

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

Coloured covers/
Couverture de couleur

Coloured pages/
Pages de couleur

Covers damaged/
Couverture endommagée

Pages damaged/
Pages endommagées

Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Cover title missing/
Le titre de couverture manque

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Coloured maps/
Cartes géographiques en couleur

Pages detached/
Pages détachées

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Showthrough/
Transparence

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Quality of print varies/
Qualité inégale de l'impression

Bound with other material/
Relié avec d'autres documents

Continuous pagination/
Pagination continue

Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

Includes index(es)/
Comprend un (des) index

Title on header taken from: /
Le titre de l'en-tête provient:

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Title page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

Additional comments: /
Commentaires supplémentaires:

Pagination is as follows: p. [557]-614, xli-xlvi.

This item is filmed at the reduction ratio checked below /
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

601/K/16/3
CJOS

New Series.

Whole No. XCVI.

BIBLIOTHÈQUE NATIONALE

THE

Canadian Journal

OF

SCIENCE, LITERATURE, AND HISTORY:



New Series
Institute of
L. I. I.
HALLOWELL

VOL. XV.

NUMBER VII.

CONDUCTED BY

THE EDITING COMMITTEE OF THE CANADIAN INSTITUTE.

OCTOBER, 1877.

TORONTO:

COPP, CLARK & CO., FRONT STREET.

1877.

PUBLISHED QUARTERLY.

CANADIAN INSTITUTE.

EDITING COMMITTEE.

GENERAL EDITOR, - - - REV. HENRY SCADDING, D.D.

R. RAMSAY WRIGHT, M.A., B. Sc., &c.

Prof. of Natural History, Univ. Coll., Toronto.

W. B. PEARMAN, M.A.

Classical Tutor and Dean, Univ. Coll., Toronto.

The CANADIAN JOURNAL is printed exclusively for gratuitous distribution among the Members of the Canadian Institute, and such Institutions and Societies as the Council may determine; but Members may purchase extra copies at 50c. per number, and Provincial Literary and Scientific Societies may obtain the Journal at the same rate, by an annual payment in advance.

* * * Communications for the Journal to be addressed to the General Editor, REV. DR. SCADDING, 10 Trinity Square, Toronto. Communications on general business of the Institute to be addressed to Prof. James Loudon, M.A., Corresponding Secretary; T. Heys, Esq., Librarian and Assistant Secretary, Canadian Institute, Toronto.

* * * A few sets of the CANADIAN JOURNAL (unbound), and back numbers to complete sets, may be obtained at reduced prices, by application as above.

MR. EDWARD ALLEN, 12 Tavistock Street, Covent Garden, London, W.C., has been appointed the English Agent for the Institute. All European communications are requested to be forwarded through him.

THE CANADIAN JOURNAL.

NEW SERIES.

No. XCVI.—OCTOBER, 1877.

SUPPOSED EVIDENCE OF THE EXISTENCE OF INTER-GLACIAL AMERICAN MAN.

BY DANIEL WILSON, LL.D., FR.S.E.

The determination of a so-called palæolithic period for Europe, with its rude implements of stone and flint, chipped into shape without the aid of any grinding or polishing process, and belonging to an era when the European man was associated with animals either wholly extinct or unknown throughout the historic period, naturally stimulates the curiosity of American archæologists in their own native explorations. But thus far only very slight and uncertain indications have seemed to point to any corresponding evidences of a like antiquity for American man.

Various causes combine to give to the researches of the American archæologist a character essentially distinct from that which marked the earlier stages of antiquarian investigation in Europe, and which stimulated its votaries to ally themselves with the students of geology in a renewed and more strictly scientific inquiry into the earliest traces of primeval man. In Europe the antiquary had long been engaged in the elucidation of ancient historic monuments, and had passed beyond these to a study of the ruder traces of primitive art, and of the physical characteristics of races which appeared to have preceded the historic nations of the Old World. The researches directed to the solution of the problems thus originated were followed up through mediæval, classical, Assyrian, and Egyptian

remains, to the very threshold of that prehistoric period which forms the debatable land between geological and historical epochs. Indeed, not the least significant fact in reference to the remarkable disclosures of recent years, is that some of the most characteristic drift implements—such as the spear-head found alongside of a fossil elephant's tooth in the vicinity of Gray's Inn Lane, London; or the large flint implements of the same type obtained from the drift of the Waveney Valley, at Hoxne in Surrey, underlying similar fossil remains,—had been brought under the notice of archaeologists, and deposited in the British Museum, upwards of a century before the idea of the contemporaneous existence of man and the mammals of the drift found any favour.

The conception of the comprehensiveness even of historical antiquity was long trammelled in Europe by a too exclusive devotion to Greek and Roman remains; but the historical relations of the American continent with the Old World are so recent, that for it the fifteenth century is the historic dawn; and anything dating before the landing of Columbus has seemed to be inconceivably ancient. Hence antiquarian speculations and historical research have been almost exclusively occupied on very modern remains; and the supreme triumph long aimed at has been to associate the hieroglyphics and sculptures of Central America, and the architectural monuments of Mexico and Peru, with those of ancient Egypt. But in all that relates to the history of man in the New World, we have to reserve ourselves for further disclosures. There are languages of living tribes of which *neither* vocabulary nor grammar has yet been constructed. There are nations of whose physical aspect we scarcely know anything; and areas where it is a moot point even now, whether the ancient civilization of Central America may not be still a living thing. The palæolithic disclosures of the French drift belong to our own day; and though the researches of the Rev. Mr. MacEnery in the famous Kent's Hole cavern, had fully half a century ago brought to light true palæolithic flint implements in the same red loam which contained bones of the mammoth, tichorine rhinoceros, cave-bear, and other extinct mammalia, it is only now that the true significance of the disclosures of the ossiferous caves of England is being recognized. America was indeed little behind Europe in the earlier stages of cavern research. It is upwards of forty years since discoveries in the ossiferous caves

of South America were communicated to the scientific world, which seemed to point to like conclusions in reference to the contemporaneous existence of man and the extinct mammalia of the cave deposits; and which even included what have been regarded by some as facts of special significance in reference to the hypothesis of evolution in its relation to the origin of man. A cabinet of the British Museum is filled with fossil bones of mammalia, obtained by Dr. Lund and M. Claussen from limestone caverns in the Brazils closely resembling the ossiferous caves of Europe. The relics were imbedded in a reddish-coloured loam, covered over with a thick stalagmitic flooring; and along with them lay not only numerous bones of genera still inhabiting the American continent, but also of extinct genera of fossil monkeys: the significance of which in relation to the hypothesis of transition through intermediate forms, from the lower primates to man, has since received ample recognition.

The comprehensive aspect which the prehistoric archaeology of Europe is now assuming, with its palæolithic and neolithic subdivisions, its post-glacial and possible inter-glacial and pre-glacial periods, has not been overlooked in America. Its relations to the geological aspects of the great drift formation of the northern continent could not, indeed, escape observation, and has naturally stimulated both the geologists and the archaeologists of the New World to aim at the recovery of corresponding evidence of its palæolithic era. Hitherto, however, the assumed proofs of any such palæotechnic American art, have been isolated and indecisive. A flint knife has been described, recovered from a depth of upwards of fourteen feet among the rolled gravel and gold-bearing quartz of the Grinell Leads, in Kansas Territory. Specimens of flint implements from the auriferous gravel of California were produced at the Paris Exposition of 1855. According to the geological survey of Illinois, for 1866, stone axes and flint spear-heads were obtained from a bed of local drift near Alton, underlying the loess, and at the same depth as bones of the mastodon and other fossil mammals. Other more or less trustworthy reports of discoveries of a like character have been published from time to time. Mr. Charles C. Jones, for example, in his *Antiquities of the Southern Indians*, notes the discovery of seeming palæolithic implements in the Nacoochee Valley, in the State of Georgia. There the river Chattahoochee flows through a rich auriferous region; and, in the search for gold,

the explorers have made extensive cuttings through the soil and underlying drift-gravel, down to the slate-rock upon which it rests. During one of these excavations, at a depth of some nine feet, intermingled with the gravel and boulders of the drift, three flint implements were found, measuring between 3 and 4 inches in length, and, according to the description of Mr. Jones, "in material, manner of construction, and appearance so nearly resembling some of the rough so-called flint hatchets belonging to the drift type, that they might very readily be mistaken the one for the others."

In some of the illustrations of American palæolithic art thus adduced, there are undoubted indications of an undue bias in favour of the interpretation of the evidence in the direction of greatest antiquity, even where, as in the case of an implement from Californian gravel drift, the specimen adduced was a polished stone plummet, altogether at variance with any palæotechnic processes hitherto disclosed.

But the most startling discoveries of primitive flint or stone implements were of minor importance, in comparison with the recovery of human remains from the auriferous drift of California. In 1857 Dr. C. F. Winslow produced a fragment of a human skull found eighteen feet below the surface, in the "pay drift" at Table Mountain, in connection with the bones of the mastodon and fossil elephant. A later disclosure brought to light a complete human skull, reported to have been recovered from auriferous gravel, underlying five successive lava formations. Professor Whitney, after inquiries which satisfied himself of the genuineness of the discovery, produced the skull at the Chicago meeting of the American Association for the Advancement of Science, in 1869, to the manifest delight of some who were prepared upon such evidence to relegate American man to a remoter epoch than the flint-folk of the Abbeville and Amiens gravel drift. It was subsequent to this startling production of a complete human skull, assumed to be found *in situ*, in the drift, that the highly polished plummet of syenite, in the form of a double cone perforated at one end, was produced before the Chicago Academy of Sciences, as an implement found at a depth of thirty feet, in the drift gravel of San Joaquin, California, by workmen engaged in digging a well. In this case also Professor Whitney appears to have had no hesitation in assigning it to the age of the mastodon.

That flint and stone implements of every variety of form, and every degree of rudeness of primitive art, abound in the soil of the

New World, has been established by ample proof. But along with this, it has ever to be borne in remembrance that its indigenous population has not even now abandoned such arts. So striking, indeed, is the analogy between the arts of the primitive cave men of Belgium and France, and those of the Hyperborean race of this continent at the present day, that Professor Boyd-Dawkins, in his *Cave Hunting*, thus sums up a review of them: "All these facts can hardly be mere coincidences, caused by both peoples leading a savage life under similar circumstances: they afford reasons for the belief that the Exkimos of North America are connected by blood with the palæolithic Cave dwellers." Such a far-reaching deduction, which would recognize in living tribes within the Arctic Circle of the American continent lineal descendants of the Cave dwellers at the head waters of the Garonne in Europe's mammoth and reindeer eras, is not one to be accepted as yet as more than a hypothesis. But the analogies thus recognized between the manufactured implements and weapons of tribes at present in occupation of Arctic America and those of the post-glacial if not of the inter-glacial races of Europe's prehistoric dawn, warn the archæologists of America of the danger of error from a too hasty assumption of a like antiquity for chance-found objects analogous in form to the river-drift implements of Europe.

But the *Report of the Peabody Museum of American Archaeology and Ethnology* for the present year, 1877, includes a special report by Dr. Charles C. Abbott, setting forth the discovery of data from which it is assumed that man may be shown to have existed on this continent during the process of formation of the great gravel deposit, now ascribed to glacial action, which extends from Labrador even as far south as Virginia; and has been found specially available for archæological research in the valley of the Delaware river, near Trenton, New Jersey.

The great importance which attaches to the discoveries now referred to is due to the fact that they are the result of a systematic research, based on the scientific analogies of European archæology. For it is important to bear in remembrance, in reference to such disclosures, that the evidences of the antiquity of European man do not rest on any number of scattered, chance discoveries of isolated illustrations of primitive art. On the contrary, the traces of primeval man are now successfully sought for on purely geological evidence. It is a

very simple matter that the archæologist should dig into a Celtic or Saxon barrow, and find there the implements and pottery of its builder. But English geologists, having determined the character of the tool-bearing gravel of the French drift, have sought for flint implements in corresponding English strata, as they would seek for the fossil shells of the same period, and with like success. Palæolithic implements have now been recovered in this manner in Suffolk, Bedford, Hartford, Kent, Middlesex, Surrey, and other districts in the south of England. So entirely indeed has the man of the drift passed beyond the province of the archæologist, that in 1861 Professor Prestwich followed up his *Notes on Further Discoveries of Flint Implements in Beds of Post-Pleiocene Gravel and Clay*, with a list of forty-one localities where gravel and clay pits or gravel beds occur, as some of the places in the south of England where he thought flint implements might also by diligent search possibly be found; and subsequent discoveries have confirmed his anticipations.

Dr. Charles C. Abbott has applied the same principle on this continent, and selecting the glacial drift of the valley of the Delaware River, New Jersey, for his investigations, has as he believes, been rewarded with a like success. The character of these tool-bearing gravel-beds of New Jersey are thus described by Professor N. S. Shaler: "The general structure of the mass is neither that of ordinary boulder clay, nor of stratified gravels, such as are formed by the complete re-arrangement by water of the elements of simple drift deposits. It is made up of boulders, pebbles and sand, varying in size from masses containing one hundred cubic feet or more, to the finest sand of the ordinary sea beaches. There is little trace of true clay in the deposit. There is rarely enough to give the least trace of cementation to the masses. The various elements are rather confusedly arranged; the large boulders not being grouped on any particular level, and their major axes not always distinctly coinciding with the horizon. All the pebbles and boulders, so far as observed, are smooth and water-worn; a careful search having failed to show evidence of a distinct glacial scratching or polishing on their surfaces. The type of pebble is the sub-ovate or discoidal, and though many depart from this form, yet nearly all observed by me had been worn so as to show that their shape had been determined by running water. The materials comprising the deposit are very varied, but all I observed could apparently with reason be supposed to have

come from the extensive valley of the river near which they lie, except, perhaps, the fragments of some rather rare hypogene rocks." As regards the distribution of those terrace deposits, Professor Shaler is still in doubt as to their origin, though he has made beds of this general character a subject of special study for eighteen years. They occur from Virginia northward to Labrador; and wherever found, correspond in structure. "The water-worn character of the pebbles," he remarks, "and the approximation to a level of the upper surface of the mass, make it plain that these beds were laid down beneath the water. The entire absence of organic remains in the mass proves that it was essentially a lifeless sea in which they were laid down. I am disposed to consider these deposits as formed in the sea, near the foot of the retreating ice-sheet, when the sub-glacial rivers were pouring out the vast quantity of water and waste that clearly were released during the breaking-up of the great ice-time." It is further to be noted, however, that on the one hand, in so far as this is to be regarded as a portion of the great glacial drift, it is not uniformly lifeless in the character of its contents; and, on the other hand, the deposits assumed to have been thus laid down in the depths of the ocean, appear to have been subsequently re-arranged or modified by other agencies, so as to suggest a reconsideration of the age assigned to the palæolithic remains which they have disclosed.

Such is the character of the geological formation in which Dr. Abbott claims to have successfully carried on researches leading to the discovery of examples of American palæolithic art analogous to those of the European drift. Professor Shaler says: "Along with the perfect looking implements figured by Dr. Abbott, which are apparently as clearly artificial as are the well-known remains of the Valley of the Somme, there are all grades of imperfect fragments, down to the pebbles that are without a trace of chipping;" and in the concluding sentence of a *Report on the Age of the Delaware Gravel Beds containing Chipped Pebbles*, he remarks: "If these remains are really those of man, they prove the existence of interglacial man on this part of our shore." Without any such cautious qualification, Professor F. W. Putnam, the experienced curator of the Peabody Museum, states in his report to the Board of Trustees: "From a visit to the locality with Dr. Abbott, I see no reason to doubt the general conclusion he has reached in regard to the existence of man

in glacial times on the Atlantic coast of North America." Such, then being the present state of this important inquiry, a review of the evidence thus far adduced cannot fail to be of interest.

The Report of Dr. Abbott is produced as an embodiment of the results of "investigations in the valley of the Delaware, made with reference to the occurrence of supposed palæolithic implements in the gravel beds facing that stream, based upon a series of careful examinations of the deposits in question, made at different points, together with a study of the surface soils, so far as these, of themselves and by their contained relics, bear upon the question of the origin and character of the specimens of stone implements taken from the underlying gravels." Keeping carefully in view the misleading traces of comparatively modern Indian remains in deposits geologically ancient, he remarks: "The chance occurrence of single specimens of the ordinary forms of Indian relics, at depths somewhat greater than they have usually reached, even, in constantly cultivated soils, induced me, several years since, to carefully examine the underlying gravels, to determine if the common surface-found stone implements of Indian origin were ever found therein, except in such manner as might easily be explained, as in the case of deep burials by the uprooting of large trees, whereby an implement lying on the surface, or immediately below it, might fall into the gravel beneath, and subsequently become buried several feet in depth; and lastly, by the action of water, as where a stream, swollen by spring freshets, cuts for itself a new channel, and carrying away a large body of earth, leaves its larger pebbles, and possibly stone implements of late origin, upon the gravel of the new bed of the stream."

But while thus recognizing the intrusion of relics of modern Indian workmanship at considerable depths in ancient gravels, Dr. Abbott claims to have discovered, independent of those, and readily distinguishable from them, though in the same underlying gravels, certain rudely shaped specimens of chipped stone, which have all the characteristics of the stone implements of palæolithic times. These are classified by him into a primitive form, to which he has given the name of "turtle-back" celt, with modifications of the same, and others approximating to the more familiar forms of the hatchet, the spear, and the scraper; while the deposit in which they occur is largely made up of ordinary smooth water-worn pebbles, varying in size from half an inch in diameter to boulders estimated to weigh

from one to twenty tons. Intermingled with those there are indeed fractured angular pebbles, some of the partially ground and polished surfaces of which may, as Dr. Abbott conceives, be the defacing results of later trituration on what were originally rudely chipped implements of the same class; but as a rule, the angular pebbles appear to be of natural formation.

Having thus discriminated alike between ancient and modern remains, and between natural and artificially chipped stones, Dr. Abbott proceeds to remark that having satisfied himself that the so-called "turtle back" celts, which are the most primitive form of the chipped implements of the gravels, really are of artificial origin, it is further noticeable that some of them are identical in shape with the ordinary forms of European drift implements. Among the specimens thus found, is one unquestionable spearhead-like implement of flint, which is not only specially selected as one of the three supposed American drift implements for engraving to accompany and illustrate the Report, but is adduced at the conclusion of the Report as one of the strongest confirmations of the deductions from the whole evidence. "Having shown," says Dr. Abbott, "as I think, that the deposit examined is glacial drift; and that the stone implements found therein could not have reached their present position at any time subsequent to the formation of their deposit; and *having placed beyond doubt, I think, the question as to whether these rudely chipped stones be of artificial origin or not, by the discovery of an unquestionable spear-point (fig. 3) associated with them*, I am led to conclude that the rude implements found in the gravel were fashioned by man during the glacial period, and were deposited with the associated gravels as we now find them." To this flint spear-head I shall accordingly refer with such care as the significance thus attached to its discovery requires.

Professor Shaler states that specimens of the chipped implements of stone are found in great plenty along the escarpments facing the Delaware. On one of his visits a search of three hours was rewarded with two examples of the most artificial character, in a locality previously carefully explored by Dr. Abbott. But he adds: "All that I have seen, with a single exception, both of the perfectly and the imperfectly chipped fragments, are made of a curious granular argillite, the like of which I do not know in place."

Bearing the above facts in remembrance, the exceptional character of the spear-like implement of flint above noted is specially worthy

of consideration; for it appears to be the only instance as yet observed of the occurrence of a drift implement of this mineral. Dr. Abbott remarks: "This specimen was taken from the gravel, at a depth of six feet from the surface, on the site of the Lutheran Church, Broad Street, Trenton, N. J. It was found lying *in situ*, in a shallow stratum of coarse pebbles, and clearly showed by its surroundings that it had not gotten in its position, where found, subsequently to the deposition of the containing layer of pebbles." When discussing the most likely objections to the conclusion affirmed by him, he asks: "Ought not these implements to be distributed equally throughout the area of the deposit?" and thus replies: "I have carefully considered this, and hoped to give a satisfactory reply by finding these same forms in widely separated localities; but in this I have failed, unless the exception of a *single rude spear-head* be accepted as indicative of a comparatively wide distribution of these palæolithic relics; this single specimen being taken from gravel, some distance from the river shore, and a mile from the bluff where the bulk of the collection was discovered. It must be remembered, however, that the gravel generally has not been systematically examined, and we do not know that these same implements are not abundant even elsewhere; although this I consider doubtful, inasmuch as they were probably not as numerous originally as the stone implements of the Indians subsequently were; and the majority would, I suppose, be broken and worn to ordinary oval pebbles, in the rubbing and grinding together of these and other fragments of rocks, while being transported either by ice or water."

While the Report was passing through the press, Dr. Abbott added the following note in reference to this single rude spear-head taken from the gravel: "Since the above was in type, I have been successful in discovering several well marked specimens, in many and widely separated localities, and am now led to believe that they will be met with in the gravel beds wherever occurring in Southern and Central New Jersey." It is not clearly apparent whether this note is designed to imply that these several well marked specimens of the spear-head type were also of flint. In a subsequent part of the Report, when referring to the character of the underlying soil, in relation to the lower accumulation of stone and gravel, where the large boulders occur *in situ*, he adds: "In such a stratum, immediately beneath a stone that would weigh at least half a ton, I found a well chipped spear-shaped implement." This, I infer, was not of flint, as the

description occurs in the text of the same Report in which the flint spear-head shown in fig. 3 is more than once referred to as "the only instance of the occurrence of a drift implement of this mineral." But the very fact that in the note above quoted the material is not specified seems to indicate an inadequate appreciation of the significance of the occurrence of implements of flint in a drift deposit of unstratified gravel and boulders, in which flint is wanting as a natural constituent.

The flint spear-head, as figured in the Report, cannot fail to attract attention from its obvious correspondence to a familiar type of the drift implements of France and England. But this is deceptive. It may be described as a pointed lanceolate implement presenting a near resemblance to the worked flint, fig. 420, of Mr. Evans' *Ancient Stone Implements of the Drift*, found at Rampart Hill, Icklingham, Suffolk: or to another (fig. 472) from Milford Hill, Salisbury. Both of these are somewhat more symmetrical; but the important element of difference is that of size. The Icklingham implement measures nearly 6 inches in length; while that of Milford Hill, characterized by Mr. Evans as a "a magnificent specimen," is upwards of $8\frac{1}{2}$ inches long. But the reduced scale upon which these and other undoubted examples of the drift implements of Europe are shown is apt to suggest a deceptive correspondence to the Delaware Valley implement, which is figured the full size, *i.e.*, barely $2\frac{3}{4}$ inches long.

But it is still more important to note the relation of the above analogous implements to the character of the English drift in which they were found. Icklingham is in Suffolk, in the centre of one of the most noted flint regions of the South of England, where even now the manufacture of gun-flints is still prosecuted to some extent. Milford Hill is in the vicinity of Salisbury, in Wiltshire, also in a flint-bearing region, where numerous implements of the same type have been recovered both from the gravel and the underlying chalk rubble, where they lay side by side with fragments of flint which retained their original colour. The localities are accordingly such as would encourage the search for flint implements, of which they have yielded numerous examples both of palæolithic and neolithic types. It is altogether different with the drift of the Delaware River. It appears to include deposits of gravel, sand, and boulders of glacial origin, varying considerably in mineralogical character;

obviously originally derived from a wide area of diverse geological characteristics; and subsequently re-arranged and intermingled by the action of water. Prof. Cook mentions, in the *Geology of New Jersey*, that "in the azoic and paleozoic regions of the State, the denudation has been very extensive; but it is not so easy to measure its amount, as it is not at all probable that the surface was smooth when the denudation, whose marks we now see, was in progress. That it must have been very great we may safely infer from the immense quantity of material which we can identify from the gneiss, the Potsdam sandstone, the magnesian and fossiliferous limestones, the Oneida conglomerate, and the whole series of upper Silurian rocks, which are now scattered all over the State quite to Cape May." Elsewhere, speaking "of this wear and movement of earth, gravel and boulders," the same writer remarks, "in some localities, as along the highlands from Boonton to Pompton, every notch in the mountain has a hill of drift opposite to it, on the open plain to the south-east." Hence the miscellaneous character of the transported material, including enormous boulders, and smaller fragments of granitic, hypogene, sandstone and limestone rocks; along with water-worn pebbles of the same granular argillite as the "turtle-back" celts and other characteristic stone implements of this Delaware River drift gravel, but no flint.

Of the artificial origin of the flint spear-head there can be no doubt. But there is no satisfactory evidence to justify its being classed as a true drift implement; and if the several well marked specimens of the same type so slightly alluded to in the subsequently appended note, are also flint implements, it still remains to be seen how far there is reason for regarding them as other than intrusive examples of a class of Indian implements of very common occurrence in more superficial deposits. For indeed, when Dr. Abbott is discussing the origin of specimens identical with the seemingly genuine drift implements of the "turtle back" celt form, but obtained on the surface of the talus at the foot of the bluff, he remarks: "In the talus which now covers much of this bluff, there is nothing but the uniform mass of rounded and angular pebbles, and with them such chipped implements as the specimens here figured." He accordingly follows up this statement with the pertinent question: "As already pointed out, why should this recently displaced material only yield the rudest forms of chipped stone implements, when the surface is

literally covered in some places with ordinary Indian relics; not a specimen of which has, as yet, occurred in this gravel?"

Excluding then, the spear-shaped flint implement or implements as of doubtful age, and inconsistent in mineralogical character with the deposit in which they were found: two other forms, both modifications of the same rude oval, with the two ends of equal breadth, include the characteristics of the entire series of these Delaware River gravel bed implements. The more perfect type is thus described by Dr. Abbott: "Figure 2 represents a more carefully wrought specimen of these rude implements, measuring nearly 5 inches in length, by $2\frac{1}{2}$ inches in average breadth; and less than 2 inches in greatest thickness. It is an excellent example of the form previously referred to as a 'turtle-back' celt. Of this specimen Prof. Wadsworth remarks: 'As far as can be told from examining its external surface without any fresh fracture, I should consider it to be made of very compact argillite. It shows weathering, and also a more recent fracture, which has weathered to some extent. I should consider it very doubtful if this could be formed naturally.' This specimen came from the bluff facing the river. It was taken out from a newly exposed surface, after making an excavation of fully three feet from the exposed face of the bluff; which was itself evidently the undisturbed gravel."

The other and more perfect form may also be described as only a more finished adaptation of the prevailing natural form of the discoidal and subovate rolled pebbles of the drift, in which naturally fractured specimens occur approximating in their shape to the so-called "turtle-back" celts; though Dr. Abbott says "it may at once be seen that it is, in every case, but an accidental resemblance. The outline is obtained, but not the subsequent chipping that gives the implement such finish as would make it desirable for use." Examples, however, do occur, of angular pebbles partially smoothed and polished, yet retaining in form and traces of fracture, in some cases at least, a marked resemblance to those clearly of artificial origin. "Such specimens," Dr. Abbott remarks, "may in fact have been fashioned by man, and only partially lost, by the polishing action of water and sand, those indications of artificially produced fractures, such as characterize the specimens here figured."

The following is the description which accompanies the figure of the ruder oval implement: "Figure 1 represents a specimen of these

rude implements, which, unlike the so-called 'turtle-back' celts, is distinctly chipped upon both sides, and has but a slight amount of secondary chipping. The cutting edges, however, are comparatively straight. This and other examples of the supposed stone implements have been submitted to Professor M. E. Wadsworth of Cambridge to determine their mineralogical character, as this has an important bearing on the question of the fracturing being of natural or artificial origin. Prof. Wadsworth remarks of this specimen: 'It is an argillite. It is highly indurated, with a conchoidal fracture, without cleavage, and fuses to a yellowish green or white glass which is feebly magnetic. The weathering which it shows could hardly have taken place except before it was covered with soil; it might possibly, but I think not probably, in a loose open gravel. It is not at all likely to be of natural formation.' It measures $3\frac{1}{2}$ inches in length, and was found in the undisturbed gravel of the bluff facing the River Delaware, at a depth of six feet from the surface.

Analogous implements worked in flint occur in English river drift, as shown in fig. 452 of Mr. Evans' *Ancient Stone Implements*,—an oval implement found in gravel dug at Hackney Down, to the north-east of London; and in fig. 476, one of several specimens, some of them more coarsely chipped, recovered from the Bournemouth gravel, Hampshire.

So far then it is noticeable that while the flint spear-head—one or more,—found at a depth of six feet, lying apparently *in situ*, in undisturbed gravel, is rather calculated to throw doubt on the palæolithic character of the implements of the Delaware river drift; the more abundant argillite celts accord with the drift gravel in which they occur, and cannot fail to awaken the keenest interest. In the Valley of the Somme, and in some of the English areas equally prolific in palæolithic flint implements, the archæologist is led back through successive stages of Frank, Saxon, Roman and Gaulish or British celt, to the neolithic arts of the lake dwellers of Switzerland, or of the Scottish and Irish crannoges; and so onward to the era of the cave men of an undefined post-pliocene age. The interval still unaccounted for between the oldest of those and the palæolithic era of post glacial man, according to any chronology hitherto applied, is indeed enormous. Yet such a series of stages of progression helps the imagination to realize in some degree the remoter past. But in the assumed revelations of palæolithic art in the North American drift, we pass abruptly from the savage Indian

who still claims to represent the aborigines of the New World, to the ruder savage of that primeval dawn when the ice age of our northern hemisphere had only begun to contract its sway over the northern continent.

The theory at which Dr. Abbott has thus far arrived may be thus indicated. Towards the close of the great ice age, the locality which has thus rewarded his search for specimens of palæolithic art marked the termination of the glacier on the Atlantic coast. Here, at the foot of the glacier, a primitive people, in a condition closely analogous to that of the Esquimaux of the present day, made their home, and wandered over the open sea in its vicinity, during the accumulation of this deposit from their melting glacier in the bed of the neighbouring ocean. But the drift gravel thus deposited has been modified by subsequent action. According to Dr. Abbott's conclusions, this glacial debris was deposited in open water, on the bed of a shallow sea. But while it is indisputably originally of glacial origin, it appears to have been subjected to subsequent modifications which materially affect the question of the post-glacial or inter-glacial character of the supposed evidences of art included in it. The disposition of the large boulders, and the absence of true clay in the mass, both suggest that it has undergone great changes since its original deposition as glacial debris. Both Professors Shaler and Pumpelly remark on the absence of ice scratches on the pebbles and boulders; and if this is to be accounted for by subsequent action of water, the included chipped implements prove by their unpolished surfaces that they are of more recent origin. Huge boulders, of the same character as those which abound in the underlying gravel, also occur on the surface. Their presence there is referred to by Dr. Abbott as throwing light upon "the occurrence of rude implements identical with those found in the underlying gravels, inasmuch as the same ice-raft that bore the one, with its accompanying sand and gravel, might well gather up also stray relics of this primitive people, and re-deposit them where they are now found." Accordingly, seeking in fancy to recall this ancient past, he says: "In times preceding the formation of this gravel bed, now in part facing the Delaware River, there were doubtless localities, once the village sites of pre-glacial man, where these rude stone implements would necessarily be abundant. . . . But assuming that the various implements fashioned by a strictly pre-glacial people have been totally destroyed by the crushing forces of the glacier, and that the specimens now produced were not brought

from a distance, may they not be referred to an early race that, driven southward by the encroaching ice, dwelt at the foot of the glacier, and during their sojourn here these implements were lost?" The assumption, it is manifest, is thus far based on imperfect, if not conflicting, evidence, which must be greatly augmented and carefully weighed in all its bearings. Nor need we wonder at the uncertainty manifested as to this discovery of a glacial, inter-glacial, or post-glacial man of America, when it is remembered that the result of the Conference on the Antiquity of Man, held recently by the Anthropological Institute of Great Britain, was on the whole either to throw discredit on the reputed cases of the occurrence of palæolithic remains in deposits older than the post-glacial; or to suggest that the river gravels containing palæolithic implements originated in their present condition at a later period than the glaciation of the districts in which they occur. Authorities of the highest character among the geologists and archæologists of Great Britain are at least equally divided on the subject; and the result of the Conference is,—if not absolutely to discredit the supposed evidence of palæolithic man, either in the caves or the river deposits of England older than post-glacial:—at least to demand much more conclusive evidence than any which has yet been adduced, before it can be accepted as a scientific fact that man existed in southern England and in France prior to the great ice age which wrought such enormous changes on the whole contour of Northern and Central Europe.

Professor Shaler purposely deals mainly with the geological aspect of the question, cautiously guarding his statements in reference to the age of "the specimens of supposed implements." He constructs a hypothesis at the close, "on the assumption that these pebbles owe their form to forces that antedate the deposition of the beds in which they are found." Thus—leaving to archæological experts to determine the artificial origin of the "supposed implements" found along the escarpments and imbedded in the drift of the Delaware Valley,—he arrives at the conclusion, that from its miscellaneous materials "pebbles of a peculiar composition were selected;" and after referring to evidences of a later change on the drift materials in which they lie, which lead him to the conclusion "that the pebbles were chipped before the waste which constitutes the mass was brought into its present position," he thus sums up: "If these remains are really those of man, they prove the existence of inter-glacial man on this part of our shore."

But the source of the later local changes, thus assumed to pertain to an inter-glacial epoch, has still to be determined; and with it the geological age of the drift gravel in its present condition. Professor Prestwich and others who discussed the age of the tool-bearing strata of Northern Europe, urged that their positions in the valleys show them to be more recent than the glaciations of the districts in which they occur; and the character of the drift gravel of the Delaware River Valley, seems still more open to a similar characterization. In the gravel of Long Branch, which according to Prof. Smock, the Assistant State Geologist, is of the same age as that at Trenton, rolled fragments of reindeer horns occasionally occur, and two skulls of the walrus have been found. Prof. Pumpelly has also visited the principal localities in which Dr. Abbott has carried on his researches; and both he and Prof. Shaler remark on the absence of ice scratches on the pebbles and boulders forming the deposit; and they apparently arrive at the same conclusion, that it is originally of glacial origin, but that its materials have been subsequently modified by the action of water, and so re-arranged with more or less of stratification. Dr. Abbott accordingly reverts to those deductions, communicated to him after the original draft of his Report had been written, and adds this comment: "Inasmuch as such subsequent action may have occurred long after the final deposition of the gravel as true glacial drift, the antiquity of the contained stone implements is proportionately lessened, and may be wholly unconnected with the glacial period, although the latest possible date that can be assigned to the deposition of the gravel in its present condition gives an antiquity to the implements found therein far greater than can be asserted of any previously found traces of man in North America, other than the discoveries of Prof. Whitney in California."

The subject is one which will not fail to receive ample consideration from those best qualified to test the full bearings alike of the archæological and the geological evidence. The researches have thus far been carried on with funds appropriated for the purpose by the Board of Trustees of the Peabody Museum of American Archæology and Ethnology; and the fruits of Dr. Abbott's labours are justly referred to in their annual report as probably the most important result attained in American archæology during the past year.

PROTOTYPOGRAPHY.

*Read by Rev. Dr. Scadding, at the Carlton Celebration of the Canadian Institute,
Toronto, June 18, 1877.*

We contemplate with some astonishment the facility with which little children acquire a language, the quickness with which they catch the right use of words, of peculiar expressions and idioms. And when at a later stage, the processes of reading, writing and ciphering are proposed to them, we are equally struck with the readiness with which, in most instances, these processes are mastered; a readiness such that after the lapse of a few months or years, skill in these arts seems to the possessor and to others the result almost of intuition.

The reason of all this is: the certainty, now proved by long experience, that there is in the human mind, naturally, a predisposition and preparedness to form language, first simple, then complex; and to make it, when thus formed, visible and permanent in some way. And similarly in regard to numbers; there is, without doubt, a like predisposition and preparedness, first to use them, and then to reduce them, for convenience, to visible shape.

Printing, it is manifest, is an ultimate development of these innate human tendencies. The germ of the discovery was in the Race; but its evolution was deliberate, and regulated by conditions; and so, in natural order, first came the blade, then the ear, then the full corn in the ear. In short, the history of printing is a repetition of that of language itself, of writing, of numbers, of painting, of music; each of which took centuries to attain to the degree of excellence in which we now are so fortunate as to receive them. Signet rings and stamps of all kinds were a species of printing apparatus. The scarabæi, made of hard stone, found in the tombs of Egypt, bear on their under side elaborate inscriptions, evidently intended to be transferred—and that, too, probably through the medium of a pigment—to the surface of fitting substances. The dies of coins and medals in

all countries involve the same idea—the transfer of inscriptions and devices by pressure. The Chinese, from an early period, have actually printed, laboriously carving in relief on separate tablets of wood the contents of each page about to be reproduced. And if such was a practice of the Chinese, we may be sure it was the practice also of other Asiatic peoples, equally, if not more civilized, but who have undergone greater vicissitudes.

In Europe, whether learned from Asia or devised independently, block-printing, just before the invention of the movable types, was well-known, though not practised as extensively as in China, nor with the same skill and elegance. The manufacture of playing cards was one common application of the process, but a more noble use of it was in the production of books, especially illustrated books, the picture and the description or moralization being all carved on the same wooden plate. The best known European example of an illustrated volume printed from carved blocks, prior to the invention of movable types, is the *Biblia Pauperum Prædicatorum*, a series of Scripture scenes rudely but boldly drawn, three on a page; the one in the middle from the New Testament, the other two from the Old; above and below are a pair of heads representing the prophets from whom respectively texts germane to the New Testament scene are quoted; all in Latin, with leonine descriptive verses subjoined; e.g., under a picture of the Adoration of the Magi: *Christus adoratur; aurum, thus, myrrha donatur*; and under the Burning Bush, *Lucet et ignescit, sed non rubus igne calescit*. Other remarkable early block-books are the *Speculum Humanæ Salvationis*, the *Ars Moriendi*, the *Ars Memorandi*, the *Historiæ Sancti Johannis Evangelistæ*, and various editions of Donatus, an elementary Latin grammar.

But up to 1440, or a little earlier, no one, as it would seem, while contemplating a carved block prepared for an impression, had as yet chanced to carry forward his thoughts just the one step which would have led him to the happy reflection: Seeing that all the words in a page are made up of letters again and again repeated, would it not be practicable, instead of carving perhaps all the letters of the alphabet two or three times over in each page, to make separate letters, which might be fastened together so as to form the words contained in one page; and then, after having done duty in the production of that page, be released, and combined together afresh for the production of another page; and so on repeatedly? At length, in 1440, or

a little earlier, the thought did start up in one mind at least, as will be narrated presently. The experiment was first made with wood. Separate letters were carefully carved, each at the end of a small block or stem, so shaped and trimmed as to fit in well with any of its fellows. The small blocks were strung together, we are told, by means of a strong thread passing through an eye or a hole deftly made in each of them. The result was encouraging; although the impressions produced were rude and uneven, and moreover, use speedily told upon the surface of the letter. Metal was thought of as a substitute for wood. Lead, as being most easy to manipulate, would of course be the first tried. Here again the effect of use was almost instantly to be seen. Then copper and tin were employed with respectable results. But the shaping and finishing of each letter by hand was tedious and costly. To save time and labour, small separate blocks were now cast with the view of having a letter cut in relief on the end of each; to cast the stem and the letter together in one piece was not yet proposed. Then came the idea of converting the perfectly carved letter, with its stem or shank, into a model, which, by being forced into sand or clay, or other fitting material, might form a mould, whence letters might be turned out at once in a finished state. Thus far the scale on which the experiment had been made was a limited one. A few sets of the alphabet sufficed for the trifles as yet attempted. By the use of the knife and file enough of accuracy in the shape and height of the small number of types required, was secured. But when now larger designs began to be entertained, it was seen that the process of trimming each letter by hand was altogether too slow, as well as too costly. If the great folios which the writing-rooms of the monasteries had hitherto supplied, were in future to be furnished to the public by means of the new process, it was evident that the supply of type must be plentiful and readily sustained, and that the method of finishing must accordingly be improved and expedited. Here was the crux of the first stage of the art of printing. The difficulty was at length most ingeniously surmounted. When now, a metallic compound was devised, combining a sufficiency of hardness with easy fusibility, and a suitable and satisfactory ink, the great invention, which had been taxing the wit of experimenters so long, was in effect complete.

It is singular that in the course of their long practice of block-printing the use of movable types should never have been thought of by

the Chinese, who, with their skill in minute carving, could so readily have fashioned them. Perhaps the immense number of characters used in the written language, and certain special methods observed in combinations, may have stood in the way; while in the West the invention was facilitated by the comparative fewness of the letters in the alphabets, and a consequent simplicity in the necessary combinations. A famous passage in a work of Cicero's on *The Nature of the Gods*, contained clearly the idea of words and sentences formed by selection from a mass of loose separate letters. In opposition to the philosophers who thought that the world and all that is therein had come from a fortuitous concourse of atoms, he says it would be just as easy to believe that "if a great quantity of the one-and-twenty letters, composed either of gold or any other material, were thrown upon the ground, they would fall into such order as legibly to form the 'Annals of Ennius.'" "I doubt," Cicero adds, "whether fortune could make a single verse of them." It is evident, had Cicero's mind happened for some reason to have been turned to the subject, one step further would have taken him to the thought of movable types to be employed in the reproduction of books. But with him the necessity of such an invention was not urgent. His numerous clever slaves, trained and highly accomplished as transcribers, were always at hand to supply him quickly with the volumes which he coveted so much and loved so well, whenever access for a short time could be obtained to a copy by loan from private or public collections.

Some years ago verbose disputes were rife as to the inventor of movable types. The distinctive pre-eminence of one out of two or more continental cities was involved in the issue of the strife. Haarlem, at the northern extremity of the Sea of Haarlem, a great sheet of shallow water so called, not far from the mouth of the Rhine, and Mayence, situated on the Rhine itself but far in the interior, each claimed the honour of having sheltered within its walls the man who struck out the happy thought. The question is now held to be settled by a kind of compromise. Great honour to him who conceived the idea of movable types and first employed them, however rudely; but as great, if not greater, to him who carried forward the idea, experimenting in metals and moulds, until the complex matrix and perfect type as we now see them were achieved. The invention, it is now generally believed, obscurely germinated at

Haarlem ; but it developed itself very nearly to perfection at Mayence, the latter city really deriving the discovery in a crude state from the former. The story as told by the typographical authorities of Holland, but disputed, and supposed to be refuted by circumstantial evidence elsewhere, is as follows : Lourens or Lawrence Janssoen was a well-to-do citizen of Haarlem ; according to some, a licensed victualler ; according to others, a xylographer or block-book printer, who prepared with his own hands the wooden tablets from which, after duly tinting them with pigments, he took his one-side copies, pressing down the paper or vellum on the characters, or the engraving, with the tips of his fingers. One day, idling away a leisure hour in one of the gardens or public walks of Haarlem, in company with his grandchildren, as he strolled along he fashioned with his pocket-knife, for their amusement, out of a piece of fresh bark casually picked up, a number of small letters, and then fastening them reversed on the surface of a piece of stiff paper, so as to form certain words, and turning the whole over on another piece of paper, he exhibited to his young friends a copy of these words produced by the stain of the fresh bark. At this moment of time, we are told, the notion of a wide application of the process just employed was begotten in Lawrence Janssoen's mind. The query then and there suggested itself to him : Instead of carving in solid mass the contents of each page of a book, as had hitherto been done, might not the letters be made separate and used in innumerable combinations ? I pass over details ; but some sets of movable letters were speedily constructed, first in wood and then in lead, and used with certain rude results, a few specimens of which are said to be in existence. The system adopted was kept secret in Lawrence Janssoen's household ; but at length an unfaithful employé, we are assured, purloined the newly-contrived appliances, and made off with them, first to Amsterdam and then across the country to the Rhine, and so to his former home, Mayence—having taken advantage, some say, of a holiday at Christmas time in the office at Haarlem, or, as others think, of a temporary suspension of business when the death of Lawrence Janssoen occurred in 1440.

Now John Gensfleisch (better known as Gutenberg) appears on the scene, who afterwards substituted copper and tin for wood and lead in the cutting of type, who even succeeded in manufacturing punches, and constructing moulds and matrices from which type was

cast never yet surpassed in beauty and accuracy of form, although, as we shall see, his, to some extent, was another case of the *sic vos non vobis* of old. It is recorded that the name of Lawrence Janssoen's unfaithful employé was John. No other designation is given him in the story, which is not so extraordinary, as surnames, in our sense of the term, were at the time not common. It was once conjectured that Gensfleisch was this man. But now the authorities show by a comparison of dates that this is improbable. They show at the same time that there were two persons of the same name, John Gensfleisch, senior, and John Gensfleisch, junior, uncle and nephew; and the runaway workman, they say, may have been John Gensfleisch, senior. The theft of material they think an angry Haarlem fabrication; it was simply the secret of the mode of manufacture and application that was carried off from Janssoen. On reaching Mayence, John Gensfleisch, senior, began in an obscure way the practice of the new art. Later he was joined in the same occupation by his nephew, John Gensfleisch, junior, who had now dropped the surname Gensfleisch (Gooseflesh), and assumed that of Gutenberg, from a property in or near Mayence once possessed by his family, which was noble by descent. We first hear of Gutenberg, or John Gensfleisch, junior, at Strasburg, further up the Rhine. Of an ingenious turn of mind, we find him employed there in working a new apparatus, an invention of his own, for polishing gems. With him in this undertaking are associated as partners, Hans Riffe, Andrew Drytzen, and Andrew Heilmann, who have each supplied him with money. When the particulars of the recent discovery at Haarlem reached him, probably through his uncle at Mayence, he at once set about making the experiment himself. He resolved to attempt the cutting and casting of a set of types for the reproduction of the *Speculum Humane Salvationis*, a book in considerable demand. His partners in the gem-polishing scheme again opened their purses to him, but strict secrecy in regard to the new undertaking was enjoined. Certain prying questions put by wives and others as to what was now engaging the attention of the partners so closely, were met by the reply that they were busy making looking-glasses for the approaching fair at Aix-la-Chapelle—an allusion to the meaning of *Speculum*, i.e. mirror or looking-glass. The letters were still fitted for use by individual manipulation. The slowness and general unsatisfactoriness of this process led Gutenberg to turn his attention

to the construction of better moulds; a study which resulted in the invention of the matrix by means of which type, cast perfect in face at once, and mathematically accurate in dimensions, has continued to be manufactured to the present time. On the death of one of the partners, Andrew Drytzehen, and a consequent lawsuit, the company which Gutenberg had formed was broken up. He now removed to Mayence, and took up his abode with his uncle there. Inspired by his typographical experiments at Strasburg, he conceived the bold idea of casting type, by his new process, for an edition of the whole Bible in folio, to be in every respect a fac-simile of the handsome manuscripts of the sacred volume to be seen, and, on occasion, purchased, at the monasteries. Much money was required for such an undertaking. The number of letters wanted for the 1282 folio pages of the proposed Bible was about 12,000 exclusive of ornamental capitals, double letters and abbreviations. John Fust, a rich banker of Mayence, was struck with Gutenberg's project, and advanced considerable sums in order that the work might be duly prosecuted. Not, however, without the proper legal security against loss on his part; as appeared after a time; for, just as everything was almost ready for the final issue of the great volume, we find Fust suddenly foreclosing on the typefounder and printer for non-fulfilment of the conditions of his bond. The courts of Mayence sustained the claim; the whole of the plant and contents of Gutenberg's office was taken legal possession of by Fust in 1455.

We now form the acquaintance of Peter Schoeffer, of Gernsheim. This is a young man who had been in the employment of Gutenberg, and was found to possess pre-eminent skill in cutting the punches for the types, plain and ornamental, required for the forthcoming Bible. Peter Schoeffer, in fact, had an educated taste as well as high skill. Like so many others who became fascinated with the new art at the outset, he was a scholar; only a few years previously he had been a student in the University of Paris. Fust perceived that he was a most eligible person to be put in charge of the printing establishment which had come into his possession. Such confidence had the shrewd banker now acquired in the prospective profits of printing and publishing, and in the superior competency of Schoeffer, that he proposed to him at once a copartnership on a suitable basis, and more; Schoeffer was to receive in marriage his daughter and sole heiress, Christina. Subsequent incidents need not be narrated. It

will be sufficient to say, that the great Bible soon saw the light. A sense of what was due to Gutenberg seems to have led the publishers to abstain from claiming the merit of the performance. It made its appearance without date or name of printer in the colophon; but it has since been universally known as Gutenberg's Bible. In modern times it is sometimes spoken of as the Mazarin Bible, from the particular copy of it discovered in the library of Cardinal Mazarin, which attracted the especial attention of bibliographers. Subsequent editions of the same work, not quite equal in grandeur and finish to the first, have appended to them the names of Fust and Schoeffer, as the printers conjointly. John Schoeffer, the son of Peter, and his successor as the head of the printing establishment, which long continued to flourish, frankly declared in a Dedicatory Epistle to the Emperor Maximilian of Germany, which he prefixed to an edition of Livy, that the whole merit of the fused metal types then come into use among printers everywhere was due to Gutenberg, and not to his father.

It is consolatory to find that Gutenberg was not crushed. In conjunction with one Nummeister, he established a press at Mayence, and issued works of importance. In 1465 the Archbishop of Mayence, Prince Adolphus of Nassau, made him one of the pensioned attachés of his household; and within the friendly walls of the archiepiscopal palace he breathed his last in 1468. This prince-archbishop was not desired by the people of Mayence, and he was obliged to oust, by force of arms, another archbishop already in possession, placed there by an anti-pope. In the process, the city was sacked, and all the industries of the place broken up, especially those connected with the printing-press. Adolphus may have wished to make some reparation for the ruin which he was the means of bringing on the city, by shewing kindness to the illustrious inventor. Gutenberg's remains were deposited in the Church of the Franciscans at Mayence. As to Fust, he died of the plague at Paris in 1466, at the age of 72, whilst on one of his business expeditions to that city in connection with the sale of his books. The stories of his unfavourable reception in Paris, and of attempts to palm off his Bibles as manuscripts, are now known to be groundless. The place of his sepulture in Paris was the Church of St. Victor.

On parting company with the four personages whose names are associated with the very first beginnings of the art of printing, it will

be of interest to note the portraits or other representations of them, that exist.

A fine engraving by Houbraken of Lawrence Janssoen, the Sacristan, may be seen in the *Origines Typographicæ* of Gerard Meerman, of Rotterdam. We behold a face slightly aged; long, emaciate, and smoothly shaven, with speaking thoughtful eyes, looking out at the spectator; a benevolent, intelligent, somewhat clerical countenance, surmounted by the soft four-cornered scholar's cap, usually seen on Erasmus. The authenticity of this portrait is not certain; and the heads of the statues erected to Janssoen at Haarlem have been moulded from some other likeness. In Meerman's work is given a fac-simile of a supposed early effort of Janssoen's with his movable wooden or lead types; a so-called *Horarium*, a little vade mecum for children, containing first the Alphabet, and then the Creed and Lord's Prayer, in Latin. The inscription placed by public authority in Janssoen's house at Haarlem is also given; *Memoriæ sacrum. Typographia, Ars Artium Omnium Conservatrix, hic primum inventa circa annum mccccxxiix (1428)*. Attempts have been made to show that Lawrence Janssoen of Haarlem lived after the Gutenberg era, and was not in any way connected with the art of printing. Advantage is here probably taken, as in so many instances, of identity of name in two different persons. The special pleading, having for its aim the complete annihilation of the Haarlem tradition, which is old, persistent and reasonable, rather overshoots the mark.

Of Gutenberg's form and presence, posterity derives an ideal image from the statue at Strasburg, where in one of the squares he is seen raised aloft; a thin spare figure in furred cap and ample furred gown; stepping forward with energy, the two hands holding out an open scroll, on which is the inscription *Et la lumière fut*—"And there was light." The face is long, care-worn and aged; a patriarchal beard descends upon the breast. In a public place in Mayence, there is another statue of Gutenberg, not so striking perhaps as that at Strasburg, notwithstanding the celebrity of the artist of the former, namely, Thorwaldsen. In Lacroix's *Historie de l'Imprimerie*, is the head by Julius in 1698, which is the prototype of the likeness presented by the statues.

The faces of Schoeffer and Fust are familiar to us from a medal struck in their honour, showing their profiles, conjointly with that of Gutenberg. A small copy of this group is to be seen in Johnson's *Typographia*, and in numerous other works.

The new Art of Printing spread rapidly throughout Europe. The learned class everywhere at once discerned its incalculable value. In numerous instances, scholars of the first order associated themselves with the Press, not simply as active patrons, but as editors and correctors, and even as manual participants in its work. And this continued to be the case for several generations after Gutenberg's day. In the monasteries many who had been trained as transcribers and illuminators learned how to set up type, and brought their skill and taste to bear on the printed, instead of the written, sheet. Copies of works on every subject, produced by the new method, began to be in general demand. The same hunger of the mind for more abundant and more satisfying food than it had been long wont to receive, seemed to be everywhere felt. Even in the aged, the mental appetite and curiosity of youth were re-awakened by a sight of the feast of fat things, to which the new art gave unlooked for access.

In the regions which we now style the Netherlands and Belgium, there were presses at work, before the close of the century which witnessed the birth of printing with metal types, at Utrecht, at Gouda, at Delft, at Louvain, at Deventer, at Alost, at Antwerp; and in Germany and German Switzerland at Cologne, at Bamberg, at Nuremberg, at Augsburg, at Spires, at Ulm, at Esslingen, at Frankfort, at Basle, and other important towns.

In France, at Paris, a press was set up in a room of the Sorbonne, in 1478, the services of three Germans, Ulrich Gering, Michael Friburger, and Martin Crantz, having been secured by Dr. Guillaume Fichet of the Sorbonne. Peter Keyser and John Stol, workmen under Gering, soon began printing on their own account, at the sign of the Green Rod, Rue St. Jacques. Some twenty years earlier (1458) the King, Charles VII., had endeavoured to introduce printing at Paris, but Nicholas Jenson, after acquiring the secret at Mayence, at the King's expense, went off with it to Venice, where he established a press for himself. In 1478, a printer with a French name, Jacques Lachet, brought out Sebastian Brant's *Ship of Fools* at Paris. In 1473, Guillaume Le Roy and Antoine Vincent were engaged in printing at Lyons; also Klein and Treschel in 1488 at the same place; and at Caen, Robert Macé in 1491.

From Germany especially, the adepts in the new art scattered themselves like so many apostles, far and wide, carrying with them

their practical skill, and sometimes even the implements of their business. In Rome, in Venice, in Milan, in Florence, in Naples, in Sicily, the earliest printers bear German names. At Rome, Conrad Sweynheim and Arnold Pannartz, in 1465 (settled first for a short time Subiaco, near by); and Ulric Hahn, who Latinized his name into its equivalent *Gallus*, a cock; Silber in 1490, who did the same with *his* name, making it *Argenteus*; and Andreas Fritag in 1492. At Venice, John of Spires, 1469, and his brother Vendelin; John Emeric of Udenheim and Erhard Radolt. At Milan, Waltdorfer of Ratisbon, better known as Valdarfer, printer of the *Decameron* of Boccaccio, a copy of which, with his imprint, sold at the Roxburghe sale in London in 1812 for £2,260. At Florence, John Petersen of Mayence and Nicholas of Breslau in 1477. At Naples, Sixtus Riesinger of Strasburg in 1471, Berthold Rying and others. In Sicily (at Messina), Heinrich Alding in 1478. In 1479, a Bible in Spanish was issued at Valencia in Spain by a German named Lambert Palmaert. (The first press in America was set up through the instrumentality of a German printer at Seville, John Cromberger. It is thought, however, that he never himself crossed the ocean, but committed the management of an establishment known by his name in the city of Mexico, in 1540, to an agent, a foreman of his, named Pablos.)

As in other departments of human activity, the practice of the new art soon began to descend from father to son through successive generations. One or two remarkable instances of such descent in the families of eminent printers will now be given; but I shall have to pass down occasionally into the sixteenth century.

And first, the Italian Aldi. These were Aldo Manuccio of Venice and his descendants. Aldo Latinized his name into Aldus Manutius, to which he sometimes added *Romanus*, as being a native of the Roman States. He was an accomplished scholar. He invented and largely used the Italic letter, which is said to be a careful reproduction of the handwriting of Petrarch, whose Canzoni and sonnets he printed in this type. He was the first to bring out books in octavo and duodecimo, a form quickly recognized to be an improvement on the cumbersome folio. He and successors of the same name issued editions of all the great works of classic antiquity, and of all the best Italian authors of their own time. Aldo Manuccio married the daughter of Andrea Torresani, a distinguished typographer, the

successor of Nicolas Jenson at Venice. The well-known badge of the Aldine press, the Dolphin and Anchor, was adopted from a medal of Titus Vespasianus, and is interpreted by Erasmus in his *Adagia* to denote the Latin *Festina lente*—"Be steady; take your time;" advice of use in literary work.

At Florence the Juntas or Giuntas were a typographical family flourishing for several generations. Bernard and Philip were eminent printers of this name. The device on the title pages of their books was the Lily or Fleur-de-lis.

At Basle, the Frobens, father and son, have a special interest as the friends of Erasmus, and the printers of his works. The house of John Froben was the home of Erasmus, when he took up his abode in Basle. John Froben's wife was the daughter of the learned Wolfgang Lachner, who like Marcus Heiland, Wolfgang Museulus, Ecolampadius, and Erasmus himself, was a corrector and reviser in Froben's office. Froben's son-in-law, Nicholas Bischoff (Episcopius), was also a notable printer. The *Utopia* of our own Sir Thomas More was printed at Basle by John Froben in 1519, and the *Encomium Morie* in 1522, the work in the title of which Erasmus amusingly plays on More's name. Holbein drew the illustrations which form so essential a part of this book. Many other works printed by Froben were also enriched by the genius of Holbein, who designed and executed elaborate and most beautiful borders and other ornamental woodcuts for them. The ready graver of Holbein has not only made his own countenance familiar to us, and those of Erasmus and More and other historic personages, but also that of John Froben, the great printer. Copies of Holbein's portrait of the latter may be seen well engraved in Knight's *Life of Erasmus*, and also in Woltmann's *Holbein and his Time*.

At Lyons, the printers Gryphii were famous for several generations: Sebastian, Antony, John, the last at Venice. The device on their title pages is a griffin and winged ball or globe.

At Paris, the illustrious typographic dynasty of the Stephani took its rise. In England the Stephani would be spoken of as the Stephenses. In their own vernacular they were Les Estiennes. The first of the name, eminent as a printer and scholar, was Henry, born at Paris, 1470. This Henry is styled Henry I. to distinguish him from Henry II., a successor a few years later. Francis, Charles, and Robert Stephens, also printers, were his sons. Robert was a

profoundly learned man. He publicly offered a reward to every one who would report to him an *erratum* in his publications. In 1531, he was appointed by Francis I. King's printer in the Greek and Hebrew languages. Henry II. was his eldest son and worthy successor. To an edition of Andrew Gellius issued by him he prefixes a Latin letter addressed to his own son Paul, in which he speaks of the household of his father, Robert: "All in it were learned," he says; "even the domestics understood Latin, and in some sort could speak it." His mother, Paul's grandmother, could understand persons speaking Latin, as readily as if they spoke French; his sister could speak the language, having learnt it not from grammars, but from use, just as French is learnt in France, Italian in Italy, and any other language in the country where it is spoken. Notable works published by Robert Stephens were *Bibles* in Latin, Greek, Hebrew, and French, and a Latin *Thesaurus* in three volumes folio. He dismissed from his edition of the classics all the contractions inherited from the MSS. A marvellous perfection marks all the productions of his press which were supervised wholly by himself. De Thou said the labours of Robert Stephens had done more for the honour and glory of France than all the high deeds of her warriors. Robert married the daughter of Josse Bade of Asch, near Brussels, another eminent printer usually spoken of by his Latin designation, Jodocus Badius Ascensius. Michel Vascosan and Jehan de Roigny, two other great French printers, also married daughters of Josse Bade. Henry II.'s *Greek Thesaurus* in four volumes folio (1572), is like his father's *Latin Thesaurus*, a wonderful monument of human labour and perseverance. The story of the shameful way in which John Scapula, an employé of his, filched the substance of this *Thesaurus* and constructed out of it the one-volume *Lexicon* (1579), formerly so familiar to English scholars, and so often reprinted, can only here be glanced at. The learned Isaac Casaubon married a daughter of Henry Stephens.

In the line of the Koburgers (properly Wolgemuths), at Nuremberg, there was an Anthony I. and an Anthony II., with a John, a Melchior, and others.

At Antwerp, Christopher Plantin founded a long-lived printing-house. His *officina* was one of the wonders of Europe and the chief lion of the city. More fortunate than some of the great printers, Plantin accumulated wealth, and lived in princely style, indulging his fine tastes, and bequeathing at his death, in 1598, a magnificent

private library to his grandson Balthasar Moret, his heir and successor. Among the products of Christopher Plantin's press was a polyglot bible in eight volumes folio, published under the auspices of Philip II. of Spain.

Finally, I name the Dutch Elzevir family, members of which, between 1583 and 1683, obtained great celebrity as printers. The first Elzevir (or Elsevier), Louis, began to print at Leyden in 1583. His brothers, connexions and descendants, were established as printers in various places in Holland, but chiefly at Amsterdam and Utrecht. In this dynasty Louis I., Louis II., Louis III., are to be distinguished; other Elzevir names are Matthew, Ægidius, Jodocus, Bonaventure, Daniel, Abraham, and Peter. The list of the Elzevir publications, embracing the whole range of literature ancient and contemporaneous, including works in Hebrew, Syriac and Arabic, fills seven octavo volumes. The Elzevir print is quickly to be recognized on account of a certain pleasant openness and clearness in the fashion of the type. The foolish story about the use of silver type seems to have arisen out of the sound of the name Elzevir or Elsevier. It is said that some of the Elzevirs employed female compositors. (The device of a printer in the *officina Elzeviriana* at Leyden in 1617 was an open music-book, with notes: his name was Godefridus Basson.)

Although in the course of the preceding narrative I was brought more than once into the neighbourhood of Bruges, I reserved my mention of that city until now, in order that in association with its name I might introduce our own William Caxton.

The city of Bruges, situated not many miles inland from the port of Ostend, and connected with that port by a canal, was, during the era in which we are interesting ourselves, the capital of the Dukes of Burgundy, who held there a splendid court. These dukes, in addition to their own proper domain, Upper Burgundy (Franche Comté), had by degrees become lords also of other vast territories. They were nominal vassals of the German Emperors and of the French Kings, but far surpassed both these potentates in resources and real power. Under the German Empire they held Burgundy proper, East Flanders, Luxembourg, Alsace, the duchies of Brabant and Limberg, the marquisate of Antwerp, the counties of Hainault, Holland, and Zealand; to the French King they did homage for the counties of Ponthier, Amiens, Vermandois, Nevers, and Namur.

From 1419 to 1467 Philip the Good was the reigning duke, a munificent patron of art and promoter of commerce and industry.

To commemorate the perfection to which woollen manufactures had attained among his people, he instituted an order of knighthood—that of the Golden Fleece. A great lover of learning and literature, he maintained within the walls of his palace a staff of skilled copyists and illuminators.

William Caxton was brought into intimate relations with this Philip the Good, being at Bruges after 1463 what we should now call British Consul—a public agent stationed there, charged with the care of English interests, chiefly commercial, in the dominions of the Duke of Burgundy; technically, “Governor of the English Nation.” As a man of literary tastes, Caxton was held in especial esteem by the duke.

In 1467, Philip the Good died. His successor, Charles the Bold, whose reign proved disastrous to himself and his dominions, was no professed patron of letters. It happened, nevertheless, that Caxton’s relations with the Burgundian court became now even more intimate than they had been under Duke Philip. The new duke, soon after his accession, brought home as his bride the Princess Margaret, Edward the Fourth’s sister, who forthwith evinced a great regard for her countryman Caxton, now a polished courtier as well as an experienced man of business. She attached him to the court as one of the gentlemen of her household. It would seem that about this time Caxton resigned the post of “Governor of the English” at Bruges, wearied perhaps with the anxieties of the post, growing more and more serious during a troubled period, and glad to withdraw into a position likely to afford him more leisure for the literary pursuits which had become so fascinating to him.

In 1470, reverses sustained by the Yorkist party in England obliged the King, Edward IV., to fly the country, accompanied by several of his adherents among the nobles; and the court at Bruges was the temporary resort of the fugitives. After the lapse of five or six months, Edward regained his throne. During this short sojourn of Edward abroad, Caxton became personally known to him and his friends through the Princess Margaret; and it is believed that this circumstance, together with public changes in progress at Bruges and elsewhere, ultimately led to the removal from Flanders to England, which took place a few years later. Caxton may have deemed the time opportune for the introduction of Printing into England. As a

commercial venture he must have seen the probability of its success. The capabilities of the novel invention for the rapid multiplication of books in request among the learned were self-evident, and he would feel sure of the royal countenance and the patronage of influential friends in the enterprise. But first it was expedient that he should make himself in some degree practically acquainted with the art, and with the economy of a printing establishment. Many intelligent men had, to his knowledge, passed over with comparative ease from other avocations to that of the printer. Why should not he? While yet acting as British agent, he had been in the habit of utilizing his intervals of leisure by translating into English a French work, entitled *Le Recueil des Histoires de Troyes*, a paraphrase of the leading passages of the *Iliad*, written by Raoul le Fevre, formerly chaplain and secretary to Philip the Good, and probably a personal friend of the translator. After various interruptions he at length completed his English version of the work, encouraged in his undertaking by the Princess Margaret, "his redoubted ladye," who deigned to suggest some improvements in the phraseology. It was begun at Bruges, he tells the reader, continued in Ghent, and finished in Cologne. And farther he more specifically states: "It was finished in the time of the troublous world, and of the great divisions being and reigning as well in the realms of England and France, as in other places universally throughout the world, that is to wit: in the year of our Lord one thousand four hundred and seventy-one." Of the translation thus continued and ended in the midst of inauspicious surroundings, Caxton proceeded to supply copies in manuscript to his mistress the princess, and his other English-speaking friends. And it was while personally engaged in this rather wearisome employment that his plans for the future took definite shape, and the resolution was formed to master for himself the new art of printing, and to issue by means of it an edition of the English version of the *Recueil* for the English market.

At this juncture we become acquainted with Colard Mansion, a Frenchman settled at Bruges. Colard Mansion was a clever engraver, calligrapher and illuminator, who had been in the pay of Duke Philip the Good, but who had betaken himself to the practice of the new art, and had set up a press in a small room over the porch of the church of St. Donatus at Bruges. Here also he manufactured with

skill the punches and matrices required in type founding, and put them successfully to their proper uses. It is conjectured that the fine founts of his office were in the first instance cut and cast at the command and cost of the late munificent literary duke. Caxton put himself under the tuition of Colard Mansion, handsomely recompensing him for his pains, learning the new art and mystery by setting up with his own hands the type of the English *Recueil*, and partaking in the manual labour of its actual imprinting at Colard Mansion's press. "I have practised and learned," he says, "at my great charge and dispende, to ordain the said book in print, after the manner and form as you may here see." A further memorandum informs us that the printing was completed "on the last day of March, 1474." A monogram or cipher is seen in several of the books afterwards printed by Caxton in England, consisting of the Arabic numerals 7 and 4 reversed and interlaced, placed between the initials of his name. On either side, in some instances, certain marks are to be seen which have been thought to be respectively an *s* and a *c*; but they are more probably only flourishes in the ornamentation of the border. If, however, the *s* and the *c* be insisted on, their interpretation may more plausibly be *sine calamo* than *Sancta Colonia*. The whole device will then be a cryptic commemoration of the time when Caxton first embarked in the novel avocation of issuing books to his friends and the public, *sine calamo*, "without the aid of the pen." Thus the first old printers were wont to boast in their colophons; and Caxton also himself thought good to remark at the close of the *Recueil*, that the work in the reader's hands was "not written with pen and ink as other books be:" an observation not altogether needless for the superficial observer, as the types used in the impression are the closest possible imitation of a local style of hand-writing.

The bulk of the printed edition of the English *Recueil* would no doubt be shipped off to an agent in London. Persuaded that he had struck a profitable vein, Caxton now completes another translation from the French, *The Game and Playe of the Chesse*, a work chiefly compiled by one Jehan de Vigny from the Latin work of J. de Cessolis, *Liber de ludo Scachorum*. This translation was committed to type as speedily as possible in the office of Colard Mansion, Caxton himself taking some part as before in the manual work. The book was dedicated to the King of England's brother, the Duke of

Clarence, and sent off at once to London. (About the same time Colard Mansion put forth an edition of the French work, on his own account, using—whether his own or ducal property—the identical founts employed in the English version.)

The work next taken up for translation, with a view to publication, seems to have been, *The History of Jason*, another of Raoul le Fevre's productions. But this was not printed until after the removal to Westminster, as is said to be proved by the type. An edition of the original French was, in this case also, subsequently printed by Colard Mansion. (The idea that Caxton learned and practised printing at Cologne, arose from a casual expression in the *Recueil*, taken wrongly by Wynkyn de Worde to mean that the book was printed there, whereas Caxton simply says that the translation into English was finished there.) It is entitled *The Book of the Whole Life of Jason*. It was from the pen of the same Raoul le Fevre, who wrote the *Recueil*, and in some sort it celebrates the institution of the Order of the Golden Fleece by his first patron, Duke Philip. The translation had probably been some years in hand. With his usual policy, Caxton dedicates the book to the eldest son of the King of England, the Prince of Wales, "our to-coming sovereign lord," as he speaks, then only four years old. He does not presume, he says, to dedicate the volume to the king, inasmuch as he doubts not that he who had permitted himself to be enrolled in the said Order of the Golden Fleece, was already in possession of the work in French; but he presents it to the prince that he may "begin therein to learn to read English." In Halliwell's *Letters of the Kings of England* are preserved the instructions given by Edward IV. to Earl Rivers, as tutor of his son, the Prince of Wales, in 1475; and amongst them it is directed that there should be "read unto him such noble stories as behoveth to a prince to understand and know." The *Book of Jason* may have been one of the noble stories used in this way in the education of the prince. In the prefaces to several of his publications, Caxton indulges in some personal gossip. In the prologue to the *Jason* he falls, consciously or unconsciously, into the vein of Froissart, and describes some arras hangings which he remembers seeing in the hall of Hesdin Castle in Artois, executed and placed there by order of Philip the Good, on which were depicted the exploits of Jason when in quest of the Golden Fleece.

No room is left for doubt as to the place of issue of the next volume of Caxton's which I have to notice, *The Dictes and Sayings of Philosophers*. He had now for certain severed the ties which bound him to Flanders and the Rhineland, after a residence there of over thirty years; and had transferred himself to the neighbourhood of the great city where his youth had been spent. Undeterred by the approaches of age, he resolved on a new career, and brought with him from abroad a full equipment as printer, his founts of type being cut and cast for him, as their appearance sufficiently proves, by Colard Mansion at Bruges. With him also came a staff of experienced assistants. On the title page of the *Dictes and Sayings* we read: "Imprinted by me, William Caxton, at Westminster, in the year of our Lord mccccxxvii." Here at last we have the three desiderated elements of certainty, and the tangible date is supplied, by means of which the present year, 1877, has been distinguished as the four hundredth anniversary of the introduction of printing into England. The author or translator of the volume now issued was no less a personage than the Queen's brother, Lord Antony Woodville, Earl Rivers, governor, as we have already seen, of the Prince of Wales. The astute printer contrives to keep in the sphere to which he had become habituated at Bruges. By cultivating the good graces of the higher powers he secures their patronage, and anticipates, doubtless, the solid advantages likely to accrue therefrom to his several ventures. In 1484 we have him dedicating a work to Richard III., who had then obtained possession of the throne—*The Book of the Order of Chivalry*. In the preceding year he had put forth the *Legenda Aurea, or Golden Legend*, a work probably known to be acceptable to Richard. In the life of St. George of England in this book, he says that in the Chapel of St. George, at Windsor, the heart of St. George is preserved, a precious relic presented to Henry V. by the Emperor Sigismund.

In 1485, Henry VII. assumed the crown, and Caxton takes an early opportunity of presenting to him in person a copy of the latest product of his press, the *History of Charlemagne*. In this year he prints Sir Thomas Malory's *Morte d'Arthur*, a compliment, we may be sure, to the Tudors, who prided themselves on their descent from Arthur through the Welsh princes. In 1489, he translates and prints at Henry's express desire, the *Feats of Arms and Chivalry*, a work

by Vegetius, and in 1490, he dedicates a translation of the *Æneid* of Virgil to Henry's eldest son, Arthur, Prince of Wales. Henry VII. had derived from his mother, "the saintly Margaret of Lancaster," a love of books and learning. This royal lady, of whom I shall speak again, patronized Caxton, and at her command, as he himself informs us, conjointly with that of the Queen, he printed, also in 1490, the *Fifteen Oes*, a volume of prayers. He had previously printed two more translations by the hand of Lord Rivers, for whom he printed the *Dictes and Sayings*. More than sixty books, besides those named, from the press of Caxton, including the *editio princeps* of Chaucer, are to be seen in the libraries of England or the Continent. For an account of these, recourse must be had to the usual writers on bibliographical subjects. The particular spot in Westminster where Caxton first set up his press is known from an extant advertisement of his. It reads as follows:—"If it please any man, spiritual or temporal, to buy any Pies [pica prayer-books] of two and three Commemorations of Salisbury Use, imprinted after the form of this present letter, which be well and truly corrected, let him come to Westminster, into the Almonry, at the Red Pale, and he shall have them good-cheap." He appends a brief request to the reader or binder in Latin, *Supplico stet cedula (schedula)*, "Don't destroy this slip;" and then we have his cabalistic W. C., etc. The Pies were Calendar-tables (also called Picas), with rubrical directions, relating to church-services on saints' days; and the "Two or Three Commemorations" spoken of were an accumulation, so to speak, of two or three observances in one day, in which case certain combinations and omissions of proper collects were, for brevity's sake, permissible. The Red Pale was an escutcheon or shield bearing a conspicuous red stripe drawn vertically down its middle, set up over the door as a sign. The Almonry or Aumbry was a portion of the Abbey buildings now destroyed, forming part of the precinct towards the western entrance. It was the place where the doles of the monastery were wont to be distributed to the poor. Some disused apartments here, together with the dismantled chapel of St. Anne near by, were, it is supposed, leased by the Abbey authorities to Caxton. The Abbot of Westminster at the time was John Esteney. Caxton inscribes none of the productions of his press to him; but in his prologue to the *Æneid* he mentions a reference made by the Abbot to himself

on one occasion for assistance in deciphering an antiquated English document.*

In 1485, the presses were removed from the Monastery buildings to premises of Caxton's own in King Street, Westminster. In 1491, Caxton died. He was buried in the churchyard of St. Margaret's Church, close to the Abbey.

Caxton's career was a prosperous one, and probably accompanied with much personal happiness, actively and usefully employed as he

* At the present day, Caxton's English requires, for its ready comprehension, some of the same kind of assistance from a friendly hand which Abbot Estenev sought to obtain from Caxton himself, in regard to English held to be "old" in the reign of Henry VII. I give, as a specimen, the preface to a translation of a French work, entitled "Cato," a paraphrase of the so-called Distichs of Cato, much used in the mediæval schools. We gather from this "prologue or proheyme" what were Caxton's impressions of the rising generation of the city where his own youth had been passed some forty years previously. The translation was published in 1483. Thus the work is introduced :

"Unto the noble, auncyent, and renommed cyte, the cyte of London in England, I, William Caxton, cytezeyn and conjurye of the same, and of the fraternyte and felawshyp of the mercerye, owe of ryght my servyse and good wyll, and of every dute am bounden naturally to assiste, ayde, and counsell, as ferforth as I can to my power, as to my moder, of whom I have receyved my nourture and lyuyng, and shall praye for the good prosperite and polceye of the same duryng my lyf, for as me semeth it is of grete nede, bycause I have knowen it in my yonge age moche more welthy, prosperous, and rycher than it is at this day, and the cause is, that there is almost none that entendeth to the comyn wel, but only every man for his singuler prouffyte. O whan I remember the noble Romayns, that for the comyn wel of the cyte of Rome, they speute not only theyr moervable goods, but theyr bodyes and lyves in jeopardy, and to the deth, as by many a noble ensample we may see in the actes of Romans, as of the two noble Scipions, African and Asyan, Actilius, and many other; and amonge al other the noble Catho, auctor and maker of this booke, whiche he hath left for to remayne ever to all the peple for to lerne hit, and to knowe how every man ought to rewle and governe hym in this lyf, as well for the lyf temporall, as for the lyf spyrytuel. And, as in my judgment, it is the beste booke for to be taught to yonge children in scole, and also to peple of every age, it is full conventent yf it be wel vnderstanden. And bycause I see that the children that ben borne within the sayd cyte increase, and prouffyte not like theyr faders and elders, but for the mooste parte, after that they ben comeyn to theyr parfight yeres of discrecion, and rypenes of age, how well that theyre faders have left to them grete quantite of goodes, yet scarcely amonge ten two thryne. I have secu and knowen in other londes, dyuers cytees, that of one name and lynage successively have endured prosperously many heyres, yea v. or vi hundred yere, and some a thousand; and in this noble cyte of London, it can vnnethe contynue unto the thyrde heyr, or scarcely to the second. O blessyd Lord, whan I remembre thys I am al abashed; I can not juge the cause, but sayre, ne wyser, ne bet bespoken children in theyre youghte ben nowher than ther ben in London; but at their ful ryppng there is no carnel ne good corn founden, but chaff for the moost parte. I wote wel there be many noble and wyse, and prove wel, and ben better and richer than ever were theyr faders; and to thende, that many myght come to honoure and worshyppe, I entende to translate this sayd booke of Cathon, in whiche I doute not, and yf they wyll rede it, and undrstande, they moche be the better conne rewle themself therby; for among all other bookes this is a singular booke, and may well be callyd the regment, or governaunce of the body and sowle. There was a noble clerk named Pogius, of Florence, and was secretary to pope Eugenyne, and also to pope Nycheolas, which had, in the cyte of Florence, a noble and well stuffed librye, which all noble straungers comyng desyred to see, and therein they fonde many noble and rare bookes, and whan they had axyd of hym which was the best booke of them alle, and that he reputed for the best, he sayd, that he held Cathon glosed for the best booke of his lyberary," &c.

constantly was in mind and body. But his times, as we have seen, were full of perturbations. What with popular risings, war with France, contests for the throne between the houses of York and Lancaster; and, on the Continent, the French determination to expel the English, the struggles of the Kings of France against their nobles, the rivalries and feuds between Louis XI. and Charles the Bold, and the German Emperor, no one of any class was sure of dying peacefully in his bed. Caxton, in the case of many of those with whom he was brought into close relations, must have been impressed with the miseries and perils attendant on high position, and the mutability of human affairs generally. It is sad to recall the fates of several of the personages whose names are associated with the books which he printed. The Duke of Clarence, to whom the first edition of *The Game and Playe of the Chesse* was dedicated, was secretly put to death in the Tower, plunged, it was currently reported, into a butt of Malmesey wine. The Prince of Wales, addressed in the *Book of Jason*, was suffocated along with his young brother, also in the Tower; and the Earl of Rivers was ruthlessly beheaded at Pomfret. For Richard III., slain on the field of Bosworth, we feel less compassion. The other young Prince of Wales, Arthur, son of Henry VII., to whom the *Æneid* was presented, never ascended the throne.

Caxton is one of the few characters in the history of England who have moulded themselves into shape with some distinctness in the imagination of most Englishmen. He lives and moves, a real person in their minds, individually recognisable, like Alfred, like Chaucer, like Shakespeare himself. And this in spite of meagre data. A few autobiographical facts casually supplied to us in addresses to the reader, scattered about in certain of his publications, a few allusions in contemporary annals, an occasional mention in legal and other documents of the time accidentally preserved, these are the only materials out of which to construct a biography of Caxton. And then we have the portrait which has come down to us as his, which, when once we have seen, we do not forget: a peaceful unmilitary face; large inquiring eyes looking out from under a slightly perplexed brow, a well-formed nose, plentiful hair and beard, grey and curling; lips making inquiry along with the eyes; the whole surmounted by quaint, almost oriental head-gear, the incipient modern hat nevertheless, with narrow brim turned up all round, retaining, however, still a portion of the hood *à la* Henry IV., with liripipe

dangling on one side. (For the instructive story of Caxton's childhood in the Weald of Kent, and his youth and early manhood in the city of London, I must refer you to the books which are in every one's hands.)

It is hardly necessary to add that the *Caxtoniana* of Lord Lytton are only remotely connected with our Caxton. They are a series of pleasant essays, whose subjects were suggested to the writer from time to time during the composition of *The Caxtons* and *My Novel*. The supposed author of these fine fictions, Pisistratus Caxton, narrates, we shall remember, the very serious differences between his father Austin and his uncle Roland, on the unsettled point as to whether they came from the branch of the ancient Caxtons whence the great printer sprung, or from that to which Sir William de Caxton belonged, slain in the battle of Bosworth field, fighting for Richard III. Considering the wide range of the *Imaginary Conversations* of Walter Savage Landor, it is singular that among the interlocutors none of the prototypographers are to be met with. With his great dramatic insight, and perfect mastery of precise, accurate English, Landor, had he chosen, might have constructed much admirable discourse between Gutenberg and Adolphus of Nassau, for example, or between Colard Mansion and the Seigneur de la Gruthuyse, or between Caxton and Earl Rivers, or Caxton and Abbot Esteney. Charles Knight, at the close of his *Memoir of Caxton*, presents us with a scene, not badly conceived, in which Wynkyn de Worde, Richard Pynson, William Machlinia and Lettou are the dramatis persone.

Caxton's foreman, Wynkyn de Worde, succeeded to the establishment in King Street, Westminster, and carried on printing operations there until 1497, when he removed to Fleet Street, at the sign of the Golden Sun. He was a native of Holland, and had accompanied Caxton from Bruges. He improved on his master's style and adopted the Roman type. The issues of his press were numerous and multifarious, including even the Koran "of the false necromancer Mahomet," as the phrase is on the title page. The first edition of Sir John Maundeville's *Travels* was also issued by him. Four hundred and ten works or editions are enumerated as coming from Wynkyn de Worde's press. He put forth repeated editions of the *Scala Perfectionis, or Ladder of Perfection*, a religious book printed at "the command of Margaret Beaufort of Lancaster, the King's

mother," who also, as we have seen, was a patroness of Caxton; and on the occasion of the death of this princess the funeral sermon pronounced over her remains by Fisher, Bishop of Rochester, was printed at the press of Wynkyn de Worde. This interesting printer died in 1534, and was buried in St. Bride's, Fleet Street.

Another assistant of Caxton's, Richard Pynson, a Norman by birth, but naturalized in England by letters patent, had established himself independently as a printer, first, just outside Temple Bar, and secondly, in Fleet Street, at the sign of the George. Lady Margaret, the king's mother, patronized him likewise, as also did her son Henry VII. In his colophons Pynson styles himself "Printer unto the King's noble grace." After the death of Henry, his son and successor Henry VIII. continued to him the same title, and Pynson had the honour of printing the king's treatises against Luther which acquired for him the title of Defender of the Faith. Among the 215 works or editions issued by Pynson were the *Chronicles of Froissart*, and the *editio princeps* of the *Promptuarium Parvulorum*, a famous Latin-English dictionary. Pynson died in 1529. Two other printers said to have been brought over from the Continent by Caxton afterwards became distinguished on their own account, Letton and John Machlinia.

It is not my intention to note with minuteness the English typographers who came after Caxton and his co-labourers. Between 1477 and 1500 there were one hundred and ninety master printers in London. Notary and Facques are early names on the list. There, as elsewhere, presses pass from father to son. Thus in the period mentioned, there are two Walleys, three Wolfes, three Wyers, three Powells, three Jugges, including the widow of one, three Halls, three Herfords, two Hills, two Coplands, two Days, two Alders, two Barkers, two Jacksons, two Whites. Day and Grafton, Wolfe and Wight, are especially eminent. The works printed are for the most part of the same nature as those issued by Caxton and his compeers—church books, school books, law books, medical books, classics, books of sports, fiction (poetry and prose); and it is a significant fact that Bibles are now added. The printers' places of business continue to be known by signs, the Mermaid, the St. John the Evangelist, the Holy Trinity, Our Lady of Pity, Maiden's Head, Brazen Serpent, the Well and Two Buckets, Lucretia Romana, White Horse, White Bear. At Oxford Theodore Rood of Cologne was printing in 1480, with a

partner named Hunt, who probably was the person who put forth a volume without a printer's name two years previously. The date of this book reads "mccclxvi;" out of which an "x" has dropped, a mishap which has befallen printed dates in other instances. In 1671 books printed under the auspices of the University began to be dated "E Theatro Sheldoniano," a practice which continued more or less until the establishment of the Clarendon. In 1480, also, books were being printed at St. Albans by the "Schoolmaster" of the Monastery there. At Cambridge, John Siberch, a German, was printing in 1521, Erasmus himself being a resident in the University at the same time. It was John Legate, a distinguished printer here in 1589, who first made use of the device still to be seen in the Cambridge books—a figure of *Alma Mater Cantabrigia* standing behind an altar with streaming breasts, and holding in one hand a sun, in the other a chalice, with an encircling legend of *Hic lucem et pocula sacra*. At York, a Hollander, Hugo Goes, was printing in 1506; at Canterbury, John Mytchell was similarly engaged in 1550. A press was established in Edinburgh in 1507, under the auspices of James IV. In Dublin, printing was introduced in 1551.

After the manner then just narrated sprang up the pre-eminently human art of type-printing; after the manner just narrated did it begin to spread. The rude wooden letters of the Haarlem block-printer, slowly carved with the hand, were quickly transformed into the magnificent metal characters of Gutenberg and Schoeffer, cut and cast with a finish, and impressed on paper and vellum with an effect which have never been surpassed. The adaptation of the invention to the intellectual wants of men was instantly, universally recognized. The appliances indeed by means of which these nimble ministers of man's wit are made to do their office, have undergone mighty changes. The primitive wooden wine-press of the Rhineland, with its screw and movable bar, gave the first idea of the apparatus required; nay, perhaps, in some cases was extemporized into the apparatus required. And grievous for a time was the wear even on the hardest type by the brute power of such a machine. Bleaw, of Amsterdam, an ingenious and scientific man, in 1601, civilized some of the first contrivances; but it was not until the beginning of the 19th century that the Stanhope press was constructed, made wholly of iron, and doing its work to perfection by means of delicate adjustments of pressure through spiral springs and the nicely calculated action of

a bent lever handle. Then followed the Ruthven, an Edinburgh machine, and the Columbian, a Philadelphia production, both based on the Stanhope principle, but accomplishing their tasks with greater economy of labour and greater speed.

But the demands of the age were insatiable. The successful application of steam power to machinery in other directions, quickly of course suggested itself as an auxiliary in printing, especially in the printing of newspapers, the circulation of which had now become exceedingly great. In 1814, the cylinder press of the London *Times* was the marvel of the day. Then, each in succession claiming and proved in practice to be really an advance in excellence, came the American Rotary, the Walter Web-feeder, the Prestonian Automaton—the last throwing off by a series of actions, looking like the result of self-consciousness and reason, huge sheets printed on both sides, disengaged from each other, and folded in incalculable numbers and with lightning rapidity. Caxton boasted in the Colophon of his *Recueil*, that the whole book was begun in one day and finished in one day: that is, that the first folio of the whole edition was worked off in one day, and the last folio in the same space of time. This for an edition of five hundred, and probably Caxton's would not be larger, would, when the sheet was printed on both sides, involve one thousand inkings, one thousand pulls of the press handle, one thousand placings and replacings, with a variety of other careful manipulations. Under the circumstances the old printer might legitimately claim some credit for the capabilities of his art. Perhaps not much more could have been accomplished with the machines at which Franklin worked in London and Philadelphia. The Stanhope furnished forth completed sheets of letter-press at the rate of 250 per hour. The first *Times* cylinder printed perfect copies of that great daily publication at the rate of 1,100 per hour, and now we hear of 10,000 perfected sheets per hour as the rate of production attained by the Automaton Web-feeder.

What the intellectual exigencies of future generations may be, who can say? Education is spreading every day, and in every country. The love of knowledge, of science, of literature, is penetrating all communities deeper and deeper, and will, in the onward march of civilization, be universal. And accompanying this great movement, another phenomenon is apparent—a tendency to a unity of alphabet,

a unity of typography, a unity of language. The demand for reading-matter—perhaps English reading-matter—great as it is, must in the future be vastly greater. But we must believe that man in the future, as in the past, will continue to develop contrivances answerable to his needs. Photography and electricity may be enlisted yet further than they already have been in the service of letters ; and appliances for satisfying the mental hunger of the human race, having photography and electricity as co-efficients, may possibly be thought of, which to us now would seem to involve the incredible, but which, to our descendants, will be things of course, and classed by them among the ordinary conveniences of every-day life.



CATALOGUE OF BOOKS, AND OTHER OBJECTS,

ILLUSTRATIVE OF THE ART OF TYPOGRAPHY, EXHIBITED AT THE ROOMS OF THE CANADIAN INSTITUTE, TORONTO, JUNE 13-16, 1877, ON THE OCCASION OF THE FOUR HUNDREDTH ANNIVERSARY OF THE INTRODUCTION OF PRINTING INTO ENGLAND BY WILLIAM CAXTON.*

1. WORKS ON THE GENERAL SUBJECT: TYPOGRAPHY.

- Joseph Ames. *Typographical Antiquities*. London. W. Faden, for J. Robinson, 1749. 4to. It has a good portrait of Caxton.
- Gerard Meerman. *Origines Typographicae*. The Hague. 1765. 4to. It has a fine portrait of Lawrence Coster.
- Henri Goussier. *De l'Invention de l'Imprimerie*. Paris. F. Schoell. 1809. 12mo.
- Paul La Croix. *Histoire de l'Imprimerie*. Paris. Plon frères. 1852. Royal 8vo. Plates.
- Noel Humphreys. *History of Printing*. London. Bernard Quaritch. 1863. Folio. Numerous reproductions and *fac similes*.
- Gulielmus Nicol. *De Literis Inventis: Libri Sex*. London: for H. Clement. 1714. 12mo. The frontispiece shews the Earl of Pembroke in his Library.
- John Johnson. - *Typographia*. London. John Johnson. 2 vols. Large paper copy. It shews in a medallion the heads of Gutenberg, Schoeffer and Fust.
- J. Ph. Berjeau. *Le Bibliophile Illustré*. Londres. W. Jeffs. 1862. Octavo. Cuts.
- Le Bibliophile Français*. Paris. Jules Bonaventure. 1863. 8vo.
- Richard Heber. *Catalogue of the Bibliotheca Heberiana*. London. W. Nicol. 12 vols. 8vo.
- A. A. Renouard. *Bibliothèque d'un Amateur*. Paris. Crapelet. 1819. 2 vols. 8vo.
- Catalogue of the Kloss Library*. London. Sotheby. 1835. 8vo.

2. ILLUSTRATIONS OF THE PRE-TYPOGRAPHIC PERIOD: ALPHABETS, INSCRIPTIONS, MANUSCRIPTS, ETC.

- The Four Gospels. A Greek MS. on vellum. Twelfth Century. Small 4to. From the Levant. With miniatures and illuminations at the beginning of each Gospel; and in the original cedar or cypress-wood covers.
- The Four Gospels. A Latin Manuscript on vellum. Fourteenth Century. 8vo. Western monastic work. The capitals rubricated. The original cover replaced by olive-morocco antique binding.
- The Book of Esther. A Hebrew manuscript on five sheets of prepared skin. Length of roll or megillah, ten feet; height, twelve inches. Lined at one end with green silk.
- Jac. de Effordia. *Tractatus*. Cologne. John Veldener. 1470. Xylographic or block-book. Illuminated letters.
- The *Biblia Pauperum* *Predicatum*. Xylographic or block-book. J. Russell Smith's *fac simile* reproduction. Forty plates. 4to.
- A Chinese xylographic block or wooden tablet, with a page of matter carved thereon, ready for printing from.
- A Chinese volume, "The Book of Heroes." The paper printed on one side only, and folded with the unprinted sides back to back. Many illustrations; and examples of the transition from formal to cursive writing on every page. Chinese binding.
- Chinese Bible. Gutzlaff. Printed and bound in the Chinese style.
- Japanese Alphabets and Object Lessons. Boldly drawn on sheets for school purposes.
- Arabic Manuscript. *Preces et Capitula Alcorani*. On Bombycine paper. Miniature 4to.

* The works exhibited were kindly lent by the authorities in charge of the Public Libraries of Toronto, and by several private amateurs of books in the city and neighbourhood. The Institute is indebted to the following for loans on the occasion:—The Parliamentary Library of the Province of Ontario, the Library of the University of Toronto, the Library of Osgoode Hall, the Library of the Department of Public Education, the Library of the Upper Canada Bible Society, N. G. Bigelow, Esq., Dr. Canniff, A. Ewins, Esq., Alderman Hallam, Dr. C. B. Hall, Arthur Harvey, Esq., S. Hart, Esq., F. Krauss, Esq., F. A. Knapp, Esq., O. Lindsey, Esq., Prof. London, W. J. Macdonell, Esq. (French Consul), J. Nolman, Esq., J. Paterson, Esq., Dr. Reeves, H. Russell, Esq., Rev. Dr. Scadding, W. H. Van der Smissen, Esq., S. J. Watson, Esq., Prof. Daniel Wilson, R. B. Willing, Esq., J. Young, Esq.

- Early French Black Letter Manuscript. Jardin Delectabile (Devotional).
 A Persian volume: "The Poems of Hâiz." Printed from blocks. Ornamental capitals, initials, etc. Persian binding.
 Specimen of Persian calligraphy.
 MS. Riccius. De Regibus Hispaniarum et Siciliæ. 8vo.
 MS. Legal Documents relating to Lands temp. Edward III., Henry VII., Henry VIII., Edward VI., Mary, Elizabeth, Charles I. With the Seals appended.
 J. B. DuHalde: Description of China. The Hague. H. Scheurler. 1736. 4to. 4 vols. Chinese characters.
 Dr. John Lamb. Hebrew Hieroglyphics. Cambridge Pitt Press. 1835. 8vo.
 C. Forster. Harmony of Primæval Alphabets. London. 8vo.
 James Harris. Hermes. Universal Grammar. London. J. Nourse. 1765. 8vo. Fine frontispiece.
 Comte de Gebelin. Histoire Naturelle de la Parole. Paris. Boudit. 1776. 8vo. Plates.
 F. J. Bastius. Paleographia. London. R. Watts. 1835. 8vo.
 London Paleographical Society's publications. The Seven parts. One hundred folio plates of exact fac-similes by the autotype process of authentic and very rare MSS on papyrus and vellum, from B. C. 152 down to the era of Wycliffe and Chaucer; consisting of portions of the Greek and Latin classics, gospels, psalters, office-books, charters, works in early English, etc., preserved in the libraries of Great Britain, Ireland, France, Italy and Spain.
 Sir W. Betham. Etruscan Inscriptions. Dublin: for P. D. Hardy. 1842. 8vo. 2 vols.
 Gio. Battista Vermiglioli. Etruscan Inscriptions at Perugia. Perugia. V. Bartelli. 1833. 4to. Chev. Bunsen's Copy.
 Mazochius. Inscriptions of Herculaneum. Naples. B. Gessar. 1754. folio.
 Oedericus. Ancient Latin Inscriptions, Medals, &c. Rome. F. B. Komarek. 1765. 4to. From Library of Trinity College, Cambridge.
 Ciampini. Vetera Monumenta. Ancient Inscriptions. Rome. Bernabo. 1699. 4to.
 Odescalum Museum. Rome. J. G. Salomon. 1751. folio. 2 vols.
 Marmora Oxoniensia. The Arundel and other Inscriptions. London. R. Boyer. 1732. folio.
 S. Nerses. Preces (in Thirty-three Languages). Venice. 1862. 12mo.
 Armenian. Meditations. Imitation Armentan MS. Rome. 12mo.
 Humboldt. Ancient Inhabitants of America. Mexican Inscriptions. London. J. G. Barnard. 1814. 2 vols. 8vo.

3. BOOKS PRINTED BEFORE A.D. 1500.

- Johannes de Gersonâ. Tractatus. Nuremberg. John Gensenschmidt. 1472-3. folio. Illuminated capitals and initials.
 Bonaventura. Speculum B. Virginis. Augsburg. Antonius Sorg. 1477. folio.
 Antonius Ranpegolis. Aureum Repertorium (without place, date or printer's name): before 1475. 4to.
 Durandus. Rationale Divin. officiorum. Venice. Erhardt Radolt. 1485. folio.
 Gregoy IX. Decretalia. With Bernhard's Gloss. Spires. Petor Drach. 1486. Large folio.
 Richard Paefroed of Deventer. Speculum Exemplorum. Strasburg. Office of Mentelin. 1490. 4to.
 Jac. de Voragine. Legenda Aurea. Strasburg. 1490. Folio. Stamped vellum binding.
 S. Vincent. Tractatus. Nuremberg. Conrad Zeninger. 1481. 4to. Illuminated initials and capitals.
 Tortellius. De Orthographia. Venice. Tacuinus, alias J. de Tridino. 1495. folio.
 Dacus Sinensis. Elegantiæ Augustini. L. H. de S. [place?] 1496. 4to.
 Biblia et Concordantiæ. Angelus et Jacobus Britannicus. Brescia. 1496. 12mo.
 Pomponius Lætus. Historia Romana. Venice. Bernardinus Venetus, 1499. 4to.
 Nicolaus de Blony. Sermones. Strasburg. (From the office of Mentelin.) 1498. folio.
 The Bamberg Missal. Strasburg. John Pfeyl. 1499. folio, with illuminated capitals.
 Aeneas Sylvius (Pius II.) Minor Poems: Epistola Retractoria. (ante 1500) 4to.
 Magister Alexander. Grammatica Latina, with the commentary of Joh. Synthis. Daventer. Richard Raiffact. 1496. 4to.
 Petrarck. Epistole Familiars. Venice. J. and G. de Gregoriis. 1492. 4to. Device.
 Fasciculus Temporum. Venice. Erhardt Radolt. 1485. folio. cuts.
 Summarium Librorum Decretalium. Louvain. John of Westphalia. 1480. folio.
 Nestor Dionysius Novariensis. Vocabularium. Venice. Phillip Pinzias. 1496. folio.

4. BOOKS PRINTED A.D. 1500—A.D. 1600.

- Quinacuplex Psalterium, Gallicanum, Romanum, Hebraicum, Vetus, Conciliatum. Paris. Henry Stephens: finished 1508; printed 1513. With Autograph "Louis Philippe d'Orléans. 1826."
- Cæsar. Commentaries. Lyons. Seb. Gryphus. 1547. 12mo. Italic type. Wood-cuts and maps. Device.
- Cæsar. Commentaries. Paris. Robert Stephanus. 1544. 12mo. Italic type. Wood-cuts and maps. Device.
- Pindar. Carmina. Geneva. Paul Stephanus. 1526. 12mo.
- Galen. On Letting of Blood. Lyons. J. and F. Frellon. 1546. 12mo. With Frellon's device.
- Cicero. On Rhetoric. Venice. Bernard. de Vitalibus. 1522. folio. Ash boards exposed. Clasps. Wood-cut device.
- Augustine. De Doctrina Christiana. Louvain. Steph. Valerius. 1562. 12mo.
- Ven. Bede. Eccles. Hist. Anglorum. Antwerp. J. Gravius. 1550. folio. Device.
- Ludovicus Cælius Rhodoginus. Lectiones Antiquæ. Paris. And. Wechel 1599. folio. Device.
- Ecclesiastica Disciplina. Libri Sex. Cologne. W. Lutzen Pirchen. 1598.
- Historia Ecclesiastica. Interp. Joh. Christopherson. Paris. Nic. Chesneau. 1571. folio.
- Elias Levita. Cantici Capitula. Heb. and Lat. Basle. Froben. 1527. 12mo.
- Sebastian Brant. Ship of Fools. Basle. Henric-Petri. 1572. 12mo. Wood-cuts.
- Reinecke Fuchs. (Reynard the Fox.) Speculum Vitæ Aulicæ. Schopper's translation. Frankfurt. Nic. Basscus. 1595. 12mo. Wood-cuts by Jost Amman and Virg. Solis.
- Cassianus. Opera. Antwerp. Ch. Plantin. 1578. 12mo.
- Prudentius. Poemata. Basle. Henric-Petri. 1562. 12mo.
- Novum Testamentum. Fr. Gryphus. 1521. 12mo (with figures).
- Aratus. Phenomena. Paris. And. Wechel. 1561.
- Horus Apoll. Nilivæ. Hieroglyphica. Bologna. Jer. Platonides. 1517. 4to.
- Marlianus. Romæ Topographia. Rome. Ant. Bladus de Asula. 1534. 8vo.
- Hegesippus. De Bello Judaico, etc. Jod. Badius Ascensius. 1524. 4to.
- Peter Comestor. Historia Scholastica. Hagenau. Henry Han. 1519. folio.
- Trithemius. Annals. Paris. Christian. Wechel. 1539. folio.
- Tressino. Rime. Venice. Tolomeo Janiculo. 1529. 8vo. Tressino type.
- Langham. Garden of Health. London. 1579. 4to. Wood-cuts.
- Suetonius. Imperatores. Lyons. Seb. Gryphus. 1581. 32mo. Fine Gryphus device. Italic type. Fine vellum binding.
- Joh. Magnus. Goth. Sueonumque Hist. Rome: cum priv. Jul. III. P. M. 1554. 4to. Curious wood-cuts.
- Lucan. De Bello Civili. Lyons. Seb. Gryphus. 1542. 12mo.
- Zuinglius. In Isalam, etc. Zurich. Ch. Froschour. 1529. folio. Fine binding. Stamped vellum.
- Calvin. In Jobum. Geneva. Eust. Vignon. 1593. folio.
- Polybius. Antwerp. Ch. Plantin. 1582. 4to.
- St. Matthew. In Hebrew. Basle. Henric-Petri 1557. 12mo.
- Cicero. De Oratore. Paris. Charles Stephens. 1553. 4to. Fine Greek type.
- Cornelius Schultingius Steinwickius. De Ecclesiasticâ Disciplina. Cologne. 1598. Wilhelm Lutzenkirchen. 12mo. Clasps.
- Isocrates. Opera. Greek and Latin. Jer. Wolfius interpreter. Basle. Joh. Oporinus. (Herbst.) 1567. 12mo. 2 vols. Beautiful minute Greek characters.
- Nicol Burne. Disputation between the Deformed Kirk * Scotland and Nicol Burne: "brought up from his tender eage in the perversit sect of the Calvinistes." Paris. 1531. 8vo. Dedicated to James VI.
- Peter Lombard. Sententiæ. Libri IV. Cologne. Sine nom. 1576. 12mo. Edited by Ant. Monchlatin. Demochares. Dedicated to Gregory XIII.
- Calvin. Sermons on Epistle to Galatians. London. Lucas Harison and George Bishop. 1574. 4to. Fine wood-cut title page. Arthur Golding's translation. Inscribed to Lord Burleigh.
- Gervais Babington. Plain, brief and comfortable notes upon Genesis. Lond. J. R. for Thos. Charde. 1596. 4to. Black letter.
- P. Martyr. De Rebus Oceanicis et Novo Orbe. Cologne. Apud Gerv. Calenium. 1574. 12mo.

- Lactantius. Opera. Basle. And. Cratander. 1621. 8vo.
 St. Chrysostom. Homilies. Basle. And. Cratander. 1522. folio. Wood-cut title by Holbein.
 Calepinus. Dictionarium. Venice. Joh. Gryphus. 1540. Folio. Stamped vellum. Clasps. Device.
 Calepinus. Dictionarium. Basle. Sebastian Henric-Petri. 1590. folio. Stamped hog-skin; marked 1608. Clasps.
 Polydore Vergil. English History. Basle. Thos. Guarinus. 1570. folio. Stamped vellum half binding, the characteristically-grained beechen-boards exposed. Clasps. Wood-cut device on title page.
 Ovid. The Fasti. Mantua. Joh. Tacuinus de Tridino. 1508. folio. Wood-cuts.
 Ecclesiastical Historians, The early, in English. London. Vautrollier. 1585. folio. Black-letter.
 Du Choul. La Religion des Anciens. Lyons. Gul. Rouville. 1581. 4to. Wood-cuts.
 Xenophon. Trans. into Italian by Ant. Gandini. Venice. Pietro Dusinelli. 1588. 4to. Italic type. Fine title.
 Lipsius. On Engines of War. Antwerp. Christ. Plantin's widow and John Moretus. 1596. 4to. Plantin's device on title and after colophon.
 Joh. Florio. Worlde of Wordes. London. Arnold Hatfield. 1598. folio. Fine title. Shakspeare's Holofernes.
 John Florio. Transl. of Montaigne. London. M. Flesher. 1632. folio. The transl. used by Shakspeare.
 Bede. Extracts from Augustine on St. Paul. Jod. Badius Ascensius. 1522. folio. Fine wood-cut title, with device of "Jehan Petit."
 Sophocles. Antwerp. Plantin. 1579. 32mo.
 Speculum Intellectuale Felicitatis Humanæ. Nuremberg. Udalric Pinder. 1530. 4to.
 Dionysius Halicarnassensis. F. Sylburgius. Frankfort. And. Wechel. 1686. folio.
 Jewel. Apology. London. J. Beale. 1559. 24mo.

5. BOOKS PRINTED A.D. 1600—A.D. 1700..

- Irenæus. Contra Hæreses. Cologne. Birchmann. 1625. folio.
 Ramnusio. Navigatione et Viaggi. Venice. Giunta. 1654. folio. 3 vols. Maps of Nova Francia.
 Willibaldomar. Life of St. Augustine. Ingoldstad. Wilh. Eder. 1631. folio.
 Latinus Latinius. Bibliotheca Sacra et Profana. Rome. Angelo Bernabo. 1677. folio.
 Octavius Boldonius. Theatrum, etc. Milan. Pacificus Pontius. 1636. folio.
 Augustine. City of God: in English. London. Geo. Eld. 1610. folio.
 Index Expurgatorius. For Spain. Madrid. Didacus Diaz. 1667. folio.
 Corpus Juris. Gotofredus. Geneva. John Vignon. 4to.
 Decretals of Gregory IX. Lyons. J. Pillehotte. 1613. folio. Clasps.
 Japanese Missions. Latin. Munich. Triguntias. 1623. 4to. Engravings.
 Chinese History. Martinus. Latin. Munch. L. Straubius. 1658. 4to.
 Turquet. History of Spain. London. A. Islip and G. Eld. 1612. folio. Fine title.
 Ghisler. On the Song of Solomon. Antwerp. Joh. Keerburgius. 1616. folio. Device.
 Histoire de l'Eglise. French Trans. of the Earliest Historians. Paris. Damien Foucault. 1675. 4to. 3 vols. From the Bibliotheca Colbertina.
 De Strada. Lives of the Roman Emperors. Frankfurt. Eberhard Kiefer. folio. Engravings.
 Camden. Britannia. London. G. Bishop. J. Norton. 1607. folio. Maps. Latin Text.
 Camden. Britannia. London. G. Bishop. J. Norton. 1610. folio. Maps. Phil. Holland's translation.
 Alex. Scot. Apparatus Latinæ Locutionis. Geneva. P. and J. Chouet. 1627. 4to.
 Pliny. The Natural History. Phil. Holland's translation. London. J. Islip. 1601. folio.
 Bacon. The Advancement of Learning. Oxford. J. Lichfield. 1640. folio. W. Penn's copy: with his book-plate.
 Bird. Magazine of Honour. London. For W. Shearer. 1642. 12mo.
 Calvin. Institutio Christiana. Geneva. Jac. Stoer. 1618. 8vo. Fine device.
 Gomez Texada de los Reyes. Leon Prodigioso. Madrid. Bernardo-de-Villa Diego. 1670. 4to. Washington Irving's copy, with his autograph, at Seville, 1823.
 Don Quixote. In Spanish. The two Parts. Madrid. Mateo Fernandez. 1668. 4to.

- Saint Macarius. Opera. Leipsic. C. Fleisher. 1699. 12mo. Portrait of Macarius.
- Lewis Bayly. Practice of Pietie. London. J. Hodgett. 1610. 12mc. Dedicated to Prince Charles (Charles I.)
- Phœdrus. Fabulæ: annotated by John Lawrence. Amsterdam. J. Jansson & Waesberge. 1667. Svo. Copperplates.
- Froissart and Phillip de Comines. In Latin: Sleidan's translation. Amsterdam. Joh. Blæu. 1656. 12mo.
- Bacon. Sermones Fideles. Leyden. Fr. Hack. 1644. 32mo.
- Stahl. Regulæ Philosophicæ. London. J. Redmayne. 1672. 12mo.
- Geo. Buchanan. Poemata. Edinburgh. John Cairns. 1677. 32mo.
- Schola Salernitana. De Bonâ Valétudine. Rotterdam. Arnold Leers. 1667. 32mo.
- Nic. Caussin. Sacred Tragedies, in Latin. Paris. Seb. Chapelet. 1629. 32mo.
- Tacitus. Opera. Amsterdam. Jno. Jansson. 1637. 32mo.
- Thomas à Kempis. De Imitatione. Antwerp. Jac. & Meurs. 1664. 48mo.
- Novum Testamentum. Græce. Sedan. J. Jannoni. 1628. 48mo.
- Silius Italicus. Bella Punica. Amsterdam. Gul. Blæu. 1631. 32mo.
- Manetho. Gronovius: editio princeps. Leyden. Fred. Haaring. 1698. 4to.
- Duns Scotus on Peter Lombard. Coimbra, Portugal. Gomez Loureiro. 1609. folio. Portrait of Duns.
- Marcus Aurelius. Gataker's Commentary. London: for Ed. Millington. 1697. 4to. Portrait.
- Sidonius Apollinaris. Opera. Paris. Seb. Cramoisy. 1652. 4to. Device.
- Treatises relating to Government: temp. Charles II. London. 1650. folio.
- Edward Brown. Travels. London. Benj. Tooke. 1695. folio.
- Sir W. Raleigh. History of the World. 1st edition. London: for W. Burro. 1614. folio.
- James Howell. Epistolæ Ho-Elizianæ. London: for Humphrey Moseley. 1650. 12mo.
- Plautus. Comœdiæ. Amsterdam. John Janssonius. 1630. 24mo.
- Mercurius Rusticus. On Sacrilege. Oxford. 1646. 24mo.
- Hasolle. Fasciculus Chemicus. London. J. Flesher. 1650. 18mo.
- Camoens. Lusiad. Fanshawe's translation. London. Humphrey Moseley. 1654. folio.
- Coke upon Littleton. London. 1670. folio. Portraits.
- W. Prynne. On Courts. London. Thos. Ratcliffe. 1669. folio.
- Sir Geo. Cary. Reports. London. A. Maxwell. 1665. 12mo.
- Wm. Tothill. Reports. London: for R. Best and F. Place. 1671. 12mo.
- Cicero. Offices. Sir R. L'Estrange's translation. London: for H. Brome. 1631. Svo.
- Walter Charleton. Inquiries into Human Nature. London. M. White. 1690. 4to.
- Sir Simonds D'Ewes. Journals. London. Sir J. Starkey. 1682. folio.
- Livy. Historiæ. Amsterdam. W. Blæu. 1633. 24mo.
- Livy. Historiæ. Cambridge. Joh. Hayes. 1679. Svo.
- Thomas Stafford. Pacata Hibernia. London. Aug. Mathewes. 1633. folio. Maps, plans and portraits.
- Saluste du Bartas. Jos. Sylvester's translation. London. 1611. Svo. Dedicated to James I.
- Guicciardini. History of Italy. Venice. Nicolo Polo and Fr. Rampazetto. 1660. 4to.
- J. H. on the Late Long Parliament. London: for Ric. Lownds. 1656. 12mo. Dedicated to O. Cromwell.
- Buchler. Thesaurus. Cologne: for Bernard Walter. 1623. 24mo.
- Gesangen. Amsterdam. F. Houttuyn. 1662. 24mo.
- Luther. Catechesis minor. Witenberg. L. Seuberlich. 1605. 24mo. In German, Latin, Greek and Hebrew.
- C. Juncker. M. Lutheri vita. Frankfort: apud G. A. Endterum. 1699. 12mo. Plates of medals.
- Earl of Essex. Proofs of his Treason. London. Robert Barker. 1601. 4to.
- Prynne. Trial of Col. Fiennes. London: for M. Sparks. 1644. 4to.
- Thomas Crenius. Museum Philologicum. Leyden. Abraham vander Mijn. 1690. 12mo.
- Harvey. De Motu Sanguinis. Rotterdam. Arnold Leers. 1648. 24mo.
- Aristophanes. Comœdiæ. Amsterdam. Joh. Ravestein. 1670. 24mo.
- Boethius. Lord Preston's Translation. London: for Awnsham and John Churchill. 1695. Svo. Portrait.

- H. Cornelius Agrippa. *The Vanity of Arts and Sciences*. London: for C. Blount. 1684. 8vo. Portrait.
- H. Cornelius Agrippa. *De Incertitudine et Vanitate Scientiarum*. Sine anno et loco. 12mo. Portrait.
- John Kirckman. *De Funeribus Romanis*. Leyden. Apud Hackios. 1672. 32mo.
- Plutarch. *Opera Omnia*. Frankfort. D. Aubrius et C. Schleich. 1620. folio. 2 vols. Device.
- Athenian Society. *Young Student's Library*. London. J. Dunton. 1692. folio.
- Beucaire de Peguillon. *De Rebus Gallicis*. Lyons. C. Landry. 1625. folio.
- Status Eccles. Gallicana. London: for Thomas Passenger. 1676. 4to.
- P. de Marca. *De Primatu Lugdunensi*. Paris. Apud Viduam J. Camusat et P. le Petit. 1644. 12mo.
- F. Spanheim. *De temerè creditâ Petri in urbem Romam Profectione, etc.* Leyden. Apud D. à Gasbeek. 1679. 12mo. Device.
- S. de Petri Sanctâ. *Synbola Heroica*. Amsterdam: apud J. Waesbergios et H. Wetstenium. 1682. 4to. Numerous emblematic cuts on copper. Engraved title, designed by P. P. Rubens
- Decreta Synodalia Dioc. Augsburg. Dilinga: apud Joh. Maier. 1610. 4to.
- Alex. Ross. *Virgilius Evangelisans*. London. J. Legate. 1638. 12mo.
- Caussin. *Holy Court*. London. J. Williams. 1678. folio.
- Garcilasso de la Vega. Madrid. Luis Sanchez. 1621.
- Mallens Maleficorum. Leyden. C. Lundry. 1620.
- Sieur Theophile. *Œuvres*. Lyons. Claude la Riviere. 1658.
- Arndius. *Lexicon Antiq. Eccles. Gripswaldicæ*. M. Doischer. 1669. 4to. Portrait.
- Isaac Casaubon. *In Carul. Baronium*. Geneva: apud A. et S. de Tournes. 1654. 4to
- M. A. Muretus. *Opera*. Lipsie. C. Michaelis. 1672. 12mo. Portrait.
- J. G. Voessius. *De Studiis*. Utrecht. T. Ackersdyk ad G. Zyllius. 1658. 12mo.
- J. L. Gottfriedt. *Neue Welt*. Frankfort. M. Merian. 1654. folio. Maps.
- Herodotus. Gr. and Lat. in double columns. Frankfort. C. Mannus. 1608. folio.

6. BOOKS PRINTED AFTER A.D. 1700.

- Cudworth. *Systema Intellectuale*. Mosheim's translation. Jena. Meyer. 1733. folio. pp. 1206: exclusive of copious appendices. Portrait of Cudworth.
- Terence. Bentley. Cambridge. Corn. Crownfield. 1726. 4to. Portrait of father of George III.
- Eckhel. *Coins and Medals*. Vienna. Jos. Kurzbeck. 1775. 4to. Plates of medals.
- Raleigh. *History of the World*. London. Ralph Smith. 1700. 8vo. Portrait.
- Evelyn. *Silva*. London: for John Scott and others. 1706. folio. Portrait of Evelyn by Nanteuil.
- Virgil. Birmingham. Baskerville. 1757. 4to.
- Virgil. Brack. Strasburg. P. J. Dannbach. 1769. 4to. German reproduction of the Baskerville Virgil.
- T. Lucretius Carus. *De Rerum Natura*. London: for Daniel Browne. 1743. 8vo. 2 vols. Guernier's copperplates.
- Ovid's *Fasti*: in English Verse, by William Massey. London. H. Woodfall. 1757. 8vo.
- Castiglione. *Il Cortegiano*, in English. London. W. Bowyer. 1727. 4to. Portrait.
- Ennius. *Hier. Columna*. Amsterdam. Wetstein. 1707. 4to. Engraved title.
- Celsus. *De Medicina*. Amsterdam. Joh. Wolters. 1713. Portrait.
- Newton. *The Principia*. London: for Benj. Motte. 1729. 8vo. 2 vols. And Motte's translation. Frontispiece.
- Barrow. *Mathematical Lectures*. London: for Stephen Austin. 1734. 8vo. Portrait.
- Xenophon. *Cyropædia*. Oxford: & Theatro Sheldoniano. 1747. 8vo. Fine bold Greek.
- Baillet. *Jugemens des Savans*. Paris. Jacques Chardon. 1722. 9 vols. 4to.
- Jac. Facciolati. *Orations, etc.* Padua. Typis Seminarii. 1729. 8vo.
- Vaillant. *Numismatic History of the Ptolomæi*. Amsterdam. G. Gallet. 1701. folio.
- Boerhaave. *Institutes*. London. Rivington, etc. 1757. 4 vols. 8vo.
- M. Manilius. *Astronomy*: Creech's translation. London: for the Booksellers. 1700. 8vo. Frontispiece.
- Thomas Hobbes. *Nalmesburiensis. Moral and Political Works*. London. "Printed in the year 1750." folio. Portrait.
- Herodotus. Gronovius. Leyden. S. Luchtmans. 1715. folio.

Z. C. Uffenbach. *Epistola*. Ulm. Apud J. F. Gaum. 1753. 12mo. Frontispiece: interior of Uffenbach's Library.

Le Brun Desmarettes. *Voyages Liturgiques en France*. Paris: chez F. Delaulne. 1718. 12mo.

Ogilvy. *Roads of England and Wales*. London: for T. Bowles. 1724. 4to. pp. 273. Engraved throughout.

Gostling. *Walks in and about Canterbury*. Canterbury: for Simmonds and Kirkby. 1779. Svo.

Thomas Richards. *Antiquæ Linguae Britannicæ Thesaurus*. Bristol. Felix Farley. 1759. Svo.

Pythagoras. *Aurea Carmina: Comment. of Hierocles*. Cambridge. Typis Academicis. 1709. Svo.

Helvetius. *De l'Homme*. Londres: chez la Société Typographique. 1773. Svo. 2 vols.

Fiddes. *Life of Wolsey*. London. J. Barber. 1724. folio.

Leti. *Vie de Sixtus V.* Bruxelles: chez J. Serstevens. 1717. 12mo. 2 vols. Portrait.

P. Sarpi. *Droits des Souverains*. A la Haye: chez H. Scheurleer. 1721. 12mo. 2 vols. Portrait.

De Châlons. *Dictionnaire Breton-François*. Vannes: chez J. de Henqueville. 1723. 12mo.

F. Sandford and S. Stebbing, *Genealogical History of Monarchs of Great Britain from 1066 to 1707*. London. M. Jenour, for J. Nicholson. 1707. folio. pp. 990. Plates.

Buchanan. *History of Scotland: in Latin*. Edinburgh: for J. Paton. 1727. 12mo.

Merlinus Cocaius. *Opus Macaronicum*. Amsterdam. J. Braglia. 1763. 4to. Engravings.

7. ILLUSTRATIONS OF THE CANTON PERIOD IN ENGLAND: REPRODUCTIONS AND REPRINTS.

The Game of the Chess. John Russell Smith's *fac-simile* reproduction; with the wood-cuts.

The Fifteen Oes. Griffin and Farran's photo-lithographic reproduction. "Printed by the commandment of the most high and virtuous princess our liege lady Elizabeth, by the grace of God, Queen of England and France, and also of the right high and most noble princess Margaret, mother unto our sovereign lord the King, etc., by their most humble subject and servant William Caxton." With wood-cut frontispiece, and borders to each page.

The Golden Legend. Specimen sheets of the Holbein Society's *fac-simile*, with wood-cut of "the nativity of our blessed Lady."

To represent Wynkyn de Worde. Dr. Hymers' reproduction of Lady Margaret's Funeral Sermon by Bishop Fisher. With *fac-simile* of W. de W.'s title-page.

To represent Pynson. The Camden Society's reprint of Pynson's editio princeps of the *Promptuarium Parvulorum*, of Galfridus Grammaticus. 1440. 4to. With *fac-similes* of the MSS.

8. PHOTO-ZINCO-GRAPHIC REPRODUCTIONS IN FAC-SIMILE.

The Folio Shakspeare of 1623. Howard Staunton's reproduction. The full-sized and the reduced Svo. volume.

First Edition of Shakspeare's Sonnets. London. G. Eld. 1609.

The Holbein Society's Reproductions. The whole series.

The Folio Prayer-book. 1636. With the MS. corrections.

Wilhelm Wattenbach. *Greek MSS.* Berlin. 1876. 4to.

William Cureton. The *Ulad* from a Syriac Palimpsest. London. British Museum. 1851. 4to.

Epistle of St. Clement, from the Codex Alexandrinus. London. British Museum. 1856. 4to.

Sprott's Chronicle. Anastatic reproduction. Closes with the reign of Edward I. 1307. Twelve sheets: each 3 feet 6 inches in length and 14 inches in breadth. Numerous curious illustrative cuts.

A Pigeon Times. A French Pellicule. (Photographic Souvenirs of the Siege of Paris.)

Other Reproductions.

Arber's Reprints. The whole series. Large paper.

Booth's *fac-simile* reprint of Shakspeare.

Breviarium Aberdonense. 1508. Edinburgh. Chapman and Millar.

Strena ad Jacobum V. Scot. reg. Edinb. apud Thomam Davidson. 1523. Bannatyne *fac-simile*.

Utrecht Psalter. Bagster's reproduction, with *fac-similes* of the MSS.

Nennil Historia Britonum. Lond. Hist. Soc. 1833.

Gildas de Excidio Britannia. Lond. Hist. Soc. 1838.

Rio de Bury's Philobiblon. 1344. London. Thomas Rodd and Richard Taylor. 1832. "Alere flammam" device.

Lily's Brevissima Institutio. Editio princeps, by Pynson, 1518. London. Longman. 1830. Rude wood-cut title-pages.

9. EARLY BIBLES IN SEVERAL LANGUAGES, COMMENTS, &C.

- Folio Bible. London. R. Barker. 1634. Black-letter. Wood-cut title.
- The Bishops' Bible. folio. London. 1566.
- Folio Bible. Latin Vulgate. Bamberg. 1713. Sumptibus W. M. Endter. Stamped vellum.
- Luther's German Bible. folio. Nuremberg. 1693. Joh. And. Endiers. Wood-cut illustrations. Engraved title, and full length figure of Luther.
- Folio Bible in Dutch. Dordrecht. 1741. Hendrik Keur. His device on title to New Testament.
- La Sainte Bible. folio. Ostervald. Amsterdam. J. F. Bernard and Herman Uitwerf.
- Beza's New Testament. folio. Cambridge. Roger Daniel. 1642. Fine device on title "Alma Mater Cantabrigia," etc.
- Quarto Bible. London. Robert Barker. 1615. Black-letter. Wood-cut titles.
- Quarto Bible. London. Robert Barker. 1603. Roman letter, from Beza's version.
- Quarto Bible. London. Jno. Daye and Christopher Barker. 1583.
- Biblia Sacra. Brescia. Printers, the brothers Angelus and Jacobus Britannicus. 1496. 12mo.
- Biblia Sacra. Lyons. Jac. de Millis. 1588. 8vo. Woodcuts. Device and legend, *poco a poco*.
- Biblia Sacra. Venice. Bernardinus Stagninus. 1538. 12mo.
- Diodati's Bible. In Italian, without printer's name or place. 1607. 4to. Device: a sower.
- Père Simon's New Testament, in English. 4to.
- New Testament in Spanish. En casa de Ricardo del Campo. Antwerp. 1596. Device.
- Four Gospels. 4to. Black-letter: temp. Elizabeth.
- Welsh Bible and Prayer Book. Cambridge. Joseph Bentham. 1746. 8vo.
- Biblia Sacra. Lyons. John Pullon, alias de Trin. 1583. 8vo. Wood-cuts.
- Biblia Sacra. Hebraicè. Antwerp. Ch. Plantin. 1566. A.M. 5326. 4to.
- New Testament. Wesley's Notes. London. "Printed for the Author, and sold at the New Chapel, City Road, and by all the Booksellers in town and country." 1788. 4to.
- Novum Testamentum. Græcè. Leyden. Off. Plantin. 1591.
- Novum Testamentum. Græcè. Sedan. Joh. Jannoni. 1623.
- Novum Testamentum. Arias Montanus. Hebraicè: Chaldaicè Græcè: Latinè. Antwerp. Ch. Plantin. 1569. folio.
- Mat's Edition of the Vatican MS. of the New Testament. Reprint. London. 1859.
- St. Matthew and Ep. to the Hebrews: in Hebrew. Basle. Henric-Petri. 1557.
- Biblia Sacra. Lyons. De Tournes. 1554. 8vo. Wood-cuts.
- R. B. Blackader. The English Bible, etc. London. Mitchell & Son. 1859. 4to. 2 vols. Bp. Thirlwall's copy.
- Biblia Sacra: De Lyra. Donay. Balthazar Bellerus. 1617. folio. 5 vols. Title-page designed by P. P. Rubens, engraved by Collaert.
- J. H. Heidegger. Enchiridion Biblicum. Zurich. David Gessner. 1703. 12mo.
- Le Nourry. Apparatus. Paris. J. Anisson. 1703. folio. Dedicated to Card. Noailles.
- Camerarius. Comment on New Testament. Cambridge. Roger Daniel. 1642. folio. Fine device of "Alma Mater" on title page.
- Is. Vossius. De LXX. Interpretibus. Hagæ-Comitum. Adrian Vlacq. 1661. 4to.
- Musculus. Comment. Psalmorum. Basle. Seb. Henric-Petri. 1618. folio.
- Henry Moller. Praelections on the Psalms. Geneva. P. and J. Chouet. 1639. folio.
- Chinese Bible. Gutzlaf.
- Mandchou Testament.
- Creole New Testament. Copenhagen. 1818.
- Pali New Testament. Colombo. 1835.
- Cree Bible. In the Cree character. London. 1861.
- Book of Proverbs, in embossed type for the Blind.
- Bagster's Bible in Every Land.
- John Jackson. Index Biblicus. Cambridge. John Field. 1668. 4to.
- The Zend-Avesta of Zoroaster. Anquetil du Perron's translation. Paris. 1771. 4to. 3 vols.
- Confucius. His Scientia. Paris. Daniel Horthemels. 1687. folio. Portrait of Confucius standing in his library. *Fac-similes*.
- Testament of the Twelve Patriarchs. London. M. Clark. 1684. 12mo.

10. BOOKS FROM THE PRESSES OF THE ELZEVIRES.

- Cluverius. *Geographia*. Amsterdam. Ex off. Elzevir. 1679. 32mo. Horace Walpole's copy.
- Virgil. *Opera*. Amsterdam. Ex off. Elzevir. 1664. 32mo.
- Seidan. *De Quatuor Summis Imperiis*. Amsterdam. Ex off. Elzevir. 1678. 32mo.
- Cunæus. *De Rep. Hebræorum*. Leyden. Ex off. Elzevir. 1632. 32mo.
- Pliny. *Historia Naturalis*. Leyden. Ex officina Elzeviriana. 1635. 32mo. 3 vols.
- Terence. *Comœdia*. Leyden. Ex officina Elzeviriana. 1635. 32mo.
- Ovid. *Metamorphoses*. Amsterdam. Daniel Elzevir. 1664. 32mo.
- Melancthon. *Epistolæ*. Leyden. Bonaventura and Abraham Elzevir. 1647. 12mo.
- Jonston. *Enchiridion Ethicum*. Leyden. Ex officina Elzeviriana. 1634. 12mo.
- Meursius. *Glossary*. Leyden. Louis Elzevir. 1614. 4to.
- Eusebius. *Polychronion*. Psellus. In Cant. *Canticorum*. Leyden. 4to. Ex off. Elzevir. 1617. 4to. (Joh. Meursius' editio princeps.)
- Busbequius. *Legationis Turcicæ Epistolæ quatuor*. Amsterdam. Ex officina Elzeviriana. 1660. 32mo.
- Belgii Confederati Respublica. *De Laet*. Leyden. Elzevir. 1630. 32mo.
- Des Marets. *Ariana*. Amsterdam. Louis and Daniel Elzevir. 1659. 24mo.
- Tacitus. *Annales, etc.* Leyden. Ex off. Elzevir. 1640. 32mo. 2 vols.

11. BOOKS FROM THE PRESSES OF THE ALDI.

- Abduensis de Jure Civili. Venice. Aldi Filii. 1546. Anchor and Dolphin.
- Libri de Re Rusticâ. Venice. In œdibus Aldi et Andreae Soceri; i.e., A. Torresani, the successor of Nic. Jenson. 1514. 8vo.
- Faletus. *De Bello Sicambrico*. Venice. Aldus. 1557. 4to.
- Chrysostom. *De Virginitate*. Rome. Paulus Manutius. Aldi filius. 1582. 4to.
- Robert Langland. *Vision and Creed of Piers Plowman*. London. W. Pickering. 1842.
- Rebus and device, *Aldi Discip. Anglus*.

12. WORKS OF ERASMUS (EARLY EDITIONS).

- The *Adagia*. Hanan Wechel. 1617. folio. pp. 774, exclusive of copious indices, and H. Stephens' *Anmadversiones*. Wechel's device on title page.
- The *Paraphrases of Erasmus*. In Latin. Basle. John Froben. 1541. folio. Fine example Froben's device on title page.
- The *Paraphrases*. In English. Udal's transl. Lond. E. Whytchurch. 1548. Black-letter folio.
- Epistles of Erasmus*. Antwerp. Loëi. 1551.
- Colloquia*. Amsterdam. Gul. J. Casius. 1629.
- Varia*. (Treatises.) Leyden. J. Mayre. 1641. 2 vols.
- Moriæ Encomium*. Oxford. W. Hall. 1633.
- Moriæ Encomium*. Amsterdam. Hen. Wetstein. 1585. 24mo. Engraved title.
- Eloge de la Folie*. Guendeville's Translation. Leyden. Vander Aa. 1713. 12mo. With Holbein's illustrations.
- Colloquies translated by Sir R. L'Estrange*. London: for Daniel Brown. 1725. 8vo.
- Pilgrimages to Canterbury and Walsingham* (reprint). Westminster. J. B. Nichols. 1849. 12mo. Wood-cuts.
- Jortin's Life of Erasmus*. London. Ric. Taylor. 1818. 8vo. 3 vols. Fine portrait.
- Knight's Life of Erasmus*. Cambridge. C. Crownfield. 1726. 8vo. Engravings.

13. CURIOSITIES, SPECIAL EDITIONS, ETC.

- Bunyan. *Pilgrim's Progress*. 27th Edition. London. A. W., for W. Johnson. 1748. Wood-cuts.
- Bunyan. *Pilgrim's Progress*. 31st Edition. London. 1760, 1764, 1765. The three parts, with the cuts.
- Milton. *Paradise Lost*. 3rd Edition. 1678. Portrait.
- Pope. *The Dunciad*. Notes and Prolegomena of Scriblerus. London: for Lawton Gilliver. 1729. 8vo.
- The *Eulenspiegel*. Without printer's name or place. 1799. Plates.
- Horace Walpole. *Poems, and Castle of Otranto*. Strawberry Hill Press. 1758.

- Ferrarius. The Hesperides. Rome. H. Scheus. 1646. Folio. Horace Walpole's copy.
- Ferrarius. De Florum Cultura. Rome. S. Paulinus. 1633. 4to. Plates.
- Dibdin. Reminiscences. London. J. Major. 1836. 8vo. 2 vols. Plates.
- Dibdin. Decameron. London. W. Bulmer. 1817. 8vo. 3 vols. Plates.
- Dibdin. Library Companion. London. W. Nicol. 1825. 8vo.
- Dibdin. Bibliomania. London. J. McCreery. 1811. 8vo. Wood-cuts.
- Dibdin. Bib. Tour in France and Germany. London. W. Nicol. 1829. 3 vols. 8vo. Plates.
- Dibdin. Bib. Tour in N. England and Scotland. London. J. Bohn. 1838. 2 vols. 8vo. Plates.
- Dibdin. Greek and Latin Classics. London. J. Goenell. 1804. 8vo.
- Ovid. John Gower's translation of "The Festivals." Cambridge. Roger Daniel. 1640. 12mo.
- Herman Hugo. Pia Desideria. London. 1690. Copperplate engravings.
- Lud. Vives. Vera Sapientia. Dublin. Geo. Grierson. 1730.
- Epictetus. Enchiridion. Glasgow. R. and A. Foulis. 1750.
- Ozell. Trans. Boileau's Lutrin. Glasgow. R. and A. Foulis. 1752.
- Young. Night Thoughts. Glasgow. Andrew Foulis. 1776. 2 vols.
- Homer. The Iliad. Glasgow. Andrew Foulis. 1778. 2 vols.
- Horace. Milman. London. John Murray. 1849. 8vo. Illustrations.
- F. Meres. Wit's Commonwealth. London. W. Stansby. 1693. 3 vols. Speaks of "mellifluous and honey-tongued Shakspeare," and of his "sugared sonnets among his friends."—P. 282, vol. iii.
- Robert Langland. Vision of Piers Plowman. London. Robert Crowley. 1550. Black-letter. 4to.
- Newton. Philosophiæ Naturalis Principia Mathematica. Comment. of T. le Seur and F. Jacquier. Glasgow. G. Brookman. 1833. 8vo. 2 vols.
- Guillem. Display of Heraldrie. London. Richard Blome. 1660. folio. Shields coloured.
- Feltham. Resolves. London. Henry Serle. 1634. 4to.
- Charron. On Wisdom. Sennard's translation. London. 1670.
- Cartwright. Harmonia Evangelica. Leyden. F. Hacke. 1647. 4to.
- Cocker. Arithmetic. 44th Edition. London: for Ed. Midwinter. 1677.
- Travels before the Flood. London: for G. G. and T. Robinson. 12mo. 2 vols.
- John Collier. Tim Bobbin. York. T. Wilson & Sons. 1818. 12mo. Curious cuts.
- Puckle. The Club. 5th Ed. London. 1710. 7th Ed. Dublin. 1743. 12mo. Portrait.
- Anacreon. Forster's Edition. London. J. Bulmer. 1802. Fine Greek type and illustrations.
- Emp. Julian. Select Works. J. Duncombe's translation. London. J. Nichols. 1784. 8vo. 2 vols. in one.
- Emp. Julian. Les Césars. Paris: Chez D. Thierry. 1683. 4to. Portrait of F. W., Grand Elector of Brandenburg.
- Fortescue. On the Laws of England. London. T. Wight and B. Norton. 1599.
- Duport. Psalms of David, in Greek hexameters. Cambridge. J. Field. 1666. 4to.
- Clement Marot. Pseaumes de David. Charenton. P. des Hayes. 1613. 32mo; with music.
- Sternhold and Hopk'ns. Psalms with music. London. 1560. 48mo.
- Owen. Epigrammata. Amsterdam. J. Jansson. 1697. 32mo. Portrait.
- Leigh Hunt. Follage. London. C. H. Reynell. 1818. 12mo.
- Tristram Risdon. Survey of Devon. London. W. Mears. 1723. 8vo.
- Verstegan. Restitution, etc. London. J. Bill. 1628. 4to.
- Camden. Remaines, etc. London. J. Leggatt. 1628. 4to.
- W. Musgrave. Belgium Britannicum. Exeter. 1719. 8vo.
- Milton. De Doctrina Christiana: translated by Sumner. London. Charles Knight. 1825. 4to.
- Milton. His Latin and Italian Poems: translated by Cowper. London: for J. Johnson, printer, J. Seagrave, Chichester. 1803. 4to. Flaxman's illustrations.
- Milton. Minor Pieces. English, Italian and Latin; with T. Warton's Notes. London. J. Dodsley. 1785. 8vo.
- Cotton Mather. Magnalia Christi Americana. London: for Thomas Parkhurst. 1702. folio.
- Nibelungenlied. Otto and George Wigand's edition. Leipzig. 1840. 4to. Fine wood-cuts.
- Nibelungenlied. Lettison's translation. London: for Williams and Norgate. 1850. 8vo.
- Dante. Vita Nuova. Theodoro Martin's Translation. London. Chiswick Press. 1862. 8vo.
- Lays of the Minnesingers. London. Ric. Taylor. 1825. "Alero Flammam" device.
- Ballads, Seventy-nine black-letter. 1559-1597. London. Lilly's reprint. 8vo.

- H. B. Wheatley. *Of Anagrams*. Hertford. S. Austen. 1869. 12mo.
 R. Southey. *Omniana*. London. Longman. 1812. 12mo. 2 vols.
 Shaftesbury, Antony, Earl of. *Characteristics of Men, Manners, etc.* London. No printer's name. 1757. 3 vols.
 Roger Wilbraham. *Cheshire Glossary*. London: for T. Rodd by R. Taylor. 1826. Bp. Thirlwall's copy.
 Sydney Smith. *Sketches of Moral Philosophy*. London. Longman. 1850. 8vo.
 Valerian Krasinski. *Religious History of the Slavonic Nations*. Edinburgh. Johnstone and Hunter. 1850. 8vo. Portraits.
 Mrs. Henry Stisted. *Bye-ways of Italy*. London. John Murray, Albemarle Street. 1845. 8vo. Plates by Col. Stisted
 Louis XIV. *Medailles*. Paris. Fleurimont. Contemporary. 4to.
 Geo. Woodley. *Cornubia: a poem*. London: for Longman, by Mitchell, Truro. 1819.
Virtuoso's Companion. London. 1794. 4 vols.
Breviarum Metense. L. J. de Montmorency Laval auctoritate. Metz. J. B. Collignon. 1778. 4 vols. 12mo.
Trial of the Regicides. London. 1679.
 Bouchier. *Sermon, etc.* MS. with ornamental borders: presented to Chief Justice Littleton and Mrs. Ann Littleton. 1639.
 Antony à Wood. *Historia et Antiquitates Universitatis Oxoniensis*. Oxford. à Theat. Sheldon. 1674. folio. Portraits.
 Theophilus Gale. *Court of the Gentiles*. Oxford. H. Hall for T. Gilbert. 1672. 4to.
Epistolæ Obscurorum Virorum. Leipsic. Trubner. 1869.
Alciati Emblemata. Antwerp. Ch. Plantin. 1581. Cuts.
Rara Mathematica. J. O. Halliwell. Cambridge. Metcalfe and Palmer. 1839.
 Vegetius Renuatus. *Mulomedicina*. Mannheim. Soc. Lit. 1781. 16mo. Bracy Clark's MS. notes.
 Bruno Seidelius. *De Morbis Incurabilibus*. Leyden. P. Hacke. 1662. 12mo.
 H. D. Gaubius. *Pathologia Medicinalis*. Leyden: apud S. and J. Luchtmans. 1781. 8vo. Dr. Widmer's copy.
 Hippocrates. *Coacæ Prænotiones*. L. Duret Interp. Paris: apud Gaspar Maturas. 1658. folio.
 John Hunter. *On the Blood, etc.* London. J. Richardson. 1794. 4to. Reynolds' Portrait.
 N. Bailey. *Etymological English Dictionary*. London: for J. Darby, etc. 1726. 8vo. 2 vols.
 G. S. Faber. *The Mysteries of the Cabiri*. Oxford. Univ. Press. 1803. 8vo. 2 vols.
 Young. *Night Thoughts*. London. C. Whittingham, for T. Heptinstall. 1793. Portrait. Royal 8vo.
 Ballantyne Press, *History of: in connection with Sir W. Scott*. Edinburgh. Ballantyne & Co. 1871. 4to.
 Herman Moll. *Geographica Classica*. London. Bowler and Carver. No date. 32 maps. 4to.
 Abraham Ortelius. *Atlas*. London. J. Norton and J. Bell. 1606. folio. Dedicated to James I. Portrait of Ortelius. Previously published at Antwerp, and dedicated to Philip II.
 Vincenzo Maria Coronelli. *Atlas*. Venice. Domenico Paduani. 1690. folio.
 Matthæus Scutter. *Atlas*. Amsterdam. 1750. folio.
 J. Janssonius. *Ancient Atlas*. Descriptions in black-letter. folio.
Roma Vetust: hoc est: Edificia ejus præcipua, suis quæque locis.
 Heriot. *Travels in Canada*. London. T. Gillet. 1867. 4to. Plates.
 Chappell. *Newfoundland and Labrador*. London. R. Watts. 1818. 8vo.
 European Settlements in America. London. Dodsley. 1777. 8vo. 2 vols.
 Rochefoucauld-Liancourt. *Travels*. London. J. Phillips. 1799. 4to.
 Kalm. *Travels*. Warrington. W. Eyres. 1770. 8vo. 3 vols.
 Carver. *Travels*. Dublin. S. Price. 1779. 8vo.
 Nicholson. *British Empire in America*. London. J. Nicholson. 1703. 8vo. 2 vols.
 Hugh Gray. *Letters from Canada*. London. Longman. 1809. 8vo.
 Bolton. *Description of Upper Canada*. London. 1809. 4to.
 Gabriel Sagard Deodat. *Histoire du Canada*. Paris. Chez Claude Sonnius. 1636.
 Marc Lescarbot. *Histoire de la Nouvelle France*. Paris. Chez Adrian Perier. 1618. Maps.
 Lahontan. *Nouveaux Voyages en Amerique*. La Haye. Chez les Freres Honore. 1703. 12mo. 2 vols.
 Louis Hennepin. *Nouveaux Voyages*. Amsterdam. Chez Adrian Braakman. 1704. 12mo.
 Charlevoix. *Voyage to North America*. Dublin: for John Exshaw and James Potts. 1766. 8vo. 2 vols.

14. MEDALS, PORTRAITS, PHOTOGRAPHS, VIEWS, ETC.

Medal struck at Mayence in 1837, in honour of Gutenberg. On the obverse, Thorwaldsen's Statue. On the reverse, Gutenberg holding up a separate metal type to one bearing an engraved wooden block. Artist: H. Lorenz. Rome.

Medal in honour of Pierre Didot l'aîné, Typographe Français. On the obverse, the head of Didot. On the reverse, a Press—"Presse Jules Didot," surrounded by the legend "Horace. Virgile, Racine, La Fontaine, ed. in folio." Veyrat fecit. 1823.

The Shakspeare Tercentenary Medal.

Medals of Milton, La Fontaine, Boerhaave, Cervantes, Fenelon, Addison, Congreve, Charles V., Goujon, Dante, Oxenstierna, De Cornerin, Ducange, George Canning, Peter Paul Rubens, Agassiz.

Wittenberg medal. Luther on metal in a frame. Plaque of Calvin.

Portraits, etc.

W. Caxton, in Ames. Laurence Coster, in Meerman.

Gutenberg, from the Statue at Strasburg.

Froben, in Knight's Life of Erasmus.

Paul Manutius. Aldus Manutius. Robert Stephens.

Brunet, in Bibliophile Français.

Thuanus (De Thou), in Collinson's Life of T.

Lady Margaret, patroness of Caxton, W. de Worde and Pynson, in Dr. Hymers' edition of the Funeral Sermon printed by Wynkyn de Worde.

Andrew Marvell. Henry Spelman. Leland. Geo. Hearn. Jno. Strype. W. Somner. Justel. Chapman (Homer). Gerard (Herbal). Lydgate. Gower. Lilly. Fosbrooke. Bewick. Duke of Roxburgh, 1804. J. Evelyn. Charles Knight. Coleridge. J. O. Halliwell.

Volume of Danish Portraits. Copenhagen. 1806.

Two Photographs of Gutenberg's Statue at Strasburg. A Photograph of Gutenberg's Statue at Mayence. A Photo. view of Mayence. Jügel's Views on the Rhine. 1829: before Steam.

Death of Bede. The First Proof. Press of Badius Ascensius.

Interior of the Library of St. John's College, Cambridge; of Trinity College, Cambridge the Bodleian.

Interior and Exterior Views of Westminster Abbey and St. Paul's, London.

15. SPECIMENS OF THE EARLY TORONTO (YORK) PRESS.

Upper Canada Gazette, or American Oracle. 1793. William Waters and Titus G. Simons printers.

Peter Russell's Proclamation. Dec. 15, 1793. Same printers.

Upper Canada Gazette, or American Oracle. 1803-1807. J. Bennett, printer.

Almanac. 1804. J. Bennett, printer. Almanac. 1815. John Cameron, printer.

English Acts of Parliament relating to Upper Canada and Provincial Statutes of Upper Canada from 1792. 2 vols. 4to. R. C. Horné, printer. 1818.

Upper Canada Gazette and Weekly Register. 1824. Charles Fothergill, printer.

Upper Canada Gazette and U. E. Loyalist. Jan. 5, 1826. June 30, 1827. R. Stanton, printer.

Gospel of St. Matthew in Otipchway. York. Printed at the Colonial Advocate Office, by James Baxter, printer. 1831.

Sibbald's Canadian Magazine. January, 1833.

Todd's Manual of Orthoepy. 4th Edition. Printed at the Office of the Guardian. York. 1833.

Walton's York Commercial Directory and Street Guide. Thomas Dalton, printer. 1834.

Patrick Swift's Almanac. 1834.

Warren's Selection of Church Music. Robert Stanton, printer. 1835

Toronto Almanac and Royal Calendar. 1839. Printed at the Palladium Office, York Street.

Toronto Recorder. July 30, 1834. Geo. Perkins Bull, printer.

Commercial Herald. Feb. 21, 1838. Hackstaff and Rogers, printers.

The Advocate. No. 539. Oct. 16, 1834. Baucroft and Baxter, printers.

Correspondent and Advocate. June 8, 1836. W. L. Mackenzie, printer.

The Observer. Jan., 1828. John Carey, printer.

The Courier. Feb. 29, 1832. Geo. Gurnett, printer.

The Sapper and Miner. Oct. 25, 1832. G. W. Thompson, printer.

Palladium. May 9, 1838. Charles Fothergill, printer.

The Patriot. Jan. 14, 1834. T. Dalton, printer.

Canadian Freeman. April 17, 1828. Francis Collins, printer.

Mackenzie's Gazette. June 8, 1839. Rochester, N.Y.

The Maple Leaf. 4to. Henry Rowsell. 1848.

16. SPECIMENS OF THE EARLY QUEBEC PRESS.

- Quebec Gazette. June 21, 1764. Printers, Brown and Gilmore (*fac-simile*).
 Quebec Gazette. May 22, 1770. John Neilson, printer. Aug. 14, 1794, to April 21, 1803.
 The same.
 From the same press. The Laws of Lower Canada. On the title-page is a copy of the seal of the first Province of Quebec. The central device is the King pointing to a map of Canada; below in the exergue, "Extensa gaudet agnoscere meta." The whole surrounded by the legend, "Sigillum Provinciæ Nostræ Quebecensis in America."
 The Times: Cours du Temps. 11 Mai, 1795. Quebec, à la Nouvelle Imprimerie.
 Nouvel Alphabet. Quebec, à la Nouvelle Imprimerie, Rue du Palais. 1797.
 Le Canadien. Nov., 1806. March, 1810. Printer, Charles Roi.
 Copy of Dilworth's English Spelling Book, with the inscription, "Ce livre appartient à Louis Chéniquy. Quebec, 1803."
 Smith's History of Canada. 2 vols. 8vo. John Neilson. 1815.
 Quebec Almanac for 1819: pp. 237. J. Neilson, 3 Mountain Street.
 Hawkins' Picture of Quebec, with Historical Recollections. Neilson and Cowan. 1834.

17. SPECIMENS OF THE EARLY MONTREAL PRESS.

- Proclamation of Lieut. Gov. Simcoe, dated at Kingston, July 9, 1792, but printed at Montreal by Fleury Mesplet.
 From the Press of Nahum Mower: A Concise Introduction to Practical Arithmetic, by the Rev. John Strachan, Rector of Cornwall, Upper Canada.
 Smart's Sermon on the Death of General Brock, preached at Brockville, Nov. 15th, 1812.
 Montreal Herald: 1811-1814. William Gray, printer.
 Report. Loyal and Patriotic Society of Upper Canada. Wm. Gray, 1817.
 Letters of Veritas. Montreal. W. Gray. 1815. 8vo.
 Letters of Nerva. Montreal. W. Gray. 1815. 8vo.
 Dr Strachan's Sermon on the Death of the Hon. R. Cartwright. W. Gray. 1816.
 Canadian Courant. Montreal, Wednesday, Dec. 29, 1819. Vol. xiii. No. 35. Nahum Mower printer.
 Canadian Review, 1824-1826. E. V. Sparhawk, printer. Montreal.
 Canadian Magazine and Literary Repository. Montreal, 1824.
 Hawley's Quebec, The Harp, etc. Montreal. A. Ferguson. 1829. 12mo.
 Hawley's The Unknown, etc. Montreal. J. H. Hoisington & Co. 1831. 12mo.
 Kidd's Huron Chief, etc. Montreal. Office of Herald and New Gazette. 1830. 12mo.

18. SPECIMENS OF THE EARLY NIAGARA PRESS.

- The Imposing Stone of the First Printing Press of Upper Canada. Presented by Mr. R. C. Gwatkin. The following inscription has been cut upon it. "Imposing Stone of the first Printing Press in Upper Canada, at Newark (Niagara), 1793. Teste W. Kerby, Niagara, 1873."
 No. 1, Vol. i., of the Upper Canada Gazette, or American Oracle. April 13, 1793. Louis Roy, printer: at Newark or Niagara.
 Vol. ii. of the same periodical is printed by G. Tiffany.
 In Vol. iii. the name of Titus G. Simons appears as that of the printer. In the autumn of 1798 the paper is issued at York: "W. Waters and T. G. Simons, printers."
 "A Proclamation to such as are desirous to Settle on the Lands of the Crown in the Province of Upper Canada," is printed by G. Tiffany at Newark, in 1795. This document is a reprint of one dated at Quebec, Feb. 7, 1792.
 Tiffany's Almanac for 1802.
 Niagara Spectator, No. 12. 1818. Amos McKenney, printer.
 Niagara Gleaner. Feb. 11, 1819. Andrew Heron, printer.
 David Thompson. History of the Late War. Niagara. T. Sewell. 1832.
 St. David's Spectator. No. 20, 1816. Printed for the Proprietors.

19. SPECIMENS OF THE EARLY KINGSTON PRESS.

- Dr. Strachan's Sermon on the Death of Dr. John Stuart. Printed by Charles Kendall, Kingston, 1811.
 Kingston Chronicle. 1810. Vols. i. and ii. Printed for the Editors.
 Kingston Gazette. Nov. 17, 1812. Printer, Stephen Miles. (Obituary of Gen. Brock.) Other numbers.
 The Upper Canada Herald. Kingston, April 4, 1832. No. 633. Vol. xiy. T. H. Bentley, printer.
 Port Hope Gazette. Nov. 29, 1845. W. Furby, printer.

20. SPECIMENS OF THE EARLY HALIFAX PRESS.

- Halifax Gazette, July 28, 1763. Printer, Antony Henry.
 Perpetual Acts of Nova Scotia. Printer, Robert Fletcher. 1767. folio.

21. SPECIMENS OF THE EARLY BOSTON PRESS.

- The New England Courant: No. 80. Feb. 11, 1723. Printed and sold by Benjamin Franklin in Queen Street, Boston.
 Boston Gazette. May 12, 1770. (Account of the Boston "Massacre.")
 Jonathan Edwards' Dissertations. Printer, S. Kneeland. 1765.
 Hubbard's Indian Wars. Printer, John Boyle. 1775.
 New England Weekly Journal. April 8, 1728. Boston. S. Kneeland and T. Green. Charter of William and Mary to Province of Massachusetts Bay, and Laws of said Province. Boston. S. Kneeland. 1759. folio. pp. 624.
 Increase Mather. Sermon on an Execution for Murder. Boston. Richard Pierie. 1687. 12mo.
 Cotton Mather. Sermon on a Man about to be Executed for Murder. Boston. Richard Pierie. 1687. 12mo.
 Samuel Willard. Mourner's Cordial. Boston. B. Harris and J. Allen. 1691. 12mo.
 Samuel Mather. Life of Cotton Mather, with sermons on his death. Boston: for S. Gerrick. 1729. Svo.

22. SPECIMENS OF THE EARLY PHILADELPHIA PRESS.

- A German work in 4to. Fragen, etc., von einen Knecht Jesu Christi. 1742. Philadelphia. Gedruckt und zu haben bey B. Franklin.
 Mackenzie's Travels. Arctic Regions. Svo. Philadelphia: for John Morgan. Printer, R. Carr. 1802.
 Philadelphia: Claypoole's Daily Advertiser. Feb. 25, 1793.
 Philadelphia Gazette and Daily Advertiser. July 12, 1800.
 Geographical View of Upper Canada. M. Smith. Philadelphia. J. Bioren for T. and R. Desilver. 1813. 12mo.
 New York Morning Post. Nov. 7, 1783. Morton and Horner, printers.
 New York Time Piece. Nov. 24, 1797.
 New York Herald. April 25, 1807.
 M. de Staël. Germany. New York. Eastburn Clark & Co. 1814. 12mo. 2 vols. Printed at Albany by E. and E. Hosford.

Other Papers.

- The North Georgia Gazette and Winter Chronicle, complete: put forth in MS. in the Arctic Regions during Capt. Parry's First Voyage towards the North Pole.
 Wilkes' North Briton, complete.
 The Kentish Post and Canterbury News Letter. Aug. 26-29, 1761.
 Evening Mail. London. Monday, Jan. 23, 1793. Printed logographically by J. Walker, Printing House Square.
 London Times. Jan. 1, 1788. (*fac-simile*.)
 London Times. Jan. 5, 1795.
 London Times. Oct. 3, 1798.
 Mercurius Domesticus. London. Dec. 19, 1679. (*fac-simile*.)
 Edinburgh Advertiser: No. 1174. Year 1774. (Contains Letter of Am. Congress to the People of England.)
 Glasgow Advertiser. Vol. for 1789. J. Mennon, printer.
 English Mercuric: No. 50. July 23, 1588. London. *fac-simile*.
 Weekly Newes: No. 19. Jan. 31, 1606. London. *fac-simile*.
 The Gazette: No. 432. Sep. 5, 1658. London. *fac-simile*.
 London Courier. Mar.-Dec., 1815.
 The Age of Science. Jan. 1, 1977. A Newspaper of the xxth Century, by Merlin Nostradamus.
 Wreck of Westminster Abbey. London. C. Stalker. 2001.
 English Revolution of 1667. By Lord Macaulay's New Zealander. London. Warn. 3867.

MONTHLY METEOROLOGICAL REGISTER, AT THE MAGNETICAL OBSERVATORY, TORONTO, ONTARIO—JUNE, 1877. Latitude—43° 39' 4 North. Longitude—5h. 17m. 33s. West. Elevation above Lake Ontario, 108 feet.

Table with columns: Day, Barom. at temp. of 32°, Temp. of the Air (6 A.M., 10 P.M., Mean), Excess of Moan above Average (0, 2, 10 A.M., P.M., M.N.), Tension of Vapour (0, 2, 10 A.M., P.M., M.N.), Humidity of Air (0, 2, 10 A.M., P.M., M.N.), Direction of Wind (6 A.M., 2 P.M., 10 P.M., Resultant), Velocity of Wind (6 A.M., 2 P.M., 10 P.M., Re-sultant, Mean), Rain In Inches, Snow In Inches.

Day

...

REMARKS ON TORONTO METEOROLOGICAL REGISTER FOR JUNE, 1877.

NOTE.—The monthly means of the Barometer and Temperature include Sunday observations. The daily means, excepting those that relate to the wind, are derived from six observations daily, namely, at 6 A.M., 8 A.M., 2 P.M., 4 P.M., 10 P.M., and midnight. The means and resultants for the wind are from hourly observations.

Highest barometer 29.867 at 8 a.m. on 20th } Monthly range =
 Lowest barometer 29.100 at 10 p.m. on 9th } 0.767.
 { Maximum temperature 86.9 on 25th } Monthly range =
 { Minimum temperature 41.0 on 11th } 44.9.
 { Mean maximum temperature 71.73 } Mean daily range =
 { Mean minimum temperature 62.23 } 18.50.
 { Greatest daily range 28.6 from a.m. to p.m. of 23rd.
 { Least daily range 10.4 from a.m. to p.m. of 26th.
 Warmest day 25th; mean temperature 73.47 } Difference = 20.00.
 Coldest day 11th; mean temperature 62.87 }
 Maximum { Solar 134.90 on 1st and 25th } Monthly Range =
 Radiation { Terrestrial 31.90 on 11th } 102.1.
 Aurora observed on 3 nights, viz., 6th, 7th, and 11th.
 Possible to see Aurora on 17 nights; impossible on 13 nights.
 Raining on 14 days; depth, 0.900 inches; duration of fall, 25.9 hours.
 Mean of cloudiness, 0.61.

WIND.

Resultant direction, S. 38° W.; resultant velocity, 0.37 miles.
 Mean velocity, 7.11 miles per hour.
 Maximum velocity, 24.0 miles from 1 p.m. to 2 p.m. of 4th.
 Most windy day, 22nd; mean velocity, 14.00 miles per hour.
 Least windy day, 2nd; mean velocity, 2.70 miles per hour.
 Most windy hour, 2 p.m.; mean velocity, 11.61 miles per hour.
 Least windy hour, 4 a.m.; mean velocity, 3.66 miles per hour.

Fog on 2nd, 8th, 9th, 21st and 26th.

Thunder on 2nd, 3rd, 11th, 20th, 21st, 28th, 29th and 30th.
 Lightning on 2nd, 11th, 13th, 14th, 20th, 21st, 29th and 30th.
 Solar halos on 5th and 6th.
 Dew on 13 days. Fireflies on 1st.

COMPARATIVE TABLE FOR JUNE.

YEAR.	TEMPERATURE.			RAIN.		SNOW.		WIND.	
	Mean	Maxi- mum.	Mini- mum.	No. of days.	Inches.	No. of days.	Inches.	Direction.	Mean Velocity.
1840	63.2	81.4	32.2	7	2.020	...	...	S 70 E	8.32
1850	64.3	85.6	34.2	10	3.345	...	...	S 60 W	4.84
1851	59.2	78.2	37.0	11	2.695	...	...	S 2 W	4.82
1852	69.8	86.1	37.2	9	3.160	...	...	S 76 W	4.69
1853	65.5	87.6	39.2	9	1.250	...	...	N 1 W	3.73
1854	64.1	82.5	35.2	57.3	9	1.460	...	N 24 E	4.16
1855	59.9	81.5	35.3	17	4.070	...	...	N 69 W	6.70
1856	62.1	89.2	42.0	13	3.200	...	...	S 21 W	5.30
1857	56.9	76.0	35.0	21	5.060	...	...	N 49 W	7.60
1858	66.2	90.2	42.6	12	2.943	...	...	S 20 E	5.63
1859	58.3	86.4	32.2	16	4.085	2	1nap	N 77 E	7.19
1860	63.2	81.6	49.2	32.4	2.130	...	...	N 44 W	7.61
1861	61.3	87.8	41.6	13	2.329	...	...	N 30 W	6.11
1862	60.5	85.8	39.4	10	1.007	...	...	N 26 W	6.88
1863	60.1	84.8	37.4	13	1.662	...	...	N 50 W	5.24
1864	63.0	83.4	34.8	5	0.570	...	...	N 55 W	4.63
1865	64.6	90.2	43.0	7	2.005	...	...	S 30 W	4.06
1866	60.2	80.5	40.0	16	2.790	...	...	S 16 W	6.99
1867	64.3	88.8	43.0	44.6	0.886	...	...	S 84 E	4.13
1868	62.0	84.2	38.0	22	2.217	...	...	N 10 E	5.26
1869	59.4	81.4	36.4	45.0	22	4.372	...	N 80 W	5.23
1870	67.3	88.4	45.0	38.4	16	8.090	...	N 17 E	5.14
1871	61.4	83.0	41.8	41.2	13	3.340	...	N 60 W	6.57
1872	63.7	88.0	41.8	46.2	8	3.148	...	N 80 W	3.80
1873	63.7	88.5	40.0	48.6	10	6.880	...	N 18 E	6.43
1874	62.6	88.0	44.2	49.4	13	1.768	...	N 44 W	6.82
1875	61.0	86.8	37.4	7	1.822	...	...	N 69 W	7.35
1876	65.5	87.2	44.2	43.0	8	1.590	...	S 7 W	6.32
1877	62.4	85.9	41.1	14	0.900	...	...	S 38 W	7.11
Results to 1876	61.83	89.78	39.61	47.17	11.54	2	820	N 64 W	6.36
Excess for 77	0.52	0.86	1.49	2.37	2.461	920	...	...	1.75

METEOROLOGICAL REGISTER.

xliiii

MONTHLY METEOROLOGICAL REGISTER, AT THE MAGNETICAL OBSERVATORY, TORONTO, ONTARIO—JULY, 1877.

Latitude—53° 39' 4" North. Longitude—5h. 17m. 33s. West. Elevation above Lake Ontario, 108 feet.

Day	Barom. at temp. of 32°.			Temp. of the Air.			Excess of Mean above Normal.			Tension of Vapour.			Humidity of Air.			Direction of Wind.			Velocity of the Wind.			Inches Rain	Inches Snow				
	9 A.M.	2 P.M.	10 P.M.	9 A.M.	2 P.M.	10 P.M.	Mean	10 P.M.	Mean	0 A.M.	2 P.M.	10 P.M.	0 A.M.	2 P.M.	10 P.M.	0 A.M.	2 P.M.	10 P.M.	6 A.M.	2 P.M.	10 P.M.			Resol. tant.	Mean		
1	29.260	29.270	29.313	71.0	79.0	86.0	71.68	8.20	—	—	—	—	—	—	—	—	—	—	8	W	W	872	W	15.33	16.89		
2	649	678	654	69.6	71.2	67.5	63.97	2.53	364	357	374	361	71	40	79	62	79	62	W	8 W	8 W	841	W	6.18	7.49		
3	419	383	478	69.6	74.6	64.3	65.40	1.30	401	626	603	600	70	73	83	79	83	79	W	W	W	N 47	E	3.05	5.50		
4	691	619	667	69.9	77.0	62.2	68.53	1.65	434	412	440	414	87	44	78	82	78	82	E	E	E	873	W	1.21	7.98		
5	692	619	667	69.4	77.0	66.5	70.03	2.98	451	525	480	480	86	62	74	67	67	67	N	N	N	N 25	W	3.51	7.17		
6	661	668	690	67.3	70.3	63.8	66.12	1.16	373	454	334	378	70	50	66	59	60	59	S	S	S	8 18	W	1.54	6.72		
7	727	690	663	67.8	79.1	66.8	69.30	1.93	298	384	390	361	62	39	59	51	62	59	N	N	N	8 33	W	4.75	6.58		
8	660	440	380	63.5	84.5	69.0	72.83	5.30	—	—	—	—	—	—	—	—	—	—	8	W	8 W	8 33	W	7.42	7.70		
9	390	267	282	30.07	80.4	71.5	73.12	4.38	607	617	466	650	90	60	60	68	60	68	W	W	W	8 71	W	4.79	7.41		
10	395	440	615	45.58	81.4	73.0	63.65	9.5	1.83	378	390	299	348	09	49	51	54	54	N	N	N	N 59	W	5.96	7.77		
11	680	507	626	60.53	87.8	72.3	82.14	17	3.73	309	354	403	356	64	45	84	68	68	W	W	W	N 67	W	6.34	8.71		
12	667	611	609	63.22	84.2	67.2	71.27	3.27	345	330	380	356	68	28	54	49	49	49	N	N	N	8 70	E	8.53	9.71		
13	743	709	652	70.12	70.1	58.5	62.82	6.27	347	323	379	349	67	44	77	63	63	63	E	E	E	8 70	E	3.80	6.27		
14	658	604	694	61.73	85.9	73.7	64.76	20	1.98	373	430	430	419	76	62	70	66	66	N	N	N	8 58	E	4.44	5.31		
15	680	620	620	63.67	89.0	84.0	72.07	8.3	4.06	—	—	—	—	—	—	—	—	—	0	0	0	8 58	W	4.60	6.95		
16	485	423	380	43.12	87.4	74.3	76.23	7.95	471	689	549	632	77	45	64	60	60	60	N	N	N	8 11	W	3.79	5.49		
17	426	416	424	41.92	87.2	67.0	71.32	2.97	631	665	505	636	95	61	70	73	80	73	W	W	W	8 51	W	6.40	7.38		
18	486	397	226	33.68	85.6	75.6	67.07	18	1.63	639	647	594	680	83	62	88	80	80	N	N	N	8 6	W	4.35	5.18		
19	125	232	309	23.12	85.0	74.4	61.68	0.2	4.40	686	304	600	600	95	40	92	75	75	W	W	W	8 62	W	6.60	7.83		
20	352	435	625	44.60	60.4	68.6	68.63	67	4.77	409	439	399	438	80	61	80	75	75	W	W	W	8 64	W	7.0	6.98		
21	622	674	711	61.62	65.7	71.0	61.63	67	4.90	378	397	462	408	86	53	85	72	72	W	W	W	8 3	E	2.78	5.92		
22	800	816	830	81.92	61.0	66.0	69.08	33	0.14	—	—	—	—	—	—	—	—	—	N	N	N	8 45	W	1.44	4.09		
23	893	869	878	87.33	62.3	75.6	70.87	47	2.02	617	615	442	493	92	68	68	67	67	N	N	N	8 38	W	0.44	4.27		
24	881	792	608	78.32	65.4	78.8	67.21	55	3.10	439	443	490	465	71	45	74	62	62	W	W	W	8 38	W	2.24	5.11		
25	682	578	644	69.27	69.0	86.0	74.17	60	8.45	440	463	534	489	62	30	63	64	64	N	N	N	8 59	W	3.23	5.28		
26	556	553	639	54.53	72.3	73.3	63.67	67	6.30	631	607	740	686	67	86	90	82	81	W	W	W	8 15	E	2.26	3.69		
27	601	584	585	60.28	69.7	80.2	69.47	62	4.25	699	502	673	726	96	78	94	96	96	E	E	E	8 10	W	4.84	6.10		
28	689	646	482	62.87	69.4	82.7	71.97	60	6.73	804	716	733	93	72	91	80	80	80	E	E	E	8 14	W	1.46	4.20		
29	460	440	480	40.60	69.0	82.0	73.07	47	6.44	—	—	—	—	—	—	—	—	—	E	E	E	8 13	W	6.33	8.16		
30	552	645	604	60.47	71.0	82.7	74.17	60	8.60	661	637	479	628	74	57	67	57	57	N	N	N	8 13	W	5.42	7.02		
31	745	767	754	75.78	67.9	75.9	66.57	0.2	4.18	629	452	464	464	60	50	60	61	61	N	N	N	8 77	E	6.33	8.16		
29.5725	29.523	29.550	29.580	63.61	77.66	86.86	69.91	2.00	463	600	477	478	78	54	73	67	67	67	N	N	N	...	...	5.08	9.74
																										6.66	2.720

REMARKS ON TORONTO METEOROLOGICAL REGISTER FOR JULY, 1877.

NOTE.—The monthly means of the Barometer and Temperature include Sunday observations. The daily means, excepting those that relate to the wind, are derived from six observations daily, namely, at 6 A.M., 8 A.M., 2 P.M., 4 P.M., 10 P.M., and Midnight. The means and resultants for the wind are from hourly observations.

Highest Barometer.....29.907 at 8 a.m. on 23rd. } Monthly range =
 Lowest Barometer.....29.120 at 6 a.m. on 19th. } 0.781.

{ Maximum temperature.....88°7 on 16th. } Monthly range =
 { Minimum temperature.....56°3 on 7th. } 38°4.
 { Mean maximum temperature.....80°15 } Mean daily range =
 { Mean minimum temperature.....56°54 } 28°59.
 { Greatest daily range.....33°2 from a.m. to p.m. of 16th.
 { Least daily range.....13°4 from a.m. to p.m. of 31st.

Warmest day.....26th; mean temperature.....76°90 } Difference=14°08.
 Coldest day.....13th; mean temperature.....62°82 }
 Maximum { Solar.....145°5 on 26th. } Monthly range =
 Radiation { Terrestrial.....43°6 on 21st. } 10°09.

No Aurora observed.
 Possible to see Aurora on 24 nights; impossible on 7 nights.
 Raining on 11 days; depth, 2.720 inches; duration of fall, 18.5 hours.
 Mean of cloudiness, 0.43.

WIND.

Resultant direction S. 62° W.; resultant velocity 2.42 miles.
 Mean velocity 6.66 miles per hour.
 Maximum velocity 31.0 miles, from 2 to 3 p.m. of 1st.
 Most windy day 1st; mean velocity 16.89 miles per hour.
 Least windy day 26th; mean velocity 2.63 miles per hour.
 Most windy hour 1 p.m.; mean velocity 10.45 miles per hour.
 Least windy hour 6 a.m.; mean velocity 4.02 miles per hour.

Fog on 19th and 29th.
 Dew on 20th, 21st and 23rd.
 Rain bows on 21st and 22nd.
 Solar halos on 2nd and 6th.
 Thunder on 3rd, 9th, 12th, 19th, 22nd, 26th and 27th.
 Lightning on 2nd, 5th, 8th, 9th, 12th, 16th, 17th, 18th, 26th and 27th.

COMPARATIVE TABLE FOR JULY.

YEAR.	TEMPERATURE.				RAIN.		SNOW.		WIND.		
	Mean.	Excess above average.	Maxi. mum.	Mini. mum.	Range.	No. of Days.	Inches.	No. of Days.	Inches.	Resultant Direction.	Mean Velocity, Miles.
1840	68.4	+ 1.0	88.6	46.2	43.4	4	3.415	...	...	S 6° W	0.75
1850	68.9	+ 1.5	86.2	61.6	34.6	12	5.270	...	...	N 81° E	4.35
1851	65.0	+ 2.4	82.7	46.5	36.2	13	6.265	...	...	N 60° W	0.89
1852	66.8	+ 0.6	90.1	48.5	41.6	8	4.025	...	...	N 43° W	0.23
1853	63.6	+ 1.8	91.3	41.6	49.7	10	0.916	...	...	S 48° E	0.23
1854	72.5	+ 6.1	98.0	47.6	55.5	19	4.895	...	...	S 49° W	0.57
1855	67.9	+ 2.5	92.8	49.2	43.0	13	3.244	...	...	S 19° W	0.73
1856	69.9	+ 2.6	96.6	49.5	47.1	8	1.120	...	...	N 79° W	1.57
1857	67.8	+ 0.4	86.6	47.0	39.6	16	3.478	...	...	S 68° E	0.81
1858	67.9	+ 0.5	88.0	52.0	33.0	13	2.611	...	...	N 15° E	1.13
1860	63.9	+ 3.5	88.0	44.7	43.3	12	4.236	...	...	N 66° W	1.45
1861	65.4	+ 2.0	84.5	47.0	37.6	16	2.655	...	...	N 74° W	1.43
1862	68.7	+ 0.7	91.5	48.2	47.3	15	6.344	...	...	S 59° W	1.42
1863	67.6	+ 0.2	85.2	48.0	35.5	15	3.408	...	...	N 18° W	0.40
1864	69.1	+ 2.3	90.2	49.0	41.2	8	1.332	...	...	N 61° W	2.23
1865	65.0	+ 2.4	85.0	45.8	37.2	11	2.470	...	...	N 86° W	2.28
1866	70.4	+ 3.0	94.0	47.8	46.2	12	6.390	...	...	S 79° W	0.93
1867	68.2	+ 0.8	94.0	48.2	45.8	16	1.965	...	...	N 48° W	1.40
1868	75.8	+ 8.4	93.4	59.0	54.4	5	0.510	...	...	S 57° E	0.72
1869	64.6	+ 2.9	84.9	49.8	35.1	13	4.610	...	...	S 67° W	2.01
1870	68.8	+ 1.4	87.4	48.0	39.4	16	1.894	...	...	S 78° W	1.59
1871	69.0	+ 1.1	88.4	47.8	40.6	11	1.255	...	...	N 88° W	1.65
1872	70.2	+ 2.8	99.0	62.2	43.8	13	2.297	...	...	N 67° W	1.19
1873	68.4	+ 1.0	87.5	47.5	40.0	11	1.913	...	...	S 75° W	1.71
1874	67.9	+ 1.6	83.5	44.4	39.1	11	3.350	...	...	N 88° W	1.26
1876	66.6	+ 0.8	88.0	46.4	41.6	6	1.810	...	...	S 88° W	1.69
1876	68.8	+ 1.4	92.9	46.2	46.7	15	3.290	...	...	N 78° W	1.63
1877	69.9	+ 2.5	83.7	60.3	38.4	11	2.720	...	...	S 62° W	2.42
Resultant	67.43	...	89.31	47.76	41.60	10.73	3.152	...	...	N 78° W	0.89
Excess +	2.48	...	0.81	2.64	3.16	0.27	0.432	...	...	...	1.52

REMARKS OF TORONTO METEOROLOGICAL REGISTER FOR AUGUST, 1877

NOTE.—The monthly means of the Barometer and Temperature include Sunday observations. The daily mean, excepting those that relate to the wind, are derived from six observations daily, namely, at 6 A.M., 9 A.M., 12 P.M., 3 P.M., 6 P.M., and midnight. The means and resultants for the wind are from hourly observations.

COMPARATIVE TABLE FOR AUGUST.

YEAR	TEMPERATURE.				RAIN.		SNOW.		WIND.	
	Mean	Excess above Average.	Maxi- mum	Mini- mum	No. of days	Inches	No. of days	Inches	Resultant Direc- tion	Mean Velocity.
1840	66.3	0	79	49	10	4.970	...	...	N 71 W 0.60	3.70
1850	66.8	+ 0.5	85	40	13	4.855	...	...	N 15 W 0.35	4.48
1851	63.6	- 2.7	79.5	42	10	1.360	...	...	N 63 W 0.40	4.63
1852	65.9	- 0.4	81.2	45.8	9	2.695	...	...	N 70 E 0.56	3.59
1853	68.0	+ 2.3	90.9	45.2	11	2.575	...	...	N 36 E 1.70	4.40
1854	68.0	+ 1.7	99.2	45.5	6	0.455	...	...	N 64 W 1.70	4.40
1855	64.1	- 2.2	83.5	41	11	4.35	...	...	N 63 W 1.04	6.97
1856	63.6	- 2.7	82.7	41.5	12	1.650	...	...	N 50 W 2.84	7.03
1857	65.3	- 1.0	84.2	46	13	5.265	...	...	N 77 W 1.51	0.38
1858	67.6	+ 1.3	84	44	11	3.890	...	...	N 69 W 1.57	6.50
1859	66.6	+ 0.3	82.2	45.8	11	3.900	...	...	N 36 W 1.62	5.86
1860	64.6	- 1.8	87	40.8	14	3.405	...	...	N 70 W 1.53	5.80
1861	65.6	- 0.8	85.2	47	16	2.953	...	...	N 8 E 0.46	4.21
1862	67.0	+ 1.3	89.5	42.8	16	3.483	...	...	N 18 W 1.67	5.98
1863	68.0	+ 0.3	94.0	42	12	2.205	...	...	N 61 W 1.80	4.89
1864	68.0	+ 2.3	94.0	47	16	5.050	...	...	N 70 W 1.38	4.75
1865	65.2	- 1.1	87.8	43.4	8	1.990	...	...	N 60 W 1.65	5.07
1866	64.8	- 1.6	87	42.4	14	4.457	...	...	N 69 W 2.58	5.16
1867	68.1	+ 1.8	90.2	42.2	10	2.440	...	...	N 76 W 1.25	4.52
1868	67.2	+ 0.9	84	40.8	13	1.615	...	...	N 68 W 1.01	0.15
1869	63.0	- 2.7	89	43.5	11	4.273	...	...	N 42 W 1.08	5.15
1870	67.1	+ 0.8	84	40	14	3.422	...	...	N 75 W 1.80	5.92
1871	67.4	+ 1.1	89.5	46	8	2.808	...	...	N 62 W 1.09	6.66
1872	69.0	+ 3.3	91.6	51	19	2.405	...	...	N 51 W 1.43	3.73
1873	68.6	+ 0.3	85.0	40.4	12	1.913	...	...	N 23 E 0.70	6.16
1874	67.1	+ 0.8	85.0	48	4	0.380	...	...	N 43 E 1.58	0.70
1875	65.2	- 1.1	81.0	44	14	1.880	...	...	N 56 W 1.58	0.70
1876	70.2	+ 3.9	88.8	53	2	11	...	...	N 81 W 0.23	0.57
1877	69.2	+ 2.9	83.1	60	14	3.165	...	...	N 85 W 0.69	0.00
Resultant for 1876	66.32	.....	86.89	44.75	10	73.2.784	...	...	N 62 W 1.67	5.38
Resultant for 1877	+ 2.84	.....	3.79	8.76	12	64.3.270.31	...	...	+	0.64

Highest Barometer..... 29.837 at 8 a.m. on 28th } Monthly range =
 Lowest Barometer..... 29.296 at 2 p.m. on 9th } 0.539.
 Maximum temperature..... 83.21 on 19th, 27th } Monthly range =
 Minimum temperature..... 58.56 on 16th } 29.6
 Mean maximum temperature..... 79.92 } Mean daily range =
 Mean minimum temperature..... 69.04 } 16.83
 Greatest daily range..... 23.56 from a.m. to p.m. of 6th.
 Least daily range..... 8.56 from a.m. to p.m. of 12th.
 Warmest day..... 28th; mean temperature 79.92 } Difference = 11.05.
 Coldest day..... 12th, mean temperature 62.17 }
 Maximum { Solar..... 13.90 on 4th } Monthly range =
 Radiation { Terrestrial..... 45.4 on 5th } 33.6.
 Aurora observed on 1 night, viz., 18th.
 P. visible to see Aurora on 24 nights; impossible on 7 nights
 lasting on 14 days; depth, 3.165 inches; duration of fall, 27 5 hours.
 Mean of Cloudiness, 0.60
 WIND.
 Resultant direction, N 85° W; Resultant Velocity, 0.69 miles.
 Mean Velocity, 0.00 miles per hour
 Maximum Velocity, 20.0 miles, from 4 to 5 p.m. of 10th.
 Most Windy day, 3rd; Mean Velocity, 9.64 miles per hour
 Least Windy day, 28th; Mean Velocity, 3.00 miles per hour
 Most Windy hour, noon; Mean Velocity, 9.10 miles per hour.
 Least Windy hour, 7 p.m.; Mean Velocity, 4.02 miles per hour
 Fog on 14th and 15th.
 Dew on 16 mornings.
 Polar haloe on 13th and 22nd.
 Lightning on 6th, 7th, 8th, 9th, 13th, 14th, 15th, 16th, 18th, 22nd, 24th, 29th and 31st.
 Thunder on 2nd, 7th, 8th, 9th, 12th, 14th, 16th, 18th, 25th and 29th.

PROSPECTUS
OF THE
ENCYCLOPÆDIA BRITANNICA,
NINTH EDITION.

*Edited by THOMAS SPENCER BAYNES, LL.D., Professor of
Logic, Rhetoric, and Metaphysics, in the University of St. Andrews.*

IN submitting to the Public the PROSPECTUS of a New Edition of the ENCYCLOPÆDIA BRITANNICA, it is almost needless to explain that during the interval which has elapsed since the publication of the Eighth Edition, great advances have been made in every department of knowledge, and particularly in the Arts and Sciences. It has accordingly been found necessary to adopt a scheme of very extensive alteration in the preparation of the NINTH EDITION, amounting virtually to a reconstruction of the entire work. Thus, while the general character of the ENCYCLOPÆDIA will remain substantially unchanged, the whole of the matter retained from the last Edition will be subjected to thorough revision, and the necessary additions (estimated at considerably more than half the whole work) provided for from the best sources. The utmost care will be taken in selecting headings and deciding on methods of treatment, so as to embody the greatest amount of general information in the most accessible form. The more important topics will be dealt with systematically and at length, and particular attention will be given to all subjects of general and popular interest. The object aimed at is the production of a work which shall possess the highest character and value as a Book of Reference adapted in all respects to the circumstances and requirements of the time.

One of the distinctive features of the ENCYCLOPÆDIA BRITANNICA has always been the large number of original articles contributed by specialists in their respective departments.

It is now upwards of a century since the ENCYCLOPÆDIA BRITANNICA made its first appearance. The FIRST Edition, in Three volumes quarto, published in 1771, was little more than a Dictionary of Arts and Sciences; the SECOND (1778-1783), in Ten volumes, introduced the branches of Biography and History. The THIRD Edition (1797) extended to Eighteen volumes, to which a supplement of Two volumes was added. The FOURTH (1810), in Twenty volumes, was reproduced in a Fifth and Sixth with little alteration; and a very important addition was made, between the years 1815 and 1824, in a Supplement of Six volumes. The two subsequent Editions, the SEVENTH (1830-1842) and the EIGHTH (1852-1860), each in Twenty-one volumes, were in every respect greatly superior to their predecessors, and adequately supplied the demand for general information at the time of their publication.

It is proposed that the Ninth Edition shall be on the same scale as the Eighth, namely, in Twenty-one Volumes quarto, of about 800 pages each. Numerous engravings on wood and steel will illustrate the text. The work is to be issued at the rate, as far as practicable, of three Volumes per annum.

Volumes I. to VI. are now ready.

COPP. CLARK & CO.

AGENTS FOR ONTARIO.

TORONTO.

CONTENTS.

	PAGE.
I. SUPPOSED EVIDENCE OF THE EXISTENCE OF INTER-GLACIAL AMERICAN MAN By DANIEL WILSON, LL.D., F.R.S.E.	557
II. PROTOTYPOGRAPHY. By REV. HENRY SCARBORO, D.D.	574
III. CATALOGUE OF BOOKS, AND OTHER OBJECTS, Illustrative of the Art of Typography, Exhibited at the Rooms of the Canadian Institute, Toronto, June 15-16, 1877, on the occasion of the Four Hundredth Anniversary of the Introduction of Printing into England by William Caxton.	601

METEOROLOGY:

June Meteorological Table for Toronto, 1877	xli
Remarks on " " " "	xlii
July Meteorological Table for Toronto, "	xliii
Remarks on " " " "	xliv
August Meteorological Table for Toronto, "	xlv
Remarks on " " " "	xlvi

* * The Annual Subscription, due in January, Country Members, \$3;
in Toronto, \$4.