance. ° ′ ″	Jan. d. h.	Distance. ° ′ ″	Feb. d. h.	Distance. ° ′ ″
1 0	82 4 8	15 6	105 19 18	19 21	54 13 48	30 6	80 54 23	13 18	109 27 13
3	3 42 11	9	3 58 27	20 0	2 46 41	9	2 32 24	21	8 5 41
6	5 20 12	12	2 37 37	3	51 19 15	12	4 10 14	14 0	6 44 4
9	6 58 13	15	101 16 47	6	49 51 29	15	5 47 51	3	5 22 20
12	88 36 12	18	99 55 55	9	8 23 24	18	7 25 16	6	4 0 28
15	90 14 9	21	8 35 2	12	6 54 59	21	89 2 30	9	2 38 28
18	1 52 5	16 0	7 14 7	15	5 26 14	31 0	90 39 31	12	101 16 20
21	3 29 59	3	5 53 9	18	3 57 8	3	2 16 20	15	99 54 3
2 0	5 7 50	6	4 32 7	21	2 27 42	6	3 52 57	18	8 31 36
3	6 45 39	9	3 11 1	21 0	40 57 56	9	5 29 21	21	7 8 59
6	98 23 25	12	1 49 51	3	39 27 51	12	7 5 33	15 0	5 46 12
9	100 1 8	15	90 28 35	Jan.		15	98 41 32	3	4 23 13
12	1 38 48	18	89 7 13	27 3	39 12 57	18	100 17 19	6	3 0 1
15	3 16 24	21	7 45 45	6	40 54 8	21	1 52 54	9	1 36 37
18	4 53 57	17 0	6 24 10	9	2 35 18			12	90 13 0
21	6 31 26	3	5 2 27	12	4 16 27	Feb.		15	88 49 9
3 0	8 8 51	6	3 40 36	15	5 57 34	1 0	3 28 15	18	7 25 3
3	109 46 13	9	2 18 36	18	7 38 37	3	5 3 24	21	6 0 43
6	111 23 30	12	80 56 27	21	49 19 37	6	6 38 21	16 0	4 36 7
9	3 0 43	15	79 34 8	28 0	51 0 32	9	8 13 6	3	3 11 14
12	4 37 51	18	8 11 38	3	2 41 22	12	109 47 39	6	1 46 5
15	6 14 54	21	6 48 57	6	4 22 6	15	111 21 59	9	80 20 38
18	7 51 52	18 0	5 26 5	9	6 2 44	18	2 56 8	12	78 54 54
21	119 28 44	3	4 3 1	12	7 43 15	21	4 30 4	15	7 28 51
4 0	121 5 32	6	2 39 45	15	59 23 38	2 0	6 3 49	18	6 2 29
Jan.		9	71 16 15	18	61 3 53	3	7 37 21	21	4 35 48
13 21	120 11 11	12	69 52 30	21	2 44 0	6	119 10 42	17 0	3 8 47
14 0	118 49 45	15	8 28 31	29 0	4 23 58	9	120 43 50	3	1 41 26
3	7 28 24	18	7 4 17	3	6 3 47	Feb.		6	70 13 43
6	6 7 9	21	5 39 48	6	7 43 26	12 18	120 16 48	9	68 45 39
9	4 45 59	19 0	4 15 4	9	69 22 55	21	118 55 46	12	7 17 14
12	3 24 53	3	2 50 3	12	71 2 15	13 0	7 34 43	15	5 48 26
15	2 3 51	6	61 24 44	15	2 41 24	3	6 13 37	18	4 19 15
18	110 42 52	9	59 59 9	18	4 20 22	6	4 52 28	21	2 49 41
21	109 21 55	12	8 33 16	21	5 59 9	9	3 31 16	18 0	61 19 44
15 0	8 1 1	15	7 7 5	30 0	7 37 45	12	2 10 0	3	59 49 23
3	6 40 9	18	5 40 36	3	79 16 10	15	110 48 39	6	8 18 37

* These distances are corrected for the error in Delambre's tables of the sun, which are used without correction, in the computation of the distances, in the English Nautical Almanac.

Feb. d.	h.	Distance. °	′	″
18	9	56	47	27
	12	5	15	52
	15	3	43	52
	18	2	11	27
	21	50	38	36
19	0	49	5	20
	3	7	31	38
	6	5	57	30
	9	4	22	56
	12	2	47	57
	15	41	12	32
	18	39	36	42
Feb.				
25	15	40	49	57
	18	2	33	27
	21	4	16	45
26	0	5	59	49
	3	7	42	39
	6	49	25	14
	9	51	7	34
	12	2	49	38
	15	4	31	24
	18	6	12	53
	21	7	54	5
27	0	59	34	59
	3	61	15	35
	6	2	55	52
	9	4	35	50
	12	6	15	29
	15	7	54	48
	18	69	33	47
	21	71	12	27
28	0	2	50	48
	3	4	28	48
	6	6	6	28
	9	7	43	48
	12	79	20	48
	15	80	57	28
	18	2	33	48
	21	4	9	48
Mar.				
1	0	5	45	28
	3	7	20	48
	6	88	55	48
	9	90	30	29
	12	2	4	51
	15	3	38	53
	18	5	12	37

Mar. d.	h.	Distance. °	′	″
1	21	96	46	2
2	0	8	19	9
	3	99	51	58
	6	101	24	28
	9	2	56	41
	12	4	28	37
	15	6	0	15
	18	7	31	36
	21	109	2	40
3	0	110	32	28
	3	2	4	0
	6	3	34	17
	9	5	4	18
	12	6	34	4
	15	S	3	35
	18	119	32	51
	21	121	1	53
Mar.				
14	12	120	48	35
	15	119	26	7
	18	8	3	30
	21	6	40	44
15	0	5	17	49
	3	3	54	44
	6	2	31	28
	9	111	8	1
	12	109	44	24
	15	8	20	35
	18	6	56	32
	21	5	32	17
16	0	4	7	49
	3	2	43	6
	6	101	18	S
	9	99	52	55
	12	8	27	26
	15	7	1	41
	18	5	35	39
	21	4	9	19
17	0	2	42	42
	3	91	15	46
	6	89	48	31
	9	8	20	57
	12	6	53	3
	15	5	24	48
	18	3	56	12
	21	2	27	14
18	0	80	57	53
	3	79	28	10
	6	7	58	4

Mar. d.	h.	Distance. °	′	″
18	9	76	27	35
	12	4	56	43
	15	3	25	27
	18	1	53	45
	21	70	21	38
19	0	68	49	7
	3	7	16	10
	6	5	42	47
	9	4	8	58
	12	2	34	43
	15	61	0	1
	18	59	24	52
	21	7	49	16
20	0	6	13	14
	3	4	36	44
	6	2	59	47
	9	51	22	24
	12	49	44	34
	15	8	6	17
	18	6	27	34
	21	4	48	24
21	0	3	S	49
	3	41	28	48
	6	39	48	22
Mar.				
26	21	39	9	44
27	0	40	53	4
	3	2	36	4
	6	4	18	42
	9	6	0	59
	12	7	42	54
	15	49	24	27
	18	51	5	36
	21	2	46	21
28	0	4	26	43
	3	6	6	41
	6	7	46	14
	9	59	25	22
	12	61	4	6
	15	2	42	24
	18	4	20	17
	21	5	57	46
29	0	7	34	49
	3	69	11	27
	6	70	47	40
	9	2	23	28
	12	3	58	52
	15	5	33	50
	18	7	8	24

Mar. d.	h.	Distance. °	′	″
29	21	78	42	34
30	0	80	16	20
	3	1	49	42
	6	3	22	40
	9	4	55	16
	12	6	27	28
	15	7	59	17
	18	89	30	45
	21	91	1	51
31	0	2	32	36
	3	4	3	0
	6	5	33	3
	9	7	2	46
	12	98	32	10
	15	100	1	14
	18	1	29	58
	21	2	58	24
April				
1	0	4	26	32
	3	5	54	22
	6	7	21	54
	9	108	49	10
	12	110	16	9
	15	1	42	53
	18	3	9	22
	21	4	35	36
2	0	6	1	35
	3	7	27	20
	6	118	52	52
	9	120	18	11
	12	1	43	16
April				
13	3	121	11	22
	6	119	46	4
	9	8	20	33
	12	6	54	49
	15	5	28	51
	18	4	2	39
	21	2	36	11
14	0	111	9	29
	3	109	42	31
	6	8	15	16
	9	6	47	45
	12	5	19	57
	15	3	51	52
	18	2	23	29
	21	100	54	48
15	0	99	25	49

April d.	h.	Distance. °	′	″
15	3	97	56	30
	6	6	26	52
	9	4	56	53
	12	3	26	35
	15	1	55	56
	18	90	24	55
	21	88	53	33
16	0	7	21	50
	3	5	49	44
	6	4	17	16
	9	2	44	25
	12	81	11	11
	15	79	37	34
	18	S	3	33
	21	6	29	9
17	0	4	54	21
	3	3	19	8
	6	1	43	31
	9	70	7	30
	12	68	31	5
	15	6	54	14
	18	5	16	59
	21	3	39	20
18	0	2	1	16
	3	60	22	48
	6	58	43	56
	9	7	4	40
	12	5	25	1
	15	3	44	58
	18	2	4	32
	21	50	23	44
19	0	48	42	34
	3	7	1	2
	6	5	19	8
	9	3	36	54
	12	1	54	21
	15	40	11	29
April				
25	6	39	2	49
	9	40	43	4
	12	2	22	56
	15	4	2	24
	18	5	41	28
	21	7	20	7
26	0	48	58	22
	3	50	36	11
	6	2	13	34
	9	3	50	31
	12	5	27	2

April d.	h.	Distance. °	′	″
26	15	57	3	7
	18	58	38	46
	21	60	13	58
27	0	1	48	45
	3	3	23	5
	6	4	57	0
	9	6	30	29
	12	8	3	33
	15	69	36	11
	18	71	8	25
	21	2	40	14
28	0	4	11	39
	3	5	42	39
	6	7	13	15
	9	78	43	28
	12	80	13	18
	15	1	42	45
	18	3	11	50
	21	4	40	34
29	0	6	8	56
	3	7	36	57
	6	89	4	39
	9	90	32	1
	12	1	59	4
	15	3	25	47
	18	4	52	12
	21	6	18	20
30	0	7	44	10
	3	99	9	44
	6	100	35	2
	9	2	0	4
	12	3	24	51
	15	4	49	23
	18	6	13	41
	21	7	37	45
May.				
1	0	109	1	35
	3	110	25	13
	6	1	48	40
	9	3	11	55
	12	4	34	59
	15	5	57	52
	18	7	20	36
	21	118	43	10
2	0	120	5	34
May.				
12	15	121	15	15
	18	119	46	9

May. d.	h.	Distance. °	′	″
12	21	118	16	49
13	0	6	47	14
	3	5	17	23
	6	3	47	16
	9	2	16	52
	12	110	46	12
	15	109	15	16
	18	7	44	3
	21	6	12	33
14	0	4	40	46
	3	3	8	41
	6	1	36	18
	9	100	3	37
	12	98	30	39
	15	6	57	22
	18	5	23	46
	21	3	49	52
15	0	2	15	40
	3	90	41	8
	6	89	6	17
	9	7	31	6
	12	5	55	36
	15	4	19	47
	18	2	43	38
	21	81	7	10
16	0	79	30	22
	3	7	53	14
	6	6	15	47
	9	4	38	0
	12	2	59	54
	15	71	21	29
	18	69	42	45
	21	8	3	43
17	0	6	24	22
	3	4	44	42
	6	3	4	44
	9	61	24	29
	12	59	43	56
	15	8	3	6
	18	6	22	0
	21	4	40	38
18	0	2	59	1
	3	51	17	9
	6	49	35	3
	9	7	52	44
	12	6	10	13
	15	4	27	31
	18	2	44	39

May. d.	h.	Distance. °	′	″
18	21	41	1	38
19	0	39	18	27
May.				
24	18	39	59	3
	21	41	34	21
25	0	3	9	18
	3	4	43	52
	6	6	18	3
	9	7	51	50
	12	49	25	14
	15	50	58	15
	18	2	30	52
	21	4	3	6
26	0	5	34	57
	3	7	6	24
	6	58	37	28
	9	60	8	9
	12	1	38	27
	15	3	8	22
	18	4	37	54
	21	6	7	5
27	0	7	35	54
	3	69	4	21
	6	70	32	28
	9	2	0	14
	12	3	27	40
	15	4	54	46
	18	6	21	33
	21	7	48	2
28	0	79	14	11
	3	80	40	2
	6	2	5	35
	9	3	30	52
	12	4	55	52
	15	6	20	37
	18	7	45	7
	21	89	9	22
29	0	90	33	23
	3	1	57	10
	6	3	20	44
	9	4	44	6
	12	6	7	16
	15	7	30	14
	18	98	53	2
	21	100	15	39
30	0	1	38	6
	3	3	0	24
	6	4	22	33

May. d.	h.	Distance. °	′	″
30	9	105	44	35
	12	7	6	28
	15	8	28	14
	18	109	49	55
	21	111	11	29
31	0	2	32	58
	3	3	54	22
	6	5	15	42
	9	6	36	58
	12	7	58	10
	15	119	19	19
	18	120	40	25
June.				
11	0	121	10	28
	3	119	37	8
	6	8	3	35
	9	6	29	48
	12	4	55	48
	15	3	21	35
	18	1	47	8
	21	110	12	28
12	0	108	37	35
	3	7	2	29
	6	5	27	9
	9	3	51	36
	12	2	15	50
	15	100	39	51
	18	99	3	38
	21	7	27	13
13	0	5	50	35
	3	4	13	43
	6	2	36	39
	9	90	59	22
	12	89	21	52
	15	7	44	10
	18	6	6	15
	21	4	28	8
14	0	2	49	49
	3	81	11	17
	6	79	32	34
	9	7	53	39
	12	6	14	32
	15	4	35	14
	18	2	55	45
	21	71	16	6
15	0	69	36	16
	3	7	56	16

June. d.	h.	Distance. °	′	″
15	6	66	16	7
	9	4	35	50
	12	2	55	24
	15	61	14	49
	18	59	34	5
	21	7	53	14
16	0	6	12	17
	3	4	31	14
	6	2	50	6
	9	51	8	53
	12	49	27	36
	15	7	46	15
	18	6	4	51
	21	4	23	25
17	0	2	41	59
	3	41	0	33
	6	39	19	8
June.				
23	6	39	57	51
	9	41	28	10
	12	2	58	11
	15	4	27	53
	18	5	57	16
	21	7	26	20
24	0	48	55	5
	3	50	33	31
	6	1	51	38
	9	3	19	26
	12	4	46	56
	15	6	14	7
	18	7	41	1
	21	59	7	38
25	0	60	33	57
	3	1	59	59
	6	3	25	45
	9	4	51	14
	12	6	16	27
	15	7	41	25
	18	69	6	8
	21	70	30	37
26	0	1	54	52
	3	3	18	53
	6	4	42	41
	9	6	6	17
	12	7	29	41
	15	78	52	53
	18	80	15	55
	21	1	38	47

June. d.	h.	Distance. °	′	″
27	0	83	1	28
	3	4	24	0
	6	5	46	24
	9	7	8	40
	12	8	30	48
	15	89	52	49
	18	91	14	44
	21	2	36	33
28	0	3	58	17
	3	5	19	56
	6	6	41	31
	9	8	3	2
	12	99	24	30
	15	100	45	56
	18	2	7	21
	21	3	28	44
29	0	4	50	6
	3	6	11	28
	6	7	32	51
	9	108	54	15
	12	110	15	40
	15	1	37	7
	18	2	58	36
	21	4	20	8
30	0	5	41	43
	3	7	3	22
	6	8	25	6
	9	119	46	55
	12	121	8	49

July. d.	h.	Distance. °	′	″
10	6	121	25	45
	9	119	48	26
	12	8	11	0
	15	6	33	27
	18	4	55	47
	21	3	18	1
11	0	1	40	9
	3	110	2	10
	6	108	24	5
	9	6	45	55
	12	5	7	40
	15	3	29	20
	18	1	50	56
	21	100	12	27
12	0	98	33	53
	3	6	55	15

July. d.	h.	Distance. °	′	″
12	6	95	16	33
	9	3	37	47
	12	1	58	57
	15	90	20	4
	18	88	41	8
	21	7	2	9
13	0	5	23	8
	3	3	44	4
	6	2	4	58
	9	80	25	50
	12	78	46	40
	15	7	7	29
	18	5	28	16
	21	3	49	3
14	0	2	9	49
	3	70	30	34
	6	68	51	19
	9	7	12	4
	12	5	32	49
	15	3	53	35
	18	2	14	22
	21	60	35	11
15	0	58	56	2
	3	7	16	55
	6	5	37	51
	9	3	58	50
	12	2	19	53
	15	50	40	59
	18	49	2	9
	21	7	23	24
16	0	5	44	44
	3	4	6	10
	6	2	27	43
	9	40	49	23
	12	39	11	11

July. d.	h.	Distance. °	′	″
22	21	40	23	48
23	0	1	49	44
	3	3	15	26
	6	4	40	55
	9	6	6	11
	12	7	31	12
	15	48	56	0
	18	50	20	35
	21	1	44	57
24	0	3	9	7
	3	4	33	4
	6	5	56	50

July. d.	h.	Distance. °	′	″
24	9	57	20	25
	12	58	43	49
	15	60	7	2
	18	1	30	6
	21	2	53	1
25	0	4	15	46
	3	5	38	23
	6	7	0	52
	9	8	23	13
	12	69	45	26
	15	71	7	33
	18	2	29	34
	21	3	51	30
26	0	5	13	20
	3	6	35	6
	6	7	56	49
	9	79	18	29
	12	80	40	5
	15	2	1	39
	18	3	23	12
	21	4	44	44
27	0	6	6	16
	3	7	27	48
	6	88	49	21
	9	90	10	55
	12	1	32	31
	15	2	54	9
	18	4	15	50
	21	5	37	35
28	0	6	59	24
	3	8	21	18
	6	99	43	18
	9	101	5	24
	12	2	27	35
	15	3	49	53
	18	5	12	19
	21	6	34	55
29	0	7	57	39
	3	109	20	32
	6	110	43	36
	9	2	6	50
	12	3	30	14
	15	4	53	50
	18	6	17	38
	21	7	41	38
30	0	119	5	51
	3	120	30	17

Aug. d.	h.	Distance. °	′	″
8	12	121	4	39
	15	119	24	21
	18	7	44	6
	21	6	3	54
9	0	4	23	45
	3	2	43	40
	6	111	3	39
	9	109	23	43
	12	7	43	51
	15	6	4	4
	18	4	24	23
	21	2	44	47
10	0	101	5	16
	3	99	25	52
	6	7	46	33
	9	6	7	21
	12	4	28	16
	15	2	49	18
	18	91	10	27
	21	89	31	43
11	0	7	53	6
	3	6	14	37
	6	4	36	16
	9	2	58	3
	12	81	19	58
	15	79	42	1
	18	8	4	11
	21	6	26	30
12	0	4	48	58
	3	3	11	35
	6	71	34	20
	9	69	57	14
	12	8	20	17
	15	6	43	28
	18	5	6	49
	21	3	30	18
13	0	1	53	56
	3	60	17	45
	6	58	41	43
	9	7	5	51
	12	5	30	8
	15	3	54	35
	18	2	19	11
	21	50	43	58
14	0	49	8	55
	3	7	34	3
	6	5	59	21
	9	4	24	49

Aug. d.	h.	Distance. °	′	″
14	12	42	50	28
	15	41	16	18
	18	39	42	19
Aug.				
21	12	39	55	11
	15	41	18	5
	18	2	40	51
	21	4	3	29
22	0	5	25	58
	3	6	48	20
	6	8	10	35
	9	49	32	44
	12	50	54	46
	15	2	16	42
	18	3	38	33
	21	5	0	20
23	0	6	22	2
	3	7	43	40
	6	59	5	15
	9	60	26	48
	12	1	48	17
	15	3	9	44
	18	4	31	10
	21	5	52	36
24	0	7	14	1
	3	8	35	25
	6	69	56	51
	9	71	18	18
	12	2	39	46
	15	4	1	17
	18	5	22	51
	21	6	44	29
25	0	8	6	10
	3	79	27	56
	6	80	49	47
	9	2	11	45
	12	3	33	49
	15	4	56	0
	18	6	18	18
	21	7	40	45
26	0	89	3	21
	3	90	26	6
	6	1	49	1
	9	3	12	8
	12	4	35	24
	15	5	58	52
	18	7	22	34
	21	98	46	28

Aug. d.	h.	Distance. °	′	″
27	0	100	10	35
	3	1	34	56
	6	2	59	32
	9	4	24	23
	12	5	49	30
	15	7	14	53
	18	108	40	34
	21	110	6	32
28	0	1	32	47
	3	2	59	20
	6	4	26	13
	9	5	53	26
	12	7	20	57
	15	118	48	48
	18	120	17	1
Sept.				
6	18	120	51	23
	21	119	9	59
7	0	7	28	48
	3	5	47	50
	6	4	7	7
	9	2	26	38
	12	110	46	24
	15	109	6	24
	18	7	26	40
	21	5	47	11
8	0	4	7	58
	3	2	29	1
	6	100	50	19
	9	99	11	53
	12	7	33	42
	15	5	55	48
	18	4	18	10
	21	2	40	48
9	0	91	3	42
	3	89	26	52
	6	7	50	19
	9	6	14	2
	12	4	38	1
	15	3	2	16
	18	81	26	47
	21	79	51	33
10	0	8	16	36
	3	6	41	55
	6	5	7	29
	9	3	33	19
	12	1	59	24

Sept. d.	h.	Distance. °	′	″
10	15	70	25	44
	18	68	52	19
	21	7	19	9
11	0	5	46	14
	3	4	13	34
	6	2	41	7
	9	61	8	55
	12	59	36	58
	15	8	5	14
	18	6	33	44
	21	5	2	28
12	0	3	31	24
	3	2	0	34
	6	50	29	58
	9	48	59	34
	12	7	29	24
	15	5	59	26
	18	4	29	41
	21	3	0	8
13	0	1	30	48
	3	40	1	40
Sept.				
20	6	40	13	55
	9	1	35	6
	12	2	56	15
	15	4	17	24
	18	5	38	32
	21	6	59	40
21	0	8	20	48
	3	49	41	55
	6	51	3	4
	9	2	24	14
	12	3	45	26
	15	5	6	40
	18	6	27	56
	21	7	49	16
22	0	59	10	40
	3	60	32	8
	6	1	53	41
	9	3	15	19
	12	4	37	3
	15	5	58	53
	18	7	20	50
	21	68	42	55
23	0	70	5	7
	3	1	27	28
	6	2	49	58
	9	4	12	37

Sept. d.	h.	Distance. °	′	″
23	12	75	35	27
	15	6	58	27
	18	8	21	39
	21	79	45	3
24	0	81	8	39
	3	2	32	28
	6	3	56	30
	9	5	20	47
	12	6	45	18
	15	8	10	5
	18	89	35	8
	21	91	0	28
25	0	2	26	4
	3	3	51	58
	6	5	18	11
	9	6	44	42
	12	8	11	32
	15	99	38	42
	18	101	6	12
	21	2	34	3
26	0	4	2	16
	3	5	30	50
	6	6	59	47
	9	8	29	6
	12	109	58	48
	15	111	28	54
	18	2	59	24
	21	4	30	18
27	0	6	1	37
	3	7	33	20
	6	119	5	29
	9	120	38	3
Oct.				
6	0	121	32	31
	3	119	52	4
	6	8	11	59
	9	6	32	16
	12	4	52	56
	15	3	13	58
	18	111	35	22
	21	109	57	9
7	0	8	19	19
	3	6	41	52
	6	5	4	47
	9	3	28	5
	12	1	51	46
	15	100	15	49

Oct. d.	h.	Distance. °	′	″
7	18	98	40	15
	21	7	5	3
8	0	5	30	13
	3	3	55	45
	6	2	21	39
	9	90	47	55
	12	89	14	32
	15	7	41	31
	18	6	8	51
	21	4	36	32
9	0	3	4	33
	3	1	32	54
	6	80	1	35
	9	78	30	35
	12	6	59	54
	15	5	29	32
	18	3	59	28
	21	2	29	42
10	0	71	0	13
	3	69	31	3
	6	8	2	10
	9	6	33	34
	12	5	5	14
	15	3	37	10
	18	2	9	21
	21	60	41	48
11	0	59	14	30
	3	7	47	27
	6	6	20	38
	9	4	54	3
	12	3	27	42
	15	2	1	34
	18	50	35	39
	21	49	9	57
12	0	7	44	28
	3	6	19	11
	6	4	54	5
	9	3	29	12
	12	2	4	30
	15	40	40	00
	18	39	15	41
Oct.				
20	0	40	19	22
	3	1	40	36
	6	3	1	55
	9	4	23	20
	12	5	44	51
	15	7	6	28

Oct. d.	h.	Distance. °	′	″
20	18	48	28	12
	21	49	50	4
21	0	51	12	3
	3	2	34	10
	6	3	56	26
	9	5	18	51
	12	6	41	24
	15	8	4	6
	18	59	26	59
	21	60	50	3
22	0	2	13	18
	3	3	36	44
	6	5	0	22
	9	6	24	13
	12	7	48	17
	15	69	12	34
	18	70	37	5
	21	2	1	51
23	0	3	26	51
	3	4	52	6
	6	6	17	37
	9	7	43	25
	12	79	9	29
	15	80	35	50
	18	2	2	30
	21	3	29	29
24	0	4	56	46
	3	6	24	22
	6	7	52	19
	9	89	20	37
	12	90	49	15
	15	2	18	14
	18	3	47	36
	21	5	17	20
25	0	6	47	26
	3	8	17	55
	6	99	48	48
	9	101	20	5
	12	2	51	45
	15	4	23	50
	18	5	56	20
	21	7	29	16
26	0	109	2	36
	3	110	36	22
	6	2	10	34
	9	3	45	12
	12	5	20	15
	15	6	55	44

Oct. d. h.	Distance. ° ′ ″
26 18	118 31 40
21	120 8 3
Nov.	
4 12	120 26 30
15	118 49 29
18	7 12 54
21	5 36 46
5 0	4 1 4
3	2 25 48
6	110 50 58
9	109 16 34
12	7 42 35
15	6 9 2
18	4 35 54
21	3 3 12
6 0	101 30 55
3	99 59 2
6	8 27 33
9	6 56 28
12	5 25 47
15	3 55 29
18	2 25 33
21	90 56 0
7 0	89 26 49
3	7 58 0
6	6 29 31
9	5 1 23
12	3 33 36
15	2 6 8
18	80 38 58
21	79 12 7
8 0	7 45 35
3	6 19 20
6	4 53 23
9	3 27 42
12	2 2 18
15	70 37 10
18	69 12 17
21	7 47 39
9 0	6 23 15
3	4 59 5
6	3 35 8
9	2 11 24
12	60 47 53
15	59 24 34
18	8 1 26

Nov. d. h.	Distance. ° ′ ″
9 12	56 38 30
10 0	5 15 45
3	3 53 10
6	2 30 45
9	51 8 30
12	49 46 25
15	8 24 29
18	7 2 41
21	5 41 2
11 0	4 19 31
3	2 58 8
6	1 36 53
9	0 15 46
Nov.	
18 15	39 16 53
18	40 40 4
21	2 3 26
19 0	3 27 0
3	4 50 46
6	6 14 43
9	7 38 52
12	49 3 14
15	50 27 48
18	1 52 34
21	3 17 33
20 0	4 42 46
3	6 8 12
6	7 33 51
9	58 59 45
12	60 25 53
15	1 52 16
18	3 18 54
21	4 45 47
21 0	6 12 56
3	7 40 21
6	69 8 2
9	70 36 1
12	2 4 16
15	3 33 49
18	5 1 41
21	6 30 51
22 0	8 0 19
3	79 30 6
6	81 0 13
9	2 30 39
12	4 1 25

Nov. d. h.	Distance. ° ′ ″
22 15	85 32 31
18	7 3 59
21	88 35 47
23 0	90 7 57
3	1 40 28
6	3 13 21
9	4 46 36
12	6 20 14
15	7 54 14
18	99 28 37
21	101 3 22
24 0	2 38 31
3	4 14 3
6	5 49 58
9	7 26 16
12	109 2 58
15	110 40 3
18	2 17 31
21	3 55 21
25 0	5 33 34
3	7 12 10
6	118 51 8
9	120 30 28
Dec.	
4 0	121 12 28
3	119 39 42
6	8 7 21
9	6 35 26
12	5 3 57
15	3 32 53
18	2 2 13
21	110 31 57
5 0	109 2 6
3	7 32 39
6	6 3 35
9	4 34 54
12	3 6 35
15	1 38 39
18	100 11 5
21	98 43 51
6 0	7 16 58
3	5 50 26
6	4 24 13
9	2 58 19
12	1 32 44
15	90 7 27

Dec. d. h.	Distance. ° ′ ″
6 18	88 42 27
21	7 17 45
7 0	5 53 19
3	4 29 9
6	3 5 14
9	1 41 34
12	80 18 8
15	78 54 56
18	7 31 56
21	6 9 9
8 0	4 46 35
3	3 24 12
6	2 1 59
9	70 39 57
12	69 18 5
15	7 56 22
18	6 34 47
21	5 13 21
9 0	3 52 3
3	2 30 51
6	61 9 46
9	59 48 47
12	8 27 54
15	7 7 6
18	5 46 22
21	4 25 43
10 0	3 5 8
3	1 44 37
6	50 24 9
9	49 3 44
12	7 43 21
15	6 23 0
18	5 2 41
21	3 42 24
11 0	2 22 8
3	41 1 53
6	39 41 39
Dec.	
18 9	40 24 23
12	1 51 55
15	3 19 41
18	4 47 41
21	6 15 54
19 0	7 44 21
3	49 13 2

Dec. d. h.	Distance. ° ′ ″
19 6	50 41 58
9	2 11 8
12	3 40 31
15	5 10 8
18	6 39 59
21	8 10 4
20 0	59 40 24
3	61 10 59
6	2 41 48
9	4 12 53
12	5 44 12
15	7 15 46
18	68 47 35
21	70 19 40
21 0	1 52 1
3	3 24 38
6	4 57 30
9	6 30 38
12	8 4 3
15	79 37 44
18	81 11 41
21	2 45 55
22 0	4 20 26
3	5 55 14
6	7 30 19
9	89 5 41
12	90 41 19
15	2 17 14
18	3 53 27
21	5 29 56
23 0	7 6 43
3	98 43 47
6	100 21 8
9	1 58 46
12	3 36 41
15	5 14 53
18	6 53 21
21	108 32 5
24 0	110 11 4
3	1 50 20
6	3 29 52
9	5 9 38
12	6 49 40
15	118 29 57
18	120 10 27

JEWISH CALENDAR.

[Those fasts or feasts marked with an asterisk are strictly observed.]

Year.	Month.	Day.			
5590	Tebeth	1st	. . . .	Dec. 27,	1829
	"	10	Fast for the siege of Jerusalem	Jan. 5,	1830
	Schebat	1	. . . .	" 25	
	Adar	1	. . . .	Feb. 24	
	"	13	Fast of Esther . .	March 8	
	"	14	*Purim . . .	" 9	
	"	15	Schuschan Purim .	" 10	
	Nisan	1	. . . .	" 25	
	"	15	*Beginning of the Passover	April 8	
	"	16	*Second Feast . .	" 9	
	"	21	*Seventh Feast . .	" 14	
	"	22	*End of the Passover .	" 15	
	Ijar	1	. . . .	" 24	
	"	18	Lag beomer . . .	May 11	
	Sivan	1	. . . .	" 23	
	"	6	*Feast of Weeks . .	" 28	
	"	7	Second Feast . .	" 29	
	Thamus	1	. . . .	June 22	
	"	17	Fast for the taking of the Temple	July 8	
	Ab	1	. . . .	" 21	
	"	9	Fast for the burning of the Temple	" 29	
	Elul	1	. . . .	Aug. 20	
5591	Tisri	1	*Feast for the new Year .	Sept. 18	
	"	2	*Second Feast for the new Year	" 19	
	"	3	*Fast of Gedaljah .	" 20	
	"	10	*Feast of the Reconciliation	" 27	
	"	15	*Feast of the Tents . .	Oct. 2	
	"	16	*Second Feast . .	" 3	
	"	21	Feast of Palms . .	" 8	
	"	22	*End of the Congregation, or Tent-Feast . .	" 9	
	"	23	*Rejoicing for the Discovery of the Law . .	" 10	
	Marcheschvan	1	. . . .	" 18	
	Kislev	1	. . . .	Nov. 17	
	"	25	Consecration of the Temple .	Dec. 11	
	Tebeth	1	. . .	" 17	

MAHOMETAN CALENDAR.

Year.	Month.			
1245	Rescheb 1st	. . . .	Dec. 26,	1829
	Schabân 1	. . . . .	Jan. 25,	1830
	Ramadân 1	. (Fast Month) .	Feb. 23	
	Schewwâl 1	. Bairâm . .	March 25	
	Dsû'l-kade 1	. . . .	April 23	

	Dsû'l-hedsche 1	May	23, 1830
1246	Moharrem 1	June	21
	Safar 1	July	21
	Rebî el-awwel 1	August	19
	Rebî el-accher 1	Sept.	18
	Dschemâdi el-awwel 1	Oct.	17
	Dschemâdi el-accher 1	Nov.	16
	Redscheb 1	Dec.	15
	Schabân 1	Jan.	14, 1831

The epoch of the Hegira (flight of Mahomet) is fixed at the 15th of July.

ERRATA.

Page 25, line 2, from bottom, for '1813' read '1814.'
" 29, line 31 from bottom, for '*St. John*' read '*St. James.*'
" 180, under 'Exports from Great Britain,' for '3,725,575,' read '1,925,575.'
" 195. Messrs. Gallatin and Preble, agents in the negotiation respecting the north-eastern boundary, are erroneously mentioned under *Russia*, instead of under the *Netherlands*.
" 228, line 21 from bottom, for 'Churches, 5,989,' read 'Churches, 598.'
" " line 14 from bottom, after 'Priests and Teaching Ministers,' insert '6.'

The Longitude of the sun, Aug. 4 (page 47), should be 131° 32′ 2″; and on the 13th of Oct. (page 48), 199° 38′ 8″.

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