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BIBLIOGRAPHICAL NOTES ON  
HISTORIES OF INVENTIONS  
AND BOOKS OF SECRETS

VOLUME I

17. 11. '81

Dear Elizabeth

Hope you make some  
sense of this. Also hope  
you enjoy your Italian Road

Love  
Richard



93/2327 ✓

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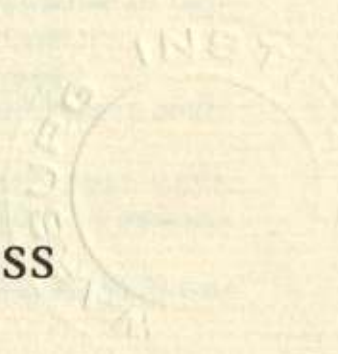
TWO VOLUMES IN ONE

BY  
JOHN FERGUSON, M.A.

VOLUME ONE - PARTS I-VI AND INDEX



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## PREFACE

Ferguson's *Bibliotheca Chemica* has long been one of the best known and most used of special bibliographies of the history of science, but his *Bibliographical Notes on Histories of Inventions and Books of Secrets* is comparatively unknown and rarely quoted. Its rarity (now remedied) has been the only cause of this. *Bibliotheca Chemica* is the catalogue of another man's (James Young's) collection; the *Secrets* is the record of Ferguson's lifetime of collecting and study of a class of book notably rare. His first paper on books of receipts was read to the Glasgow Archaeological Society on 20 April 1882: the last paper he read to the Bibliographical Society (London) on April 21, 1913 was *Books of Secrets*: his last lifetime publication was *Seventeenth Century Receipts* (Scottish Historical Review, April 1916).

The *Secrets* is a book to read as much as to consult; for, to the accuracy of collation to be found in all his bibliographical work, there is added the valuable descriptions of the contents of the books that came from continual and informed study. Read from cover to cover it shows the impact of the study of one aspect of the history of science on the mind of an expert; it shows, too, how the subject mushroomed so that in the last sentence of the last paper he was still looking forward to carrying on the consideration of English books of secrets from 1683 into the eighteenth century.

If the Pollard & Redgrave *Short Title Catalogue of English Books, 1475-1640* and the Wing *Short Title Catalogue of English Books, 1641-1700* had been available to Ferguson, his task of charting English books in his field would have been greatly simplified. If he had been able to consult the latter he would have been justifiably proud of the frequency with which the solitary symbol GU indicated that only the copy, originally owned by him, had so far been recorded.

Among works, mostly published since 1916, valuable in supplementing *Secrets* and, indeed, *Bibliotheca Chemica* are:

Duveen, D. I. *Bibliotheca Alchemica and Chemica*. 1949.

*Index-Catalogue of the Library of the Surgeon-General's Office*. 3 series. 1880-1948.

Sotheran's *Bibliotheca Chemico-Mathematica*. 6 volumes. 1921-1952.

Singer, Charles (and others). *A History of Technology*. 5 volumes. 1954-8.

E. A. Osborne





BIBLIOGRAPHICAL NOTES ON  
HISTORIES OF INVENTIONS  
AND BOOKS OF SECRETS

THE HISTORY OF THE ARTS AND MANUFACTURES OF GREAT BRITAIN  
BY J. H. POTT

JOHN BIRCHALL, Esq.

Author of 'The History of the Cotton Manufacture in Great Britain'

London: Printed by G. and J. Robinson, 1801.

The following is a list of the principal works on the history of inventions and books of secrets, which have appeared in Great Britain since the year 1700. The first of these is the 'History of the Cotton Manufacture in Great Britain' by John Birchall, Esq. published in 1801. This work is a valuable contribution to the history of the cotton industry, and contains a great deal of interesting information. It is followed by the 'History of the Iron Manufacture in Great Britain' by the same author, published in 1802. This work is also a valuable contribution to the history of the iron industry, and contains a great deal of interesting information. The third of these works is the 'History of the Wool Manufacture in Great Britain' by the same author, published in 1803. This work is also a valuable contribution to the history of the wool industry, and contains a great deal of interesting information. The fourth of these works is the 'History of the Paper Manufacture in Great Britain' by the same author, published in 1804. This work is also a valuable contribution to the history of the paper industry, and contains a great deal of interesting information. The fifth of these works is the 'History of the Glass Manufacture in Great Britain' by the same author, published in 1805. This work is also a valuable contribution to the history of the glass industry, and contains a great deal of interesting information. The sixth of these works is the 'History of the Soap Manufacture in Great Britain' by the same author, published in 1806. This work is also a valuable contribution to the history of the soap industry, and contains a great deal of interesting information. The seventh of these works is the 'History of the Sugar Manufacture in Great Britain' by the same author, published in 1807. This work is also a valuable contribution to the history of the sugar industry, and contains a great deal of interesting information. The eighth of these works is the 'History of the Tobacco Manufacture in Great Britain' by the same author, published in 1808. This work is also a valuable contribution to the history of the tobacco industry, and contains a great deal of interesting information. The ninth of these works is the 'History of the Wine Manufacture in Great Britain' by the same author, published in 1809. This work is also a valuable contribution to the history of the wine industry, and contains a great deal of interesting information. The tenth of these works is the 'History of the Beer Manufacture in Great Britain' by the same author, published in 1810. This work is also a valuable contribution to the history of the beer industry, and contains a great deal of interesting information.

In addition to these works, there are many other works on the history of inventions and books of secrets, which have appeared in Great Britain since the year 1700. These works are also valuable contributions to the history of these industries, and contain a great deal of interesting information. The following is a list of some of these works: 'The History of the Silk Manufacture in Great Britain' by John Birchall, Esq., published in 1811; 'The History of the Linen Manufacture in Great Britain' by John Birchall, Esq., published in 1812; 'The History of the Cotton Manufacture in France' by John Birchall, Esq., published in 1813; 'The History of the Iron Manufacture in France' by John Birchall, Esq., published in 1814; 'The History of the Wool Manufacture in France' by John Birchall, Esq., published in 1815; 'The History of the Paper Manufacture in France' by John Birchall, Esq., published in 1816; 'The History of the Glass Manufacture in France' by John Birchall, Esq., published in 1817; 'The History of the Soap Manufacture in France' by John Birchall, Esq., published in 1818; 'The History of the Sugar Manufacture in France' by John Birchall, Esq., published in 1819; 'The History of the Tobacco Manufacture in France' by John Birchall, Esq., published in 1820; 'The History of the Wine Manufacture in France' by John Birchall, Esq., published in 1821; 'The History of the Beer Manufacture in France' by John Birchall, Esq., published in 1822.





NOTES ON SOME BOOKS OF TECHNICAL RECEIPTS, OR  
SO-CALLED "SECRETS,"

BY

JOHN FERGUSON, M.A.,  
PROFESSOR OF CHEMISTRY IN THE UNIVERSITY OF GLASGOW.

*[Read at a Meeting of the Society held at Glasgow on 20th April, 1882.]*

THE following notes may serve to some extent as an introduction to a subject wide in itself, and with numerous and important connections. The history of practical invention and of technical progress is one which might well engage the attention of students of anthropology and antiquities, as it throws light on many points connected with the growth of social life and civilization. The desire and the power to turn external objects to his service and convenience are developed to such an extent in man, that, among the many differences between him and other animals, may be reckoned the various arts by which he induces nature to accommodate herself to his wants; among the lower animals one looks in vain for anything parallel to the arts of cookery, medicine, metallurgy—to the systematic use of tools, of clothing, of weapons.

In ancient times the various handicrafts were monopolies of certain families or castes; in the middle ages the handicraftsmen were too glad to pursue their callings in obscurity; it is only in the most recent years that arts and manufactures have acquired such paramount interest, that the special or technical education of those who are to exercise them has come to be thought of national importance. While, in the days of the Greeks and Romans, the artizan was a despicable if not an almost infamous person, and, in the middle ages, was oppressed by the military and ruling



classes, against whom, nevertheless, he carried on a ceaseless struggle until he succeeded in asserting his importance, and even his equality with them, it has been reserved for the present day for ignorance of arts and manufactures, and indifference to their progress, to be as discreditable as they were formerly dignified. The history of the growth of the arts themselves, and of the attitude of society towards them, is, therefore, of wider extent, and of greater philosophical interest than at first sight appears. This history has not as yet been written and, as time goes on and material gathers, the more difficult it becomes. The only work in which the attempt has been made is the "*History of Inventions*," of Beckmann, written towards the end of last century.\* This work, however, is less a history in the strict sense of the term, than a collection of antiquarian essays upon various objects of manufacture, and upon some technical questions. The essays, besides, are not arranged in any definite order, and have no direct connection with each other, but they are very elaborate, and show a wonderful amount of research and knowledge. Since Beckmann's time, I do not remember any laborious German who has followed up his work. There is certainly nothing on the subject in English.†

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\* Beckmann's work is entitled "*Beyträge zur Geschichte der Erfindungen*," and it was published at Leipzig, in five volumes, between 1786 and 1805. An English version and abstract appeared in 1823, in two volumes, and a new edition was published by Bohn in 1846, in two volumes.

† In writing the above I had forgotten some systematic works on the history of arts and manufactures which are more consecutive and philosophical but less thorough than Beckmann's collections. There is the work of Antoine Yves Goguet—" *Origine des loix, des arts, des sciences, et de leur progrès chez les anciens peuples*," published at Paris in 1758. It was translated into English, and there were two editions, of which that of 1775, in 3 vols., 8vo, is now before me. This book partakes largely of the character of a treatise on antiquities, but it embraces sections on the history of arts and manufactures among all the ancient peoples. It is a curious book, and shows familiarity with the classical writers, but it is of no authority now, after the research that has been expended, not only on almost all the topics that the author includes in his discussions, but also on the authorities to whom he owes his information.

A better and more specialized work is the "*Geschichte der Technologie*" of Johann H. M. Poppe, in three volumes, published 1807-11, and forming part of the Göttingen series of histories of science, arts, and philosophy. In the more recent Munich series of histories there is a "*Geschichte der Technologie*," by Karl Karmarsch, in one volume, 1872.



It is not my intention now to say anything about the progress of arts and manufactures at all, but only to bring under your notice a section of literature which is nearly ignored by bibliographers and antiquaries, and is altogether out of the ken of book-reprinting clubs.

It is hardly to be expected that a practical art can have any literature worth speaking of. The man who is busy practising it can have little time to write about it, and he who wishes to learn it must put to his hand and work at it, and that under the supervision of a master, and not by merely reading books. This is the apprenticeship that every one must serve. No amount of reading will make a sculptor, or a gardener, or a shoemaker, or a surgeon, or a musical executant. The arts must be acquired by practice, and they are extended and improved by practice. Every one who exercises them comes to have special power and certain ways of doing things, which may enable him to surpass others who are similarly engaged. These are his "secrets," which very often he cannot, or will not, reveal to others. Rapid insight into a particular case, power of overcoming physical obstacles, ingenious adaptations of means to ends, exhibition of due care at the right time, enable one man to effect what others cannot.

In earlier times artists were very chary indeed of telling their secrets, and in the great craze of the middle ages—the craze to make the philosopher's stone—the adepts were continually on their guard to conceal their art from the unworthy, while revealing what was thought suitable for the

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Both of these works give good accounts of the growth of arts and manufactures, and contain numerous references to books and papers on them.

Quite recently I came across a little work entitled "*A pleasant and compendious History of Inventions*," London, 1686, 12mo. In it an attempt is made to give, in briefest outline, the origin of some important inventions. Defective as were both the plan and execution of this booklet, the author had a very clear notion of the importance of his subject, and of its general interest.

So far as I know, no complete and systematic work on the history of arts and manufactures has appeared in this country. A collection of essays by David Bremner on the Industries of Scotland was published at Edinburgh in 1869. They deal chiefly with the then state of the industries, although there are usually short historical narratives prefixed. The work entitled "*Manufacturing Arts in Ancient Times*," by James Napier, London, 1874, 8vo, is occupied almost entirely with the history of metals and of dyeing.



genuine artist to know. The philosopher was warned to admit no one to his laboratory—or to his confidence. Even at the present day, secrets have not wholly died out; there are manufactures which are still undivulged, and any one engaged in the scientific investigation of some phenomenon or law of nature, will not tell his professional brethren unreservedly what he expects to discover, before he has finished his labours.

It would seem, however, that in spite of the precautions of the older artists, their private ways of working, of producing substances, of making colours, and effecting all kinds of material changes, oozed out and became at last public property. But even after their publication, these methods and receipts retained, paradoxically, the name of "Secrets,"\* and many collections of them appeared during the last three or four hundred years. It is beyond my power to give a complete list of these; my purpose at present, as I have already said, is to exhibit a few of those to which my attention happens to have been recently directed, and of which some at least are possessed of a certain amount of archæological and bibliographic interest.

This set of books divides into several groups, but perfect classification of them is impossible on account of the way the themes interweave.

I. There are collections of secrets of nature, or treatises on natural history, general science, and cosmogony. Of this set, Pliny's history seems to have been the model.

II. There are treatises on what was called natural magic (as distinguished from black magic or necromancy)—that is, the production of secret effects in optics, acoustics, magnetism, &c., &c., by natural causes. This is the form which natural philosophy originally took.

III. There are treatises which deal chiefly with chemical, pharmaceutical, and medical secrets.

IV. There are treatises on life and generation: physiological secrets.

V. There are treatises on technical or art secrets, strictly so called, and they may be arranged conveniently in two classes: general collections con-

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\* In the remarks which followed the reading of the paper it was pointed out that not so long ago chemical works were known, everywhere in Scotland at least, as "secret works." Some are still practically such.



taining receipts relating to a variety of arts, and special collections containing receipts of use in one art or handicraft only.

I have examples of each of these classes to exhibit.

The earliest medieval treatise on the subject of the practical arts to which I can refer at the present moment is that of Theophilus. It exists in MS. in several libraries and was first edited with translation, introduction, and notes by Robert Hendrie, in 1847.\* The date is not exactly known, but the work seems to have been written in the eleventh century. It is in three books. The first treats of the materials used in painting and illuminating; the second of the making and colouring of glass; the third of metal working, bell making, organ building, lapidary work, colours. It is, therefore, a very important and interesting work for the history both of the sciences and practical arts. It mentions a number of substances and the manner of making them, which involved chemical skill, and it treats of arts, the results of which remain to this day the admiration and the despair of connoisseurs.

One of the biggest, if it be not the biggest, book written in the middle ages and printed in the fifteenth century, was the work of a Dominican monk, called Vincent de Beauvais.† It is a vast compilation or encyclopædia, a mirror of human knowledge as he called it—*Speculum quadruplex*—divided into four main parts, of which science and art form one. Of this huge work I have never encountered a copy, and have only seen a fragment about alchemy reprinted in a collection of such pieces. The author was born about 1190, and died about 1264. His labours, like those of his contemporaries, were chiefly devoted to philosophy—moral, metaphysical, and theological—and he engaged in the conflict then raging

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\* A French translation had appeared previously in 1843, edited by Count de l'Escalopier.

† For information—not much—about the author, an abstract of the bibliography of his work, and an outline of the contents of it, reference may be made to the article "Vincent de Beauvais" by Daunou, in *Histoire Littéraire de la France*, Paris, 1835, 4to, T. XVIII., pp. 449-519, and the numerous authorities there quoted. Through some oversight, Hain, while giving a cross reference, has omitted Vincent's name in the right alphabetical place in his *Repertorium Bibliographicum*. The *Speculum* appears to have been printed by Johann Mentelin at Strasburg, and finished by 1476. It is in 9 volumes folio: *Speculum naturale*, 2; *morale*, 2; *doctrinale*, 1; *historiale*, 4.



between the realists and nominalists, but he was able to turn from discussions on words and definitions, to the contemplation of external objects. The *Speculum Naturale*, or history of nature, is a commentary in thirty-two books, the text being the narrative of the creation as given in Genesis. This treatise deals less with arts than with cosmogony and natural history.

In this respect it differs, therefore, from the writings of two of his contemporaries, viz., Roger Bacon (1214-1292-4), and Albertus Magnus (1193(?) - 1280).

In his *Opus Majus*, Bacon has given an encyclopædia of human knowledge, and especially of physical science, but it is another work of his which falls to be mentioned in this place, namely, his "*Epistola de secretis operibus naturæ et artis, et de nullitate magicæ.*" This is a short report on the very wonderful effects that can be produced by natural means, and it is in this tract that occurs the often-quoted allusion to the composition and power of gunpowder. This letter was intended as a reply to the persistent attacks of malignant ecclesiastics who accused him of practising "black magic" \*—by showing that the apparent mystery was due to the ignorance of his accusers and not to any compact of his with the infernal powers.

Albertus Magnus is credited with a treatise of secrets, but the authorship has been disputed and has been assigned to Henricus de Saxonia, one of his pupils, but whether this be correct or not the work usually, if not invariably, bears the name of Albertus. It deals with physiological secrets only, and that in a very brief manner; so that, both in range and in bulk, it is quite the reverse of an encyclopædia. Notwithstanding, if we may judge by the number of editions, it was one of the most popular treatises from the 15th to the 17th century.† Albertus was the author

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\* The black magician, or necromancer, was believed to have carried on a correspondence with the fiend and entered into a compact by which, on the liberation of the latter from his "prison-house," he would assist the magician in carrying out schemes which, in their expected results, could be called nothing else than supernatural. The correspondence with the magician's name at it, was usually brought up in evidence against him—very much to his annoyance—when he had to implement his share of the bargain.

† It is entitled "*De Secretis Mulierum,*" and a list of the early editions is given by Hain. (*Repert. Bibliogr.*, Nos. 549-568). In character it closely resembles the "*De phisio-*



likewise of a treatise on the secrets of plants, animals, and stones, in which he described their occult virtues.

In the following century flourished Bartholomew Glanville, a Cornishman, author of a ponderous work on the Properties of Things, divided into nineteen books. As it deals chiefly with natural history it hardly falls within consideration at present, but it gives incidentally technical descriptions. It was first printed in the fifteenth century, the earliest edition being of date 1478, and it was often re-issued, besides being translated into French, Dutch, and Spanish. It was also translated by John Trevisa in 1398 into English, and published by Wynkyn de Worde a century later.\*

In the fifteenth century another book which had a considerable share of popularity was printed. It is entitled "*Lucidarius*," and was written by a monk called Honorius of Strasburg. It first appeared in 1479, but the edition which I have here and which is worth examination for its uncommon type and curious woodcuts, was printed at Strasburg in 1499, by Mathijs Hupfuff. It is very rare, and though Hain mentions it (*Repert. Bibliogr.*, No. 8814), he had no actual copy for collation. He consequently says that the book has twenty-nine leaves, whereas this copy has thirty, the last containing a woodcut of the carrying of the cross. This work is a sort of catechism of natural and supernatural things. The questions are asked by the scholar, and the answers are given by the master, who thus imparts the required instruction in the secrets of creation.

All these works are of a general character, and, except the first, deal with the physical and natural sciences, as these were understood from the twelfth to the fifteenth century—they are examples chiefly of the first class. That some of them were among the books first printed in the fifteenth

*nomia*" of Michael the Scot, and the two tracts were frequently printed together during the 17th century. It was translated into French and German. An edition of the French (Cologne, 1722), entitled "*Les admirables secrets d'Albert le Grand*," contains, besides the two tracts of Albertus, a third consisting of practical receipts, and a fourth on physiognomy.

\*Johnson's *Typographia*, London, 1824, I., p. 354. There is a copy of the Latin edition printed in 1480, in the Euing Collection, Glasgow University Library. It is in folio, in double columns, printed in fine Gothic character.



century and went through several editions and translations, notwithstanding their bulk in certain cases and their frequently absurd contents, shows that even then there were many people anxious to know something about nature and external objects.

The sixteenth century produced no great encyclopædia like some of those I have mentioned. Either the breed of encyclopædists had become extinct, or else knowledge had grown too great to be gathered by one man in his lifetime and put in a book, but we find several less ambitious authors dealing with different kinds of secrets, some of nature, others of arts.

First among those whose works I have here comes Levinus Lemnius, who was born at Zirickzee in Holland, in the year 1505, and after studying at various places became a physician in his native town. Between the years 1559-64 he published a work entitled "*De Miraculis Occultis Naturæ, Libri IV.*" Of this book several editions appeared, of which I have here two, Franckfurt 1604, and 1611, both in 16mo. It was translated into English under the title of "*The Secret Miracles of Nature, in four books,*" London, 1658, in small folio, of which there is a copy here. It was translated into French by the alchemist Gohory and published at Paris [Orleans] in 1568, and it was translated also into Italian.

It is a most heterogeneous collection, heterogeneously piled together, of notions on physiological, physical, medical, religious, and moral topics, with attempts to explain phenomena in nature which subsequent enquiry has shown do not exist at all. The collection is a very curious one, notwithstanding, and furnishes good instances of popular ideas about natural things current three hundred years ago. It would be difficult to bring this collection under any of the classes above mentioned—the only thing tolerably certain is that it contains hardly any practical receipts.

Contemporary with Lemnius, but ten years his junior, was Conrad Gesner, who flourished from 1516 to 1565. One might spend much time over the works of this really distinguished man, who was called the German Pliny, on account of his comprehensive learning. Besides his writings on animals, plants, and minerals, on languages, pharmacy, natural philosophy, and so on, he was one of the first bibliographers and book cataloguers, his "*Bibliotheca Universalis*" being the best and most com-



plete catalogue which appeared in the sixteenth century, and being still a valuable book of reference.

Under the pseudonym of Evonymus Philiatros, he published a book entitled "*Thesaurus de remediis secretis*"—a treasury of secret remedies. It appeared at Zurich in 1554, and in the course of a few years went through numerous editions, and was translated into English, French, and German.

I have here examples of all these:—

1. Latin.—An edition in 16mo, Lyons, 1555, by Balthazar Arnollet, and another without date, printer's name, or place, but as the device on the title page is a tree with five frogs,\* doubtless this edition was printed by Froschover at Zurich. Neither of these editions is mentioned by the bibliographers.

2. German.—The German translation appeared at Zurich in 1555, and other editions were published in 1582, 1583, and 1608. Of this last there is a copy here.

3. French.—Like the German, the French translation was executed immediately after the Latin appeared. It was published at Lyons in 1555 in 4to, again in 1557 in 8vo, and in 1559, in 8vo, by Antoine Vincent. I have not observed any reference to the 1559 Lyons edition. As will be seen by the copy here, it is a very prettily printed book with nice woodcuts of herbs and chemical apparatus.

4. English.—It was translated into English by Peter Morwyng, and published by John Day, at London, in 1559. Another edition appeared in 1565, which corresponds page for page with the earlier one, and ten years later, in 1575, a third edition came out. The copy here is of the 1565 edition. It is handsomely printed in bold black letter, and is illustrated by woodcuts of plants and apparatus for distillation. The main purpose indeed of the book is to describe the way of preparing remedies from plants by that method.

In 1569, after Gesner's death, a second part of the treasure was edited

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\*A more elaborate form of this device will be found on the title page of Gesner's "*Bibliotheca*," ed. Simler, 1582, printed by Froschover. The device is a punning one.



by Caspar Wolff or Wulphius. It became nearly as popular as the previous part, and was translated into French and English.

1. Latin.—It was first printed at Zurich in 1569, but I have no copy to exhibit.

2. The French version was executed by Jean Liebaut, and appeared under his name at Lyons in 1593, in 8vo. Thereafter at Rouen in 1628, and 1643, of which edition a copy is here. I have here also another published at Rouen with the date MVIC, which would appear to mean 1600, and it would therefore be much earlier than the other, but against this date is the fact that it has not the look of a book printed in 1600. Besides it is called on the title page *Derniere Edition*, so that one would suppose it to be subsequent to those above mentioned.

3. The second part was Englished by George Baker, surgeon to Queen Elizabeth, and two editions of it were published, of both of which copies are before us. The first bears date 1576 and is entitled the "*Newe Jewell of Health*." It was published in London by Henry Denman, in small 4to, and printed in black letter. It is illustrated with numerous woodcuts of apparatus and operations. The second edition appeared in 1599 under the title of "*The Practice of the New and Old Phisicke*." It was published at London by Peter Short, and is also in black letter.

It will be noticed that this work in particular contains the pharmaceutical and to some extent the chemical knowledge of the time of Shakespeare. The copy of the first part which is here was printed the year after he was born, and it is very likely that the pictures of plants and chemical operations which it contains would not escape his notice even while still a child. The examination of these books gives one some insight into the references which occur in the plays to the physician's art and the works of the apothecary, who was not always then, or for long after, distinguished with sufficient accuracy from the poisoner.

Gesner's work is specially concerned with medical and pharmaceutical secrets, and does not take up either natural history and physical, or trade and technical secrets.

A work more representative of technical art than any of the preceding was the "*Pirotechnia*" of Biringuccio, which was published at Venice



in 1540. It deals particularly with the extracting of metals from their ores, their fusion, casting, calcining, and conversion into various compounds, the preparation of salts, the distilling of acids, the founding of cannon, the manufacture of gunpowder and of fireworks. Of the several editions which appeared I have here the first edition of 1540, in small quarto, and the 8vo edition of 1559, also printed at Venice.\* The work was translated into French and published at Paris in 1572, of which translation there is a copy here. Copies both of the 1540 Italian and the 1572 French editions are uncommon.

In the compilation of books of secrets the Italians in the sixteenth century showed considerable activity, and the examples of them that are here may be taken together in chronological order.

The earliest of them is ascribed to Don Alessio Ruscelli, a Piedmontese, whose reputed work was first printed at Basel in 1536, in 8vo. It went through a very great number of editions, but although it was one of the most popular of the collections of receipts or secrets, copies of it are now quite unusual in catalogues. The editions were in all likelihood actually worn out by use. The copy here is a comparatively early one, having been printed at Venice in 1568. This collection was translated into English, and the four different parts appeared in succession, the first in 1562, the last in 1578. According to Watt, who gives the titles at length and enumerates different editions,† the secrets appeared in every European language. He adds that an abridgment of it was long a popular book at the foreign fairs, and Nisard mentions a book which consists of extracts from Albertus Parvus, Cornelius Agrippa, and others, but which he thinks is chiefly a rehabilitation of the work of Alexis.‡ This collection, therefore, is still publishing and selling in France by the pedlars, and flying stationers, as they used to be called. The editions Nisard mentions are of 1837 and 1839. It is hardly necessary

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\*I have since got a copy of the second (?) edition, printed at Venice in 1550, 4to.

†An edition of 1595, London, Peter Short, is not mentioned by Watt. It is in small quarto, black letter, and resembles the 1599 edition of the second part of Gesner's work. There is a copy in the Euing Collection, Glasgow University Library.

‡Ch. Nisard, "*Histoire des Livres Populaires*," Paris, 1854, I., p. 225.



to say that however creditable the Don's compilation may have been to the sixteenth century, it gives one but a poor idea of the progress of true physical and medical knowledge among the mass of the people in the nineteenth, that such books can be sold for actual perusal and reference.

A similar collection to the preceding was made by Gabriello Falloppio, celebrated as an anatomist, who lived between 1523 and 1563. The work is entitled "*Secreti Diversi*," and it appeared after his death in 1566. There is a copy of it here. It contains receipts for preparing different bodies to be used in medicine, for the production of wines, alcoholic extracts of plants, cosmetics and waters. It also explains the chemical treatment of the metals, their alloys, the way of changing their colours, converting them into different kinds of salts and so on. There is no English version of this, so far as I know, but there was a Latin edition, and one in German, Franckfurt, 1641, of which there is a copy here.

Two years later, in 1568, there appeared at Venice another collection of secrets. The author or compiler was Leonardo Fioravanti, a physician of Bologna, who died in 1588. His collection is arranged very much in the same way as Falloppio's and it contains not only secrets of medicine and surgery with the necessary preparation of drugs and remedies, but receipts for several technical purposes as well. Besides the Italian edition of 1571, Venice, 8vo, I have here the German translation of Darmstadt, 1624. Of this work an English translation was made by John Hester, which was first published at London in 1582, in 16mo. It was afterwards reprinted with some other translations by the same hand, and appeared in small quarto in 1652. Of this edition I possess a copy. The translation differs in several details from the Italian, and it embraces only the medical section of the original.

A much better known man than any of these published a collection of curious arts at Naples in 1558. This was the Neapolitan, Giambattista Porta, who lived between 1538 and 1615, made long journeys in search of natural knowledge, and formed an Academy of the Secrets of Nature in his house at Rome, which was suppressed of course.

His work is entitled "*Magia Naturalis*," and it is divided into twenty books, according to subjects. This is a more comprehensive work than



some of its predecessors, but I cannot say that in its contents it is much more sensible. It had its share of popularity, however, passed through many Latin editions, and was translated into all the languages. Besides three of the Latin editions (Franckfurt, 1591, Leyden, 1644, and Amsterdam, 1664), I have here a copy of the scarce English translation of 1658, with the still scarcer frontispiece, which contains a portrait of the author, and a representation of the four elements, and of Art and Nature, disposed in compartments. Among the curiosities contained in the first edition of this book, 1558, is an account of the camera obscura as it was known—without the lens—to Leonardo da Vinci. In the 1589 edition it is described with the lens, but there is no proof of what has been stated, that the instrument was either invented or improved by Porta. On the whole, the optical division is one of the best in the *Magia Naturalis*.

The last of the Italian collections I have to show is that of Leonardo Locatelli, a physician, like most of the older naturalists. The work is entitled "*Theatro d'Arcani*," and it deals chiefly with chemical and alchemical changes and products. I have here the edition of Milan, 1644, and that of Venice, 1667. So far as I know there was no translation published.

The preceding are almost all mixed collections, but in the sixteenth century there appeared a series of small books, of purely technical character, about which I have failed in getting any information. The only thing to be done therefore is to enumerate and describe the books themselves, which are now before us.

The oldest is entitled "*Kunstbüchlin*," and it was printed at Augsburg in 1537.\* This is a collection of receipts, pure and simple, intended for practical workpeople. The topics are the working of metals, the making of colours, the dyeing and colouring of various objects, the calcining of the metals, and such like.

In 1549 there was published at Amsterdam a small volume, entitled "*Kunst Boeck*," which I have not seen referred to in the bibliographies. It is said to be compiled and in part translated—*ghecolligeert ende eensdeels*

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\*Graesse, *Trésor de Livres Rares*, Dresden, 1863, iv., p. 53, quotes this same book, but gives the date, 1538. Other later editions are mentioned.



*getraslateert*—by Symon Andree. The translated sections are from the “*Künstbüchlin*.” In 1581 the translated part of the preceding was republished, with a second tract containing different receipts from those in the earlier one, and in 1600 there appeared at Amsterdam an edition of all the parts together in Dutch. In 1687 finally a modernized reprint of the “*Künstbüchlin*” appeared at Franckfurt, in 12mo. These collections represent fairly the kind of receipts for practical purposes current in the sixteenth and seventeenth centuries.

Johann Jakob Wecker, a physician at Basle, added another compilation to the preceding. It appeared in 1582, and several editions were published. That which I have here was printed at Basle so late as 1701, and is entitled “*De Secretis Libri xvii.*” It is arranged in a most systematic manner, and in this respect is superior to all the others; but one cannot give much praise to the information which the book contains. An English version was printed in folio, in 1660.

The seventeenth century produced a large number of books of secrets, of which there are one or two here.

A work somewhat similar to Wecker’s, but of a more philosophical cast, was written by Heinrich Nollus, and published at Franckfurt in 1619. It is entitled “*Naturæ Sanctuarium: quod est Physica Hermetica . . . methodo perspicua et admirandorum secretorum in Naturæ abyssu latentium philosophica explicatione decenter in undecim libris tractata.*” This work contains a discussion on general physical ideas and principles from the standpoint of the alchemical or hermetical philosophy then in vogue, and, as is said on the title, deals with the hid secrets of nature rather than of practical science and art.

Works treating more strictly of natural phenomena and practical physics were compiled by Casper Schott, a Jesuit, and Professor at Würzburg. Reference may be made to two of his works. “*Physica Curiosa, sive Mirabilia Naturæ et Artis Libris xii. Comprehensa,*” printed at Würzburg in 1667, in 4to. This treatise is chiefly on Natural History, and contains a great many drawings, of which those depicting different monsters, both of animals and human beings, show the greatest amount of ingenuity and originality on the part of the artist. The boy with the elephant’s head,



*puer capite elephantino*; the monstrous cock, with hoppers, and a tail like a cow's, set apparently in a metal socket; the *infans cum promuscide et capitibus animalium*; the *vitulomonachus*, or bull-calf monk; the *equus cute lacerâ*, or horse with the slashed doublet, and numerous others, surpass anything in the way of development devised by recent naturalists.

Ten years later, in 1677, there appeared at Bamberg, Schott's "*Magia Universalis Naturæ et Artis*," in four volumes, 4to. This is a treatise on old Natural Philosophy, and of the arts thereon depending, for instance, under acoustics the author describes organ building. This work is very copiously illustrated, and the general excellence of the drawings of apparatus and experiments is noticeable. The artist has been a much more matter of fact person than the other.

About the same time, but without place or date, there appeared a volume in 4to, entitled "*Joco-Seriorum Naturæ Centuriæ 4.*" It bears the name of Caramelius as the author, but in all probability this is a pseudonym, and the real author was Schott.\* It is a collection of curious things to be effected by physical causes, merely for the sake of amusement, and without any practical purpose in view.

In English two technical books were published that had some reputation. Gabriel Plattes' "*Discovery of Subterraneall Treasure, viz., of all manner of mines and mineralls, from the gold to the coal,*" appeared at London in 1639. This, as its name indicates, is concerned chiefly with mining and metallurgy, but there is a section at the end devoted to the colours that can be extracted from vegetables and the way of dyeing in fast colours. The other treatise is Sir Hugh Plat's "*The Jewel House of Art and Nature*," London, 1653. This a very mixed collection, as it includes receipts and descriptions from all the sciences. Though not entitled "secrets," these two tracts belong to the category.

In France a certain Mdlle. Marie Meurdrac published a little work

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\* Some ascribe it to Athanasius Kircher, but that may be because a tract by him is added at the end. Internal evidence is in favour of Schott. For example, on page 272, reference is made to "our cryptography in the first book of part four of the *Magia*," and this reference corresponds with the Bamberg edition, iv., p. 1. As to the date the chronogram with which the preface concludes would seem to point to 1661.



with the quaint title, "*Compassionate and Simple Chemistry written for meritorious ladies.*" Of this there is a German translation by Johann Lange, Franckfurt, 1676. The collection consists chiefly of pharmaceutical and, as was to be expected, cosmetical receipts. The subject is arranged in six books, and the last is devoted specially to the preparation of those substances with which ladies at that time were wont to preserve their beauty.\*

During the course of the seventeenth century some arts had so far advanced that treatises dealing with them alone began to appear. This is notably the case with metallurgy, an art which has always occupied a prominent place and has a considerable literature. Glass-making also in the seventeenth century can boast of a special literature. The German chemist Kunckel published a book on the subject at Franckfurt in 1679: a Florentine, Antonio Neri, another, of which I have the late 1686 Amsterdam edition. Of this book Christopher Merrett issued an English translation in 1662; lastly, Blancourt wrote a treatise in French of which an English translation was published in 1699 at London, under the title; "*The Art of Glass. Showing how to make all sorts of Glass Crystal and Enamel. . . . A work containing many Secrets and Curiosities never before discovered.*" †

Another special technical treatise was that of Pietro Maria Caneparo—"*De Atramentis,*" which, though dealing professedly with ink and black colours, is much more comprehensive than its name denotes, as it includes the technology of pyrites, of vitriol, of the oil of vitriol, and of different colours. I have here two editions, the first published at Venice in 1619, and the second at London in 1660.

It must not be forgotten, however, that parallel with these empirical

\* In books of receipts cosmetics occupy sometimes a considerable space, but there are, besides, works specially devoted to the subject. Amongst these I may mention an exceedingly scarce work by Jean Liebaut, to whom as translator of Gesner's *Thesaurus* reference has been made above. It is entitled "*Trois Livres de l'Embellissement et Ornement du corps humain.*" Paris, 1582. 8vo. pp. 16—464—16.

† The most recent book on the subject which I have seen is by the French chemist Peligot. "*Le Verre. Son Histoire, sa Fabrication.*" Paris, 1877. 8vo. A popular work, also from the French, was published at London in 1870, "*Marvels of Glass-making in all ages,*" by A. Sauzay. 8vo.



books, progress was making, though slowly, in those sciences on which the successful and sound development of their applications to the arts depends. In chemistry, and especially in pharmaceutical chemistry, that is in the preparation of natural substances for use in medicine, which occupies so large a place in some of these receipt books, there was considerable advance; and, in addition, a very great impulse to technical and applied chemistry was given towards the end of the seventeenth century by Glauber and by Becher.

But, notwithstanding, the books of secrets in the eighteenth century in many cases showed a retrogression towards credulity and absurdity, for this century has a broad shadow of ignorance and superstition athwart its vaunted enlightenment. It was this ultra-rational age which encouraged such books as the "*Secrets Merveilleux de la Magie Naturelle et Cabalistique du Petit Albert*," and a host of similar would-be magical and cabalistical books. They are of interest only as studies in the aberration of the human mind. But even in the works of men who ought to have known better we encounter the most ridiculous and gross ideas. The French chemist Lemery made a collection of receipts which was translated into English and published at London in 1711. Its title is "*New Curiosities in Art and Nature: or a Collection of the most valuable secrets in all Arts and Sciences*." If any one is desirous of seeing the puerile credulity which, in the same age and country, may run parallel with an equally contemptible scepticism, let him turn to the pages of this precious compilation. Some of the collections, however, are a little more practical and more rational than the preceding, but in all of them there is a conspicuous empiricism.

A few years later, in 1723, Dr. William Salmon, a great compiler of books, issued a work containing "*Choice experiments and observations on Building, Husbandry, Gardening, Mechanics, Chemistry, Painting, &c.*" London, 8vo. Of this I have no copy, but I have here another similar and earlier work by the same author. It is entitled "*Polygraphice, or the Arts of Drawing, Engraving, Etching, Limning, Painting, Varnishing, Japanning, Gilding, &c. . . . Eighth edition.*" London, 1701. Though professing to deal with the arts of design it is far more comprehensive and



includes the arts of dyeing and staining, alchemy, chemistry, chiromancy, arts of beautifying and perfuming, and so on.

I possess also two small treatises; one is without date, but belongs obviously to the last century. It is entitled "*Arts Treasury of Rarities: and choice Inventions. . . . The fifth edition. London . . . G. Conyers. . . . Price 1s.*" This is really a book of practical receipts, including such subjects as the dyeing of cloth, silk, hair, bone, leather; gilding, lacquering; removing spots of tar, grease, oil; preserving from moths; cementing broken glass, and so on. The other is entitled "*La Magie des Artistes . . . ou colletion complete des secrets utiles. . . . Harlem. . . . 1783.*" 12mo. This work is similar in contents to the preceding, and both are free from the absurdities already spoken of.

With the progress of the sciences and with insight into the causes of chemical and physical change, books of secrets like the preceding can no longer show any reason for existence. If, therefore, they circulate at all it is as chap books, the hawkers' reprints of Aristotle, Albertus Magnus, &c., already referred to, which have little interest from a bibliographical, and none from a scientific point of view, or else as collections of trivial receipts which are of no practical use. Any one wishing sound information on a practical matter will now go to such a work as Cooley's Cyclopædia of Practical Receipts, or Ure's Dictionary of the Arts, or to some of the numerous works on applied science and technology in which the rationale of the processes, or at least rational processess are given.\* Arts and manufactures are passing more and more from the empirical to the scientific state, and to appreciate the immeasurable improvement that takes place when a manufacture is based on a rational foundation and not on mere empiricism and what is called familiarly "rule of thumb," a comparison may be made, say of Canepario's account of sulphuric acid making with the treatise by Lunge on the same subject, or the tiny chapters on iron

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\* One still more recent is now to be had. Its title is "*Spon's Encyclopædia of Industrial Arts, Manufactures, and Raw Commercial Products,*" and it has just been published in London in two volumes. The author, editor, publisher, or whoever is responsible for the advertisement of it, makes a special merit of its containing a minimum of scientific and historical details.



smelting in Agricola or Ercker, with Lowthian-Bell's Studies of Blast Furnace Phenomena or Percy's Treatise on Iron.

On another occasion I hope to communicate to the Society extracts from some of the books now exhibited, and to supplement the list with notes on other works of a similar kind, which I have not in the meantime at hand.

*Postscript.*—I have just become aware of the existence of a "*History of Inventions*," by F. S. White; but of the book I, as yet, know nothing.







## PART 2







NOTES ON SOME BOOKS OF RECEIPTS, OR SO-CALLED  
"SECRETS."—PART II.

BY

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[Read at a meeting of the Society held at Glasgow, January 18th, 1883.]

To the notes communicated to the Society last session\* I have made some additions, having in the interval met with several works not then referred to, besides other editions of certain of the receipt-books. As in the first part, the present notes are arranged under two heads : 1st, concerning writers on the history of inventions ; 2nd, concerning books of receipts or secrets.

1st. The writers on the history of inventions are not so few as was formerly represented, and a considerable number have to be added to those already mentioned. In pursuing this enquiry I have once more encountered the difficulty of discovering a subject about which some person does not know much more than one's self. When I first threw together a few notes on some receipt-books that had passed through my hands, I had no intention of compiling a bibliography either of such books, or of those on the history of invention, but once started, curiosity drew me on to see if many books of the kind existed. Then it was I found that, so long ago as 1792, Beckmann had not only anticipated the idea of a bibliography of the history of invention, but had actually realized it to an important extent.† Apart from his undoubtedly great genius for literary and antiquarian research in this branch of history, Beckmann appears to have had exceptional facilities at Göttingen for pursuing it, and his elaborate essays show how he profited by them. The sections, however, on the bibliography of

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\* See *Transactions of the Archæological Society of Glasgow*, vol. ii., p. 180.

† *Beyträge zur Geschichte der Erfindungen*, Leipzig, 1792, iii. pp. 449, 559.



the subject are to be found only in the original German edition of his work, for the English translators and editors have omitted them, as they have done other pieces of valuable information, in the mistaken attempt to make his laborious investigations fit for popular reading.

It would be inconsistent with my present aim were I to give a translation or even an abridgement of this omitted and unknown chapter of Beckmann's history. Besides, I am not able to produce any of the works he refers to, and in these notes I am dealing only with books and editions which I have seen, and the majority of which have also been exhibited to the Society, but one or two of his remarks may be quoted and a short list given of the early histories which he describes at some length.

He begins by arranging writers on the history of inventions in five classes, viz. :—

1. Those who have compiled general works.
2. Those who have composed histories of inventions among particular peoples, or in particular countries or towns.
3. Those who have composed histories of inventions during particular epochs.
4. Those who have composed histories of inventions in particular arts and sciences.
5. Those who have composed the history of individual inventions, or of some few inventions.

Beckmann, reviewing these groups, says that for a certainty the writers who have contributed least to our knowledge of the subject belong to the first class. Just because they have tried to do everything, they have succeeded but indifferently—if at all—in doing anything. One can easily comprehend how to a man of the endless research and painful thoroughness of Beckmann, the second-hand learning and superficiality of some historians would be almost repulsive. Severe though the remark be, however, it is correct, for no one can devote to all discovery the labour and time necessary to write the history of it from original investigation. On the contrary he who confines himself to special subjects and exhausts them is most likely to remove mistakes, to dissipate prejudice, to add permanently to the sum of knowledge. Beckmann's practice accords admirably with his criticism, for he has taken up separate inventions and brought together all that he knew about their origin and progress, and has thus left a great



store of most curious information, which at the present time is almost entirely forgotten.

He next gives a bibliography of the history, for, as he says, no one had previously attempted it.\* He enumerates ten different treatises, the first nine of which are unknown to me, though with the tenth I was already acquainted before seeing it in Beckmann's essay. The following is a brief list of these works:—

1. *Teatro de gl' inventori di tutte le cose*, by Vincenzo Bruno. Naples, 1603. Small folio, pp. 291, besides preface and index.
2. *De gl' inventori di tutte le scienze et arti*, by Luigi Contarini. This seems to form part of a collection of essays by Contarini: *Il vago e dilettevole giardino*, of which various editions appeared at Vicenza and Venice from 1597 to 1683.†
3. *De originibus rerum libellus*, by Guglielmo Pastregico or Pastrengo. Venice, 1547. 8vo.
4. *Verum inventum, hoc est, munera Germaniæ*, by Michael Maier. Franckfurt, 1619. 8vo, pp. 249. A German translation appeared at the same place in the same year.
5. *The history of the principal discoveries and improvements in the several arts and sciences*. London, 1727. 8vo, pp. 307. This work was translated into French, in 1767, by Marc-Antoine Eidous, and from the French into Italian, Turin, 1786.
6. *Kurze Geschichte der merkwürdigsten Entdeckungen . . . in allen Wissenschaften und Künsten*. Osnabrück, 1784. 8vo. This collection was written by Beckmann himself.
7. *Dictionnaire des origines, ou époques des inventions utiles*. Paris, 1777. 6 vols. 8vo. The author's name was D'Origny. Beckmann speaks in a depreciatory way of this work. There is a copy in the library of the Royal Institution, London.‡

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\* This is not quite correct, for several of the writers mentioned by Beckmann had been enumerated by Antoine Teissier, a century earlier, in his elaborate *Catalogus Auctorum qui Librorum Catalogos, Indices, Bibliothecas, Virorum Litteratorum Elogia, Vitas, aut Orationes Funebres, Scriptis consignarunt*. Geneva, Samuel de Tournes, 1686. 4to.

† Since writing the above I have got a copy of this book. It forms a small quarto of 12-488-56 pp.; it has the Aldine anchor on the title page, and was printed at Vicenza in 1589. It is, therefore, of an earlier edition than any of those mentioned by Beckmann. The work is a curious collection of historical details on a variety of topics. The essay on the Arts occupies pp. 417-431, and it is, as Beckmann describes it, the barest of lists, without order and criticism. It looks just like a set of jottings taken down while reading to help the memory, and intended possibly to be filled up afterwards. It may be added that the author calls himself *Contarino*.

‡ *Catalogue*, London, 1857, p. 265.



8. *Curieuse Nachricht von Erfindungen und Erfindern der Wissenschaften, Künste und Handwerken*. . . . Hamburg, 1707. 12mo, pp. 167.
9. *Libellus de rerum inventoribus*, by Johannes Matthäus. Hamburg, 1613. 8vo, pp. 76.

On these writers and their works, Beckmann makes a few critical and descriptive remarks, to which I must refer those interested in the subject, as I am unable to add anything to them at present.

Respecting the tenth writer mentioned by Beckmann, some observations may be offered supplementary to what he has said.

The historian alluded to is Polydore Vergil,\* who was born at Urbino in Italy about 1470, studied at the University of Bologna, and came to England in 1503 in the train of Cardinal Corneto. He was sent by Pope Alexander VI. to collect Peter's pence, but after his mission was accomplished remained in England and became successively Prebend of Lincoln, Archdeacon of Wells, and Prebend of St. Paul's. After the long period of forty-seven years he returned to Italy and died in 1555, probably at Urbino. He wrote several books, that by which he is best known being the history of England. It aroused much controversy, and he was accused of having falsified facts and having made away with historical documents. † The book, however, which concerns us more immediately, *De inventoribus rerum*, the first of its kind, ‡ was printed at Venice in 1498 or 1499, and it too seems ultimately to have provoked strong feeling, for it was condemned by the Council of Trent and was put in the *Index*. After the first there followed an extraordinary number of editions and translations, a few of which are given by Freytag, Grässe, and Brunet. By far the fullest list, however, was

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\* Notices of Polydore Vergil are to be found in the biographical dictionaries and histories of literature. Those, however, who wish to stir the ashes of a fiery discussion long-ago gone out, may turn to Bayle (*Dictionnaire Historique et Critique*, Rotterdam, 1702, iii. p. 2978), whose pages contain ample references to the old writers.

† Tiraboschi (*Storia della Letteratura Italiana*, Firenze, 1810, vii. p. 1015) declines to believe this story, and Sir Henry Ellis also defends Vergil from the attacks made on him. (*Three Books of Polydore Vergil's English History*. Edited by Sir Henry Ellis. London, Camden Society. 1844.)

‡ There is a book by Zacharias Lilius *De origine et laudibus scientiarum*, printed at Florence in 1496. I have not seen any account of it, and do not know how its theme is treated.



compiled by Beckmann, which, on account of its curiosity, on account of its existing nowhere in English, so far as I know, and on account of my having some of the more interesting editions to exhibit, I am tempted to quote. Beckmann keeps the chronological order for both the Latin editions and the translations—I have separated the latter for convenience of description, and have added some editions with which Beckmann was not acquainted: these are distinguished by an asterisk.

* <i>Sine anno</i> <sup>1</sup>	Paris.		Senant	* 1558 <sup>7</sup>	Basil.		
* 1498 <sup>2</sup>	Venet.	4°	{ Christoph.	1558	Lugd.	8	{ Gryphii
1499	Venet.	4	{ De Pensis	1558	Lugd.	8	{ hæredes
* 1502 <sup>3</sup>	Paris.	4	{ Augrain	1561	Lugd.	12	{ Gryphii
1503	Venet.	4	{ & Bignet	1563	Basil.	8	{ hæredes
1509	Argent.	8	de Tridino	1566	Lugd.	8	Guarinus
1512	Argent.	4	Schürer	1570	Basil.	12	Guarinus
<i>Sine anno</i>	<i>Sine loco</i>		Schürer (?)	1575	Basil.	8	Guarinus
1516	Argent.	4	Schürer	1576	Romæ	8	
1516	Paris.	4	Petit	1585	Rom. (?)		
1517				1586	Lugd. Bat.	12	
1521	Basil.	fol.	Frobenius	1590		12	Stoer
1525	Basil.	fol.	Frobenius	1599	Francof.	12	
* 1528 <sup>4</sup>	Paris.	4	Stephanus	* 1600 <sup>8</sup>	Col. Agripp.		
1529	Paris.	4	Stephanus	1604	Genev.	16	
1532	Basil.	8	Bebelius	* 1604 <sup>9</sup>	<i>Sine loco</i>	16	Stoer
1536	Basil.	8	Bebelius	1606	Argent.	8	
1537	Paris.	4	Stephanus	1609	Genev.	8	
* 1544 <sup>5</sup>	Basil.	8	Isingrinus	1613	Argent.	16	
1545	Basil.	8	Isingrinus	1618	Argent.	8	
1546 <sup>6</sup>	Lugd.	8	Gryphius	1626			
1546	Basil.	8	Isingrinus	1626	Colon.	8	
1548	Lugd.	8		1644	Lugd. Bat.	12	Hegerus
1554	Antv.	8		1671	Noviomagi	12	Smetius
* 1555 <sup>7</sup>	Basil.			1671-72	Amstelod.	12	Elzevirius
1557	Gandav.	8		1726 <sup>10</sup>	Colon.	8	

<sup>1</sup> *Catalogus Librorum Impressorum Bibliothecæ Bodleianæ.* Oxon. 1843, iii. p. 712.

<sup>2</sup> Grässe, *Trésor de livres rares*, Dresden, 1867, VI., ii. p. 283. *Catalogus . . . Bibl. Bodl.*, 1843, iii. p. 712.

<sup>3</sup> Grässe, *Ibid.* Brunet, *Manuel du Libraire*, Paris, 1864, γ. col. 1136.

<sup>4</sup> Renouard, *Annales de l'Imprimerie des Estienne*, Paris, 1843, p. 29.

<sup>5</sup> Glasgow University Library.

<sup>6</sup> Freytag, *Adparatus Litterarius*, Lipsiæ, 1755, iii. p. 497.

<sup>7</sup> *Catalogue of the General Library of the University of Aberdeen*, Aberdeen, 1874, ii. p. 673.

<sup>8</sup> *Catalogue of the Printed Books in the Library of the Faculty of Advocates*, Edinburgh, 1878, vi. p. 693.

<sup>9</sup> Glasgow University Library.

<sup>10</sup> It is just possible that this list contains duplicates, for, without having actual copies to collate, mistakes may be made.



It was translated into the five chief modern languages:—

Into French—

1521	Paris	fol.		1576	Paris	8°
1544	Paris	8°		1576	Lyons	8
1544	Paris	16		1582	Paris	8

Into German—

<i>Sine anno</i>	Franckfurt	8°		1603	Franckfurt	8°
1537	Augsburg	fol.		1615		8
1544	Augsburg	fol.		1624	Franckfurt	8

Into Spanish—

1550	Antwerp	12°		1599	Medina	4°
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Into Italian—

1543	Venice	8°		1587	Florence	4°
1545	Venice	8		1592	Florence	4
1550	Venice	12		1680	Brescia	4

Into English, by Thomas Langley—

1546	Jany.	Lond.	8°	Grafton	(1570?)	Lond.	8°	Tisdale
1546	Apr.	Lond.	8	Grafton	1659	Lond.	12	
1551		Lond.	8	Grafton	1663	Lond.	12	
1562		Lond.	8		1868	New York		

The edition of 1562 is quoted by Beckmann on the authority of Ames, *Old English Printers* (?), p. 275.

In spite of these 80(?) editions and translations, Polydore Vergil's treatise is not common. Whether it is that there is no demand for it, or that the editions are actually worn out and consumed, it is but seldom that it appears in catalogues. A further proof of its rarity is that the large libraries contain comparatively few editions, judging, at least, by their catalogues.

The Advocates' Library contains only the Cologne edition of 1600 and a Spanish translation printed at Medina, without date, neither of which is mentioned by Beckmann.

The Aberdeen University has the editions of 1544, 1555, 1558, Leyden 1644, and Amsterdam 1671.

In the Bodleian Library are the following, Paris, without date, 1498, 1545, 1554, 1561, 1606, 1644, 1671, the Italian translation of 1545, the English of 1546, and Tisdale's, without date.

The Royal Institution has the Basil edition of 1521, the Nimwegen edition of 1671, and the English edition of 1659.

There is a fair representation of the editions in the British Museum. The following dates are taken from the catalogue in the reading-room:—1499, 1503, 1509 (this is queried in the



catalogue, from which I infer that the date is obliterated or defective), 1521, 1525, 1532, 1545, 1557, 1561, 1570, 1576, 1586, 1604, 1606, 1651, Neomag. 1671, Amst. 1671. Of the translations there are the following:—French, 1521, 1544; German, 1544; Italian, Venice, 1543, 1550-1, Florence, 1587, Brescia, 1680; English, 1546, 1551, and Tisdale's. Also the edition of 1659, and the New York reprint of 1868.

Of these I examined the 1576 and the so-called 1651 copies, and three of the English versions. That of 1576 is the authorised Papal edition.\* It is a small 8vo, printed in italics, and contains 48—478—2 pp. It has a notice: *Gregorius Papa XIII. ad futuram rei memoriam*, explanatory of the origin of this revised and expurgated version.

As the 1651 copy purports to have been printed at Amsterdam by Daniel Elzevier, and as I had seen no reference anywhere else to such an edition, I examined the Museum copy, and found, as I anticipated, that it was not really printed in that year. In the first place the name of *Daniel Elzevier*, as a printer, did not appear by itself till 1664; in the second place neither the author of the '*Essai*' nor *Willems* mentions any copy of *Vergil* as printed by *Louis Elzevier* in 1651. In the third place the actual copy does not agree with itself: on the engraved title the date is apparently 1651, but on the printed title the date is apparently *CIO IOC LXII*. Closer inspection, however, shows that in the first title 7 has been scraped out and 5 written in, and in the second title that an X has been scraped out and I written in. In short this volume—which bears the bookplate of *Mr. Le Cher. De Fleurieu*—is merely a copy of the 1671 edition with the dates altered. What could have been the object in altering them it is hard to say, but at any rate the thing has been clumsily done.

Sir Henry Ellis is the only authority who, I have since found, mentions this 1651 edition. His list contains some twenty of the editions, but it is not very accurate. He gives a Leyden edition of 1544, and an Amsterdam one of 1571, which dates are doubtless misprints for 1644 and 1671 respectively. He also quotes

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\* No other is allowed: "*Nisi fuerit ex impressis ab anno 1576, juxta editionem Romæ factam jussu Gregorii XIII. App. Ind. Trid.*" *Index Librorum Prohibitorum, Romæ, 1758, p. 286.*



editions by Daniel Elzevier, 1651 and 1662. As both these dates are impossible, and curiously enough are the dates on the British Museum copy, I have little doubt that they have been taken from it. The quotation of them, therefore, by Sir Henry Ellis, merely proves that this copy has been in the Museum for the last forty years, and that its spurious dates have hitherto escaped detection.

From my own and the University collections I am able to put before you a not less interesting, and, with the exception of the Museum's, a larger series than any of the preceding. Comparison of these works enables me also to point out some variations in the current descriptions of some of them, which may be of use to those who may hereafter examine the editions more minutely than I am able to do at present.

There is here a copy of the edition of 1499 which is usually called the first. It is the only edition mentioned by Hain (*Rep. Bibliogr.* No. 16008) by Beckmann, who however does not appear to have ever seen it, and by Freytag.\* But Grässe, as we have already seen, quotes an edition of 1498 by the same printer, and gives besides the price of a copy, and there is apparently a copy in the Bodleian Library. On the other hand Panzer (*Annales Typographici*, Norimb. 1796, vol. iv. p. 451, No. 2355) says: *spuria est haec editio*; and again (vol. iii. p. 456, No. 2495) he calls the 1499 edition: *unica Seculi XV*. In face of such opposing statements and in the absence of opportunity for comparing the 1498 and 1499 editions, it is impossible to say whether there are really two editions or not. I confine myself, therefore, to facts and offer the following description of the edition of 1499:

*F. 1r Title:* POLYDORI VERGILII VR | BINATIS DE INVEN | TORIBVS  
RE- | EVM LIBRI | TRES. | *F. 1v* Polydori Vergilii Vrbinatiss ad  
Lodouicum Odaxium | Patauinum Præfatio. | *The preface ends*  
*on f. 3v, followed by the table of contents which ends on f. 6v,*  
*followed by the words LAVS DEO.* | *F. 7r with sig. b,* POLY-  
DORI VERGILII VRBINATIS DE | INVENTORIBVS RERVM LIBER PRI- |  
MVS INCIPIT. | *F. 88r* Polydori Vergilii Vrbinatiss de Inuen-  
toribus rerum opus | Magister Christophorus de Pensis impressit  
Venetiis An | no humanitatis Christi. M.CCCC. LXXXVIII. |  
Pridie Kalendas Septembris. |

It is a small quarto printed in Roman character, with signatures a<sup>6</sup> b—k<sup>8</sup> l<sup>10</sup>, 88 leaves in all, with 29-30 lines in a page.

\* Freytag, *Adpuratvs Litterarivs*, Lips. 1753, ii. p. 1244.



The next copy is from Sir William Hamilton's collection, and is of the edition of 1503. It also was printed at Venice, but by Joannes de Cereto de Tridino. It is very nearly an exact reproduction of the preceding.

The following is an account of it:—

*F. 1r* Title in black letter: † | Pólydóri Vergílii Vr- | binatis de inuento | ribus reru<sub>3</sub> li | bri tres. | *F. 1v* Polydori Vergilli (sic) Vrbinatis ad Ludouicum Odaxiū Pa- | tauinum Præfatio. The preface ends on *f. 3v*. The table of contents then begins: Polydori Vergilii Vrbinatis de Inuentoribus rerum. | ¶ Capita primi libri: | and ends *f. 6v* LAVS: DEO | *F. 7r* with sig. b, POLYDORI VERGILII VRBINATIS DE IN- | VENTORIBVS RERVM LIBER PRIMVS IN- | CIPIT. | Ends *f. 81v* ¶ Impræssum Venetiis per Iohannem de Cereto de Tridi- | no alias Tacuinum. Anno domini. M.CCCC.III. Die De | cimotertio Iulii. |

It is a small quarto, printed in Roman character, with signatures a<sup>6</sup>, b—k<sup>8</sup>, l<sup>4</sup>, 82 leaves in all, of which No. 82 is blank; 29-30 lines in a page.

The first of the German editions, and the next in order, was printed by Matthias Schürer at Strasburg in 1509.\* I have a copy here; the title-page is as follows:—

POLYDORI VERGILII | VRBINATIS | DE | INVENTORIBVS | RERVM LIBRI | TRES. | M. ANTONII SABELLICI DE AR | TIVM INVENTORIBVS | ad Baffum carmen | elegantissi- | mum. | AD LECTOREM. | Gramma- tice, Orator, Poeta, Philosophe, Medice, | Iurisconsulte, Theo- loge, quisquis demū | es, Polydorum legito, vt prima | tuæ artis incunabula, | ab ipsa (vt aiunt) | stirpe agno | scas. |  
At the end: Argentoraci, in officina Matthiæ Schürerij Helue- | tensis. Art Doct. Mense Decembrî. | Anno. M.D. VIII. | REGNANTE CAES. | MAXIMILIANO | P. F. AVG. |

It is a small quarto, with six preliminary leaves unnumbered, and LXVI leaves numbered. It has headlines and signatures, but no catchwords, and it is printed in Roman character.

These three earliest editions contain only the first three books of the history of inventions. The remaining five books did not appear till the edition of 1517, of which, however, I have

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\* This edition is described by Freytag, *Adparatus Litterarivs*, Lips. 1753, ii., p. 1244. He says: "Hæc editio satis rara, et nisi fallimur, omnium prima est, quæ in Germania lucem vidit." He points out that it was unknown to Maittaire, and goes into a number of other details, for which I must refer to the article itself.



no copy, and have observed no description. Thereafter the different editions which I have seen contain the whole eight books.

This is the case, for example, in that printed by Stephanus at Paris in 1528-29, about which Beckmann gives no particulars, and of which the British Museum and Bodleian have no copies. The title page states that it contains the three books of the former edition revised and enlarged by the author, and in addition five books relating to the history of Christianity and the religions of other nations. To this edition there is prefixed a letter dated 1517, from the author in London to his brother in Urbino, which tells us how it was he came to England, and how he wrote his history at the request of Henry VII. This curious letter is not contained in any of the later editions which have come before me, and it gives Stephanus' edition a peculiar value.\*

Of the remaining copies two printed at Basil by Isingrinus in 1544 and 1546 respectively have nothing specially interesting about them, and the same may be said of the Italian translation of 1550. All three are in italics, and as specimens of printing are well enough. The 1544 edition is not mentioned by Beckmann. The copy here is from the University Library. From the same is a copy with date 1604. It was printed by Stoer, but where is not said. Beckmann specifies a Geneva edition of the same date, but whether these two are identical I do not know. Stoer's edition, besides containing Polydore Vergil's eight books, has also Sardi's tract, to be referred to below, and extracts from Pliny and other writers on the history of inventions. It forms a fat little volume in 16mo. From the Hamilton collection I have a copy of the Cologne edition of 1626. This is a reprint of the 1576 edition, and, on the title, purports to agree with that licensed by Gregory XIII. It also contains Sardi's tract.

Two more of the Latin editions are here. The first is that printed at Leyden in 1644 by Hegerus, and the other is the Elzevier edition of 1671, both in 12mo, both with the same very curious engraved title, illustrative, so far as I understand it, of the influence of printing. About the value of this edition of Elzevier's

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\* Two editions were issued by Stephanus; the first, containing three books, has the date 1528; the second mentioned above has 1528 on the title, but in the colophon: 1529, VI Idvs Ianvar. See Renouard, *Annales ... des Estienne*, Paris, 1843, p. 29, No. 21; and p. 32, No. 24.



opinion is divided. One writer says it is the only one sought after by the amateur,\* whereas Willems says frankly :— “ L'ouvrage est assez peu recherché et n'a qu'une valeur médiocre,” an opinion which was expressed in similar terms some sixty years earlier by the author of the anonymous work on the Elzeviers. Whether this be so or not, the edition is not one of the least costly ; though at the same time it is one of the least readable.†

I have still three copies to exhibit, which are for us perhaps the most interesting of all.

One is a copy of the first English edition printed by Grafton in 1546 ; it is mentioned but not described by Ames. It is unnecessary, therefore, to apologise for the following account :—

¶ An Abridgemēt of the | notable worke of POLIDORE | VERGILE con-  
teyngnyng the deui- | sers and first finders out aswell of | Artes,  
Ministeries, Feactes & | ciuill ordinaunces, as of | Rites, & Cere-  
monies, | commonly vsed | in the chur- | che : and | the | originall  
beginnyng of | thesame. Compē- | diously ga- | thered by |  
*Thomas Langley.* | ¶ IMPRINTED AT LONDON | vvithin the precincte  
of the late dissol- | ued house of the grey Friers, by Ri- | charde  
Grafton Printer to the | Princis grace, the .xxv. daie | of Ianuarie,  
the yere of | OVR LORDE, | M.D.XLVI. | *Cum priuilegio ad impri- |*  
*mendum solum.* |

It is a small octavo, printed in black letter ; has 8 preliminary leaves, with signature A, containing title and preface to Sir Antony Denny. On the verso of A8 is a woodcut :—the Prince of Wales' feathers, coronet and motto, with initials E. P., all surrounded by a glory or tongues of flame ; text, clvi leaves numbered ; on the verso of clvi. is Grafton's emblem of a grafted tree growing up through a barrel or tun ; table, 10 leaves not numbered, with signatures b v to x vi ; the imprint on the title-page is repeated on x vii. This copy seems to want the last leaf, which may contain the emblem repeated. The pagination is somewhat irregular on two or three sheets.

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\* *Biographie Universelle*, Article *Polydore Vergil*.

† *Essai Bibliographique sur les Editions des Elzéviros*, Paris, 1822, p. 115. It is No. 1464 in Willems' Catalogue—*Les Elzevier*, Bruxelles, 1880, p. 375, where also Hegerus' edition is referred to as an antecedent in the Elzevier style. The Nimwegen edition of 1671 seems from Freytag's account to run these very close in typographical neatness, but I have not seen it.



The copy now before me is from the Euing collection, and is in very fine condition. It has a note on the fly-leaf, signed with the initials "J. O. H.," stating that copies of the January issue of 1546 are much rarer than those of April, and that in the British Museum there are two copies of the latter, but none of the former. My observation, on the contrary, is that the Museum has a copy of this edition, but that it is imperfect, wanting A8 and all after x iiii. of the table at the end. There is in the Museum a copy of the 1546 edition, with January on the title-page and April in the colophon. This again differs in some details from the edition which has April on the title, and a description of which is given by Ames. To his account, as I have no copy to show, I must refer those who wish to compare it with the first issue.\*

Five years later Grafton printed another edition, which is described by Ames, *Typ. Ant.* III., p. 474, No. 1504. I have a copy here:—

An abridge- | ment of the notable worke | of POLIDORE VERGI- | LE  
 conteinyng the deuisers and | first finders out aswell of Artes, |  
 Ministeries, Feactes and ciuil | ordinaunces, as of Rites, | and  
 Ceremonies, com- | mōly vsed in the chur- | che: and the original  
 | beginnyng of the- | same. Compen- | diously ga- | thered | by  
 | Thomas Langley. | 1551. | *Mense Iulij.* |

It is a small octavo, printed in black letter; has 8 unnumbered leaves, containing title, dedication, and Grafton's device of the seven liberal arts; text, cxxxv numbered leaves, which number, however, is a printer's blunder for cli, followed by 6 leaves of Table, not numbered, and a seventh leaf with this colophon:—

Imprinted | at London, by Ri- | chard Grafton, Prin- | ter to the  
 Kynges | Maiestie. | Anno. 1551. | *Cum priuilegio ad im- | primen-  
 dum solum.* |

and Grafton's device again on the reverse. The folio-numbering, as before, is a little irregular.

In his account of this edition Ames, with his editors Herbert and Dibdin, makes statements which do not tally with the copy here. He says it "contains 155 leaves besides the preface and a table at the end;" the same thing is repeated by Lowndes, but, nevertheless, I believe they are all wrong. Owing, possibly, to the last leaf being mis-numbered 135, while the previous one

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\* *Typographical Antiquities*, edited by Dibdin, Lond. 1816, 4to, iii., p. 451, No. 1462.



is 150, they seem to have assumed that the correct number is 155. If their copy contained really 155 leaves and was otherwise similar to the one before us, there must have been four leaves interpolated. The signatures, however, in my copy are quite regular and run direct from the text into the index, so that there is no room for extra leaves. From the imperfect collations in the *Typographical Antiquities*, it is impossible to tell how many leaves not numbered a book may contain.

Of the last of these editions I have a copy from the University Library. It also is described by Ames, *Typ. Ant.* IV., p. 350, No. 2463.

The following is an account of it:—

An abridge- | mente of the Notable | worke of Polidore | Virgile. |  
 Containing the deuisers and fyrste | fyneders oute aswell of  
 Antyqui- | ties, Artes, Ministeries, Feactes | and ciuill ordinaun-  
 ces [as] of the | Rites, and Ceremon[ies co]m- | monlye vsed in  
 the [chur] | che: and the original | beginning of the | same. |  
 Compendiouslye gathered | and newlye perused | by *Thomas*  
*Langley.* | \*

The title is enclosed in a border. It is a small octavo, printed in black letter, has 8 leaves not numbered; clii leaves numbered, and Table 14 leaves; on verso of last leaf of table is the colophon:

Imprynted at | London by Ihon Tisdale | dwellyng in Knight | riders  
 streate, neare to | the Quenes | Wardrop. | *with a figure below.*

Folio 15 contains Tisdale's device: a drawing of Abraham sacrificing Isaac, with the angel and the ram.

The title of this edition, it will be observed, differs in one or two points from those already given, so that when Ames quotes merely the first few words and adds, "as in vol. iii., p. 451," meaning by that the same as the 1546 edition, he is wrong. In other respects his account tallies with the copy before us.

It is perhaps superfluous to remark that like early printed English black-letter books in general, these different editions have become scarce and valuable.

In the year 1663 there was published an edition of Polydore Vergil's works, edited by J. Langley, which I have not seen. The text of this edition which is apparently modernized, was made the basis of a reprint (limited to 120 copies) by the New

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\*The copy from which this title is taken has a defect in the title-page, which is represented by the portions enclosed in square brackets.



York Agathynian Club, of whose transactions it forms No. 2. It was printed at New York in 1868, and forms a handsome volume. The editor, W. A. Hammond, gives a short account of Vergil, but he does not seem to have been aware of the very great number of the editions, nor to have seen any of the early English copies.

It is impossible to look at the unprecedented number of editions of Polydore Vergil's work without trying to assign a cause for it. Doubtless the novelty of the subject, the boldness of the author, and his suspected orthodoxy were the main attractions, for it was the first attempt to write the history of the invention of the arts and sciences and to trace the growth of religious ceremonies; and though the information is not, and indeed could not be very well digested, it was a great help to scholars to have it brought together in any form.\* The dedication quoted above in Schürer's edition "*to the reader, whatever he might be,*" is probably the true explanation of the popularity of the work. Before parting with the author for the present, I would say that if one had ample opportunity for following it out, a complete bibliography of Polydore Vergil's work would be interesting and curious, and well worth the trouble of compiling.

We may pass now to some other historians of the arts, for Beckmann's list of ten does not include the whole of them. Teissier, already referred to, besides several of those quoted above, mentions Gilbertus Cognatus, who wrote a tract on inventors, printed at Basel in 1547.†

Another was written by Alessandro Sardi or Sardus, who was born at Ferrara about 1520, and died there March 26, 1588. He was a keeper of the archives, and spent a retired and laborious life of study, which was his sole passion. His tract is entitled, "*De rerum inventoribus Ll. II. ... iis maxime quorum nulla mentio est apud Polydorum, n. pr. in lucem editi.*" It first appeared, along with another work of the author, "*De ritibus gentium,*" at Mayence in 1577, and is not in the first edition of that work printed at Venice in 1557. It was afterwards printed along

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\* Tiraboschi (*Storia* vii. p. 1015) is rather hard upon the work. He calls it "libro che mostra la molta erudizione, e insieme la poca critica e la credulità del Vergilio."

† It was also reprinted with Polydore Vergil in the 1626 and possibly other editions.



with Vergil's work, and it is contained in the 1604 and 1626 editions already shown, and in the Nimwegen \* and some other editions as well. Of this work there is here a French translation by Gabriel Chappuys, printed at Lyons in 1584, and forming a small thin volume. I have not noticed this translation in any of the bibliographies or library catalogues which I have consulted.

Exactly a century after Polydore Vergil's history, appeared that of Guido Pancirollo. The author was born at Reggio, April 17, 1523, and became professor of law at Padua, and afterwards at Turin. He died June 1, 1599.† He wrote a number of works on law and other topics, and in addition the one connected with our present subject. It is entitled

*Rerum Memorabilium libri Duo : quorum prior deperditarum, posterior noviter inventarum est. Ex Italico Latine redditi & notis illustrati ab Henrico Salmuth.*

The Italian, if it exist, must be in MS., for I have not noticed any printed edition of it. The Latin passed through several editions; the following dates may be given:—Amberg, 1599-1602; 1607-8, 2 vols. 8vo, 1629; Franckfurt, 1617, 2 vols. 8vo; Franckfurt, 1630, 1631, 1646, 1660, all in 4to; Leipzig, 1707.

It appeared in French, translated by Pierre de la Noue, and titled: *Les antiquitez perdues*, Lyon 1608, 8vo., Lyon 1617, 12°; in Italian: Venice 1612, 4to.; and in English: London 1715, 2 vols. 12mo., and 1727, 2 vols. 12mo.

Of the different editions, I have seen those of Franckfurt, 1631, 1646, and 1660, in Latin, and the 1715 English translation. The first three all belong to the same edition, but in re-issuing the book with new dated title-pages, four pages have been omitted in the first part, and eight in the second. The edition of 1631 is therefore the most complete. Pancirollo's work is interesting, not only as giving some notion of the state of knowledge as to the history of invention in his time, but as displaying the attitude of scholars towards the practical arts of the ancients.

There seems to have been a belief last century that the claims of the ancient world to practical skill and scientific invention had

\* Freytag, *Adp. Litt.*, Lips. 1755, iii. p. 499 and p. 286.

† An account of Pancirollo and a list of his works are given by Nicéron, *Memoires des Hommes illustres*, Paris, 1729, ix. p. 183.



received but scant justice at the hands of most writers. To vindicate the reputation of the ancients in this field of human effort was the occasion of the publication by Louis Dutens of a work entitled *Origine des découvertes attribuées aux Modernes*. Dutens' work first appeared at London in 1769 in 8vo; thereafter in French, at Paris, 1776, 2 vols. 8vo; London, 1796, 4to.; and again at Paris, 1812, 2 vols. 8vo.; and it was published in Spanish at Madrid, 1792, 4to. Of these, the first is in the Hunterian Library, and the third in the Hamilton Collection. The author does not restrict the field he traverses, but endeavours to show, from allusions in ancient writers, and remains of the works of the ancients, that many things which were supposed to be entirely of modern origin, were really well known to the ancients. However easily such a thesis might be maintained in Dutens' time, it is not one which could even be thought of at the present day, and yet we know far more of the knowledge and practical skill of the ancients, and can estimate it more correctly and value it more highly than could be done by Dutens; or any of his contemporaries. The fact is, however able the ancients may have been, they could not have had the practical inventions of the present day; and the same remark is true even for Dutens' time. Ignorant of the composition and properties of matter as Europe was a hundred years ago when compared with to-day, it still knew more than the ancients, and that knowledge caused discoveries to be made which were beyond the power of the ancient world to conceive. To do Dutens justice, however, it should be admitted that, though he has short chapters on the invention of glass, of acids, of alkalies, of distillation, and some other technical subjects, his work is mainly an attempt to show that philosophical and moral and social ideas were to a large extent anticipated by the ancients—a point which can be more readily granted. But, withal, Dutens' book is feeble. It is a gentle ground-swell after the Temple-Wotton-Bentley harricane of the previous century.

A book of a more purely antiquarian and historic character had been composed by Rollin about the beginning of last century. It forms part of his great treatise on the ancients, and was contained in the complete English translation published in 1736. Afterwards it was printed separately, but was almost lost sight of, till it was reprinted at Glasgow in 1837. It is well known as Rollin's "*History of the Arts and Sciences of the Ancients*." Like the work



of Goguet formerly mentioned, both Dutens' and Rollin's investigations have been completely superseded. The works of Dutens and Goguet, however, have one merit at least; they contain good lists of the authorities cited.

It is hardly necessary even to refer to an essay by David Hume on the "Rise and Progress of the Arts and Sciences." This title promises much, but the performance is so disappointing that it is useless to include it in a list of writings on the subject. It may, therefore, be passed over.\*

Long as the list of historians has become, and it is still incomplete, I see no cause to alter my opinion that the history of invention is still to write. One may even go farther and say that the history is now so immensely more difficult to grasp, that one may despair of ever seeing it written. Interesting as it is, it has become too technical and scientific ever to attract the unskilled reader, and there are—at the present time at all events—no skilled persons willing to sacrifice the practice of the arts to recording their progress; but if the history of invention and discovery is in future attempted, it must—if it is to be of any value—take one or other of the limited shapes formulated by Beckmann a hundred years ago.

2nd. Turning now to the collections of Secrets, or the Receipt-books themselves, there are a few new ones here to be seen, as well as some other interesting editions of those already mentioned. They may be taken, as formerly, in chronological order.

A new edition of the work of Theophilus† is now publishing in Vienna. It forms one of a series of original works illustrative of the history of art and of the technical part of art during the middle ages and Renaissance. The first division appeared in 1874 under the title "*Schedula Diversarum Artium*," edited by Albert Ilg, who has prefixed a long account of the different manuscripts, and discussed a number of questions as to Theophilus and his treatise. It contains a critical Latin text, with various readings,

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\* Among the arts, by far the most important in Hume's eyes were polite conversation and gallantry, if we may judge by his devoting eleven pages out of thirty-one of this essay to accounting for their probable origin. Had he but lived to read the letters collected and edited by M. de Laclos he would have deplored their having become exact sciences, as being "not half so valuable," to quote his own words.

† *Transactions*, ii., p. 183.



and a translation into German. The second division has not yet appeared, so far as I know.

The same series contains another monkish mediæval treatise, also edited by Ilg, and published at Vienna in 1873. The author lived between the 8th and 10th centuries, and his work is entitled "*Heraclius De Coloribus et Artibus Romanorum.*" It does not confine itself, however, merely to colours and their preparation, but includes illumination, gilding, niello-work, and other kinds of art.

On the previous occasion reference was made to the "*Speculum*" of Vincent de Beauvais as the biggest book of the middle ages, but no visible proof of the fact was forthcoming. By the two volumes now shown, which contain the "*Speculum naturale*" only, and make up but a fourth part of the entire work, every one can judge by very simple inspection, that if it be not the biggest, it must be very near it. Although these volumes do not bear any date or imprint, they are known to have been printed by Johann Mentellin, the first printer at Strassburg, about the year 1473. The *Speculum historiale*, which I have also, and which is bound in two even larger volumes, has Mentellin's imprint and the date 1473. In any case the book is a magnificent specimen of fifteenth century work, whether as regards the paper, the type, the ink, or the impression. But, besides, no one can look at it without being awestruck by the enormous labour of the author, and the patience and conscientiousness of the printer. It is a matter of surprise how Hain, who is usually so accurate, has altogether passed over the different fifteenth century editions of Vincent de Beauvais' work.\* One is, in consequence, deprived of the opportunity of comparing collations with him, and thus of ascertaining whether all the copies are alike; but, in consequence, a description of the book is all the more necessary, as I am not aware of any in English.

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\* Hain (*Repertorium Bibliographicum*, I. i. p. 358) gives "Bellovacensis (Vincentius) v. Vincentius Bellovacensis," but on turning to vol. II. ii. p. 494, where Vincentius ought to be, the name is wanting. Hain must have forgotten the cross reference entirely. Cornelius a Beughem (*Incunabula Typographiae*, Amst. 1688, p. 143) gives a short notice of Vincentius, and mentions several editions of the work, but does not specify that of Mentellin's. He calls the *Speculum* "*ingens opus.*" Watt (*Bibliotheca Britannica*, ii. 935) calls it "a work of vast labour, and the largest perhaps printed in these primitive times." It is curious that Watt should have used such a phrase when speaking of the year 1473.



The following applies to the present copy :—

Vol. I. *F. 1r, col. 1, Incipit speculū naturale Vincentij beluacēss | fratris ordinis pdicatorum.\* Et primo plogus d' | causa suscepti opis et eius materia. Primū | This contains the prologue and contents of the whole 33 books and occupies from f. 1 to f. 21, verso, ending on col. 1, line 42. F. 22r, col. 1, 'i' De diuersis mūdi acceptionibus. Ex | libro qui dicitur imago mundi. The volume ends on f. 368v, col. 2, which has only 13 lines. The two concluding lines are: quo pacto simul omes eo quo venerant agmine | redeunt. |*

Vol. II. *F. 1r, col. 1, 'xxxix' Continentia libri deciminoni. | to f. 8v, col. 1, line 25. F. 9r, col. 1, 'j' De opere sexte diei. Et primo de anima | libus. Guillerinus de conchis. | The volume ends on f. 327v, col. 1, which has 27 lines. The two concluding lines are: perstricta sunt. sed latiore in fine speculi hysto- | rialis. ppatescunt. Amen. |*

It is in large folio, semi-gothic character, double columns, with 66 lines each, and it has no numbering of leaves or pages, no signatures, catchwords, place, date, or printer's name.

Of Mentellin's edition there is a copy on vellum in the National Library, Paris, † one (I presume on paper) in the Bodleian Library, ‡ and one in the British Museum. I have not observed a copy in the catalogue of any other library which I have had an opportunity of consulting.

In the Hunterian Museum I have found a copy of another edition of the *Speculum naturale*.

\* As it is impossible without special types to give the contractions of the original, italic letters have been used merely to show where contractions occur.

† Van Praet, *Catalogue des livres imprimés sur vélin de la Bibliothèque du Roi*. Paris, 1822. iv. p. 290. No. 451. As this work contains the only actual collation of a copy which I know, for Brunet (*Manuel de Libraire*, 1864. v. col. 1253) simply repeats Van Praet, errors and all, I may remark that the collation agrees in every respect with my copy except in three points. Two are minute: in vol. I., f. 22r, col. 1, line 6, Van Praet gives *architipus* for *archetipus* in the original; in vol. II., f. 9r, col. 1, line 1, Van Praet reads, "·ij· De opere sexte diei," for "·j· De" etc. The third is all-important: Van Praet says the first volume contains 318 leaves, which is repeated by Brunet. This is certainly wrong; my copy contains 368 leaves. Leaf 318 falls about the middle of Book 16, and the volume contains 18 Books, as Van Praet himself says.

‡ *Catalogus... Bibliothecæ Bodleianæ*, Oxon. 1851. [Suppl.] p. 964.



Vol. I. *F. 1r, Headline: Prologus | F. 1r, col. 1, Incipit speculum naturale Vincentij be- | luacensis fratris ordinis predicatorū. Et pri | mo prologus de causa suscepti operis et eius | materia. Ca. Primum. |* *The prologue ends on f. 4r, col. 2; the contents of the thirty-three books then begin and go down to f. 18v, l. 38, the matter being equally distributed between the two columns; then last line: Registra Expliciunt. | F. 19 blank. F. 20r, Headline: Liber Primus | F. 20r, col. 1, De diuersis mūdi acceptōibus Ex libro | qui dicitur imago mūdi. Ca. 1. | Vol. ends f. 317v, col. 2, l. 20: eo quo venerant agmine redeunt. | f. 318 blank.*

Vol. II. *F. 1r, col. 1, Cōtinētia deciminoni libri | ends f. 7v, col. 1, line 21. F. 8r, Headline: Liber Decimusnonus | F. 8r, col. 1, De opere sexte diei. Et primo de animali | bus. Guillerinus de conchis. C. 1. | Vol. ends f. 280r, col. 2, l. 55. The last two lines are: stilo pstricta sunt sed latiore in fine speculi hystorialis | perpatescunt Amen. | F. 280v. blank. Is there a leaf, 281, containing the register? If so, it is awaiting.*

This edition is in large folio, gothic character, double columns, 67—69 lines in each, besides headlines to each page; there is no numbering of leaves or pages, no signatures or catchwords, no date, place, or printer's name. It is a splendid book, but hardly equal to Mentellin's.

For the present I omit Albertus Magnus, of whose work, *De Secretis*, I might show several editions, but a passing reference may be made to one of its modern adaptations alluded to at the close of the former part. It is in Dutch, and bears this title: "*De Wonderbare Geheymen, van den groote en klyne Aalbert in 3 deelen,*" Paris, 100,000. It appears to have been at one time sewn up round the outer margin, but whether to prevent the wonderful Secrets getting out of it, or a prying police getting into it, may be left undecided. It seems, however, from the apparently fictitious place, and certainly fictitious date, to have been sold under some sort of supervision or restriction. It is difficult to see the reason for this, for the book contains such gross nonsense that the wonder is, how it could find a purchaser at all.

We may pass therefore to a more important person, Bartholomew Glanville,\* of whose work, *De proprietatibus rerum*, I have found

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\* At p. 186 above, the author's name is misprinted Granville. In Stirling's Library there is a copy of the 1488 edition which I have not collated. In Trinity College, Cambridge, there is a copy of Koburger's edition, 1492. See *Catalogue of the Fifteenth-Century printed Books in ... Trinity College,*



six copies in the Hunterian Museum—two printed, and four in manuscript. It may be observed here that the previous statement, on page 186, to the effect that the first edition of the work appeared in 1478 is not correct. The first edition with a date is of 1480, referred to in the note on the same page. The copy there mentioned is a particularly fine one, and it corresponds with the account of the book as given by Hain. One of the Hunterian copies is of 1482, and corresponds with Hain's No. 2503. Hain, however, had not seen a copy of it, for he gives no collation, and his account is obviously copied from some other writer. The following, therefore, may be useful as filling a gap in the list of fifteenth century books:—

*Folio 1, which is blank, is wanting. F. 2r, with sig. a2, Incipit phemium de pprietatibus rerū | fratris Bartholomei āglici de ordine fra | trum minorum. The book ends on f. R11r, Explicit tractatus de pprietatibus rerū | editus a fratre Bartholomeo anglico or- | dinis fratrum minorum. Impressus sub | anno domini Millesimoquadringentesi- | mooctuagesimosecundo. die vero decem- | bri x. | Finis. | Laus deo. | f. R11v blank. f. R12r, Registrum |*

It is a small folio, printed in gothic character, with headlines, and signatures a—q A—R, 278 leaves in all. It is without pagination, place, or printer's name, and without catchwords. It is in two columns, with 54-55 lines in each and headlines. This is not quite so fine a book as the previous edition of 1480.

The second Hunterian copy is the English translation reprinted by Berthelet. The title-page is as follows:—

ANNO. M.D.XXXV. | BERTHOLOME | VS DE | PROPRIETATI | BVS | RERVM. | LONDINI IN AEDIBUS THO- | MAE BERTHELETI RE- | GII IMPRESSORIS. | CVM PRIVILEGIO A RE- | GE INDVLTO. | *At the end:*  
¶ Endlesse grace, blysse, thankyng, and | praysinge vnto our lorde god Omnipotent | be gyuen, by whose ayde and helpe this | translatiō was ended at Berkeley the .vi. | daye of Feuerer, the yere of our lorde. M. | CCC.lxxxxvii. the yere of the reyne of king | Rycharde the seconde after the Conqueste | of England. xxii. The yere of my lordes | age, syre Thomas lorde of Berkeley, that | made me to make this Translation. xlvii. | And printed by me Thomas berthelet, the | xxvii. yere of the most victori' reine of our | mooste grations (*sic*) soueraygne lorde kynge | Henry the viii. | Finis. |

*Cambridge, by Robert Sinker. Cambridge, 1876, p. 32, No. 122. For very full lists of the editions both of Albertus Magnus and of Glanville, reference may be made to the Rabelaisian work of James Atkinson: Medical Bibliography, London, 1834.*



It is a small folio, printed in black letter, with 8 preliminary and CCCLXXXVIII numbered leaves, double columns, 50 lines and headlines. The numbering is irregular. This is a beautiful book, and probably well deserves the encomium passed on it by Lowndes, that it was the finest work executed by Berthelet.

The manuscript copies are all on vellum. Three are in Latin, in double columns, with coloured capitals and conventional scroll ornaments. The fourth is a copy of Jean Corbichon's French translation, of which the first edition, with a date, was printed in 1482. The MS. is in large folio, double columns, with illuminations, and delicate sketches for others which the artist never finished.\*

Old manuscript receipt books may occasionally be met with. They contain usually very miscellaneous matter; the commonest are collections of practical, medical, and cookery receipts. There are three such collections here. One is a small volume in Italian and French, written on paper in a very beautiful and almost microscopic hand. The second is a collection of medical and pharmaceutical receipts in German, written in various hands, and belonging apparently to the 17th century. The third is in English, and is concerned with chemical receipts. It is of date 1649.

Of the printed collections referred to in the first part of this paper, I am able to show some other editions.

In the Hunterian Museum there is a fine copy of Gohory's translation of Levinus Lemnius' *De Secretis*. The title may be given in full :

Les | Occvltés | Merveilles et | Secretz de Natv- | re, avec plusieurs  
 enseigne- | mens des choses diuēses tāt | par raison probable que  
 par | coniecture artificielle : expo | sées en deux liures de nōn |  
 moindre plaisir que proufit | au lecteur studieux. | Par | Leuin  
 Lemne Medecin Zirizeem, & | nouvellement traduit de Latin en |  
 François, par I. G. P. | Avec deux tables, l'vne des argu- | mens  
 des chapitres, l'autre des | singulieres matieres d'iceux. | A  
 Orleans, | Par Pierre Trepperel. | 1568. † |

It is a 16mo, with 17 leaves not numbered, and the eighteenth numbered 18, 250 numbered, and index, 20 not numbered. The title is enclosed in a woodcut border. I. G. P. is the translator's usual method of indicating himself: 'Jacques Gohory, Parisien.'

\* I observe Dibdin mentions this MS. *Northern Tour*, Lond. 1838, ii., p. 735.

† On p. 187 above, it is said erroneously to have been printed at Paris.



This, like Gohory's other works, is a very rare book. Of Levinus' work in Latin, there is a copy of the Antwerp edition of 1581 among Sir W. Hamilton's books, now in the University Library.

In addition to the different copies of the Treasure of Evonymus, formerly mentioned, I can now show the first edition of Zurich, 1554. It is a very elegant book, much superior to any of the subsequent editions I have seen.

Of the Secrets of Alexis, which was once so popular a collection, three copies may be added to those formerly shown. One is of date 1560, and was printed at Basil by Perna; the second—from the Hamilton Collection—at the same place, in 1563; and the third is a German translation, printed in 1573, without place or printer's name. These three all bear to have been edited by Johann Jacob Wecker, who subsequently compiled a more systematic work on Secrets. In 1616, at Basel, Wecker published a little volume in German, entitled *Kunstabuch ein nutzlicher Büchlein von mancherleyen künstlichen Wassern, ölen vnd Weinen*. The waters, oils, and wines for preparing which Wecker gave these receipts, were intended for medical purposes chiefly.\*

There is an Italian version of Meurdrac's chemical receipts, and there are here also two editions of Neri's Art of Glass, one in Latin, Amsterdam, 1668, and a German translation by Geissler, Franckfurt, 1678.

A reprint of Gabriel Plattes' *Discovery of Subterranean Treasure*, with additions, was published at London in 1738, and another volume of Metallurgical Secrets, translated from the German of Silberman into French, at Paris in 1773.

I have also a copy of Falloppio's Secrets, in German, printed at Augspurg in 1588, if not the first edition of the translation, at all events an early one.

When mentioning Fioravanti's collection of Medical Secrets,† I was not aware that there was one by him on the Arts. I have not the original, but I have found that Gabriel Chappuys, already referred to as the translator of Sardi's tract, published

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\* Wecker was born at Basle in 1523, learned and afterwards taught medicine there, but removed to Colmar in 1566. He compiled several works, and his wife wrote a cookery book.

† *Transactions*, ii., p. 191.



a French version. The copy which is here is of the second edition, and bears date, Paris, 1586.

Besides those already referred to, the Hamilton collection possesses the Hanau 1619 edition of Baptista Porta's *Magia Naturalis*, and the Basel 1662 edition of Wecker's own work, *De Secretis*, to which may be added that of Basel 1613, and the French version, printed at Rouen in 1663. All of these are in 8vo. They are of no special interest, except as showing the number of such books in circulation a couple of centuries ago.

The preceding are merely additions to those formerly exhibited. Those which follow are collections not alluded to before.

In the first part attention was directed to a number of little books of art receipts, all apparently taken from one common source. The oldest version then shown was dated Augspurg, 1537. I have here one printed in 1531. It is entitled :

Rechter Gebrauch d' Alchimei, mitt vil bissher verborgenen, nutz-  
baren vnnnd lustigen Künsten, nit allein den für witzigen  
Alchimismisten (*sic*), sonder allen kunstbaren Werckleutten, in  
vnd ausserhalb feurs. Auch sunst aller menglichen inn vil  
wege zugebrauchen.

It is a small quarto of xxvii numbered leaves, without place or printer's name. On the title page is a vignette of a jeweller's (?) shop. All the receipts in this are included in the 1537 edition, which, however, is a somewhat larger collection. To a corresponding extent, the receipts in this are to be found in the various issues of *Andrée's Kunstboeck*.\* About a century later, in 1613, there was published at Franckfurt a small volume, entitled:

Alchimia, Das ist, alle Farben, Wasser, Olea, Salia, vnd Alvmina,  
damit man alle Corpora, Spiritvs vnd Calces præparirt, sublimirt  
und fixirt, zubereyten. Vnd wie man diese ding nutze, auff  
dass Sol vnd Lvna werden möge.

Though this is the title-page, the running title of the book is :  
' *Rechter gebrauch der Alchimey, mit viel bissher verborgen, nutz-  
baren vnnnd lustigen Künsten, nit allein den Alchimisten, sondern allen  
Kunstbaren Werckleuthen, auch sonst allermeniglich in viel wege  
zugebrauchen*. It forms a small octavo volume of 130 pages, and  
four of index and colophon. It was given to the world by a

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\* Lowndes (*Bibliographer's Manual*, Lond., 1865, vol. iv., p. 2235) speaks of a "*Book of Secrets*," translated by W. W. P. from the Dutch, London, 1596, 4to. This I have not seen ; is it a translation of *Andrée's* collection ?



certain Petrus Kertzenmacher of Mayence, who prefixed an address to the reader as to the value of alchemy in the arts, but he does not either claim or disown the authorship. The fact is, however, that not the second title only, but a considerable part of the contents is taken direct from the 1531 edition. Of Kertzenmacher's work, if really by him, I have here, besides the edition of 1613, a late reprint dated 1720, and a copy in MS. in a small 8vo volume of 119 leaves, written in the 17th century. It becomes therefore a little difficult to adjust the relationship of these different collections, of which, beginning with that of 1531, eight have been now exhibited.

In the year 1616 appeared a work by the famous Vanini, who was consigned to the flames at Toulouse in 1619 for atheism. It is a treatise on the secrets of nature, and belongs therefore to the first class of such books.\* It is in the form of a dialogue, and in it Vanini expounds his views as to the economy of nature. It is a much less famous book than the author's *Amphitheatrum Æternæ Providentiæ*, which appeared at Lyons in 1615, but at the same time it is very much rarer.

A collection of medical secrets:—*Sommaire de la Medecine Chimique, . . . . Avec un Recueil de diuers secrets de Medecine*, was printed in 8vo at Paris in 1632, and another different collection:—*Recueil des plus beaux Secrets de Medecine . . . comme aussi plusieurs secrets curieux sur d'admirables effets de la Nature & de l'Art*, appeared at Paris also in 1695. Chemical, medical, pharmaceutical and natural secrets were collected also by a Martin Schmuck, and published under the title—" *Secretorum Naturalium, Chymicorum, & Medicorum, Thesauriolus*," at Schleusingen in 1637. Besides it there are here editions of 1652-53, and one of 1686.

Another collection was printed at Hamburg in 1689 by Gottfried Schultz. The compiler has not revealed his name, and it is a pity, for his work is a thoroughgoing receipt-book and a typical specimen of its class. Its long-winded title-page may be condensed, however:

Schatzkammer rarer und neuer Curiositäten, in den aller-wunderbahresten Würkungen der Natur und Kunst, Darinnen allerhand seltzame und ungemeyne Geheimnisse, bewehrte Artzneyen, Wissenschaften und Kunst-Stücke zu finden. . . . Der dritte

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\* *Transactions*, ii. p. 183.



Druck, jetzo mit dem dritten Theil von vielen Chymischen Experimenten und anderen Künsten vermehret, deme angehenget ist ein Tractat, Naturgemässer Beschreibung der Coffee, Thee, Chocolate, Tabacks, und dergleichen.

This work is of the most comprehensive and catholic description, including medicines, perfumes, fireworks, painting, fishing, colouring of marble and paper, extirpating of noxious insects, gardening, gilding, and what not.

Just the reverse in character of the preceding is the famous work of Weidenfeld, "*Concerning the Secrets of the Adepts*," of which there are at least four editions, for they are here, namely, London 1684, Hamburg 1685, Leipzig 1768, all in Latin; and London 1685, in English. The secrets of the adepts are treated very discreetly, and the author restricts his attention mainly to one—what was called Raymund Lully's Spirit of Wine, believed to be the substance now known to chemists as acetone. The book, however, contains besides some preparations for medical use and a chapter on transmutation; but instead of the descriptions revealing the secrets, they seem to involve them in still deeper obscurity. Considering that the book deals with secrets of chemistry in a very secret way, Weidenfeld's may be called in every sense a "Secret Work."

Of what may be called truly modern works on the Arts, the oldest and most important is the *Lexicon Technicum*, compiled by Dr. Harris, F.R.S., and published about the beginning of last century. For a long time it was the principal book of its kind, and it passed through several editions. In the University Library there is a copy of the first (?) edition, 1704-10, in two volumes folio, closely printed in double columns, and with numerous illustrations. It is a very interesting book.

In 1735 there was published at London a *Dictionarium Polygraphicum* in two octavo volumes. This work is intermediate between that of Dr. Harris and the *Polygraphie* of Salmon, mentioned in part one, to which indeed in several respects it bears a notable resemblance. These are not mere receipt-books, but rather technical encyclopædias, giving the rationale as well as the practical execution of a process or an art.

At a later date in 1777 came the *Dictionnaire des Origines* in six volumes, of which I regret there is no copy to put before you, and thereafter we pass into the later literature, which is beyond our



province. For purely modern treatises on the arts one must consult the classified catalogues of special libraries, such as that of the Royal Institution, or—which is of more interest to us—of the Philosophical Society here, and such books of reference as Schubarth's and Bruno Kerl's *Repertorium der Technischen Literatur*.

In what has now been said, the older literature is not by any means exhausted; of editions alone there are plenty to be seen in catalogues which have not been quoted, simply because there were no copies to put before you; but doubtless there are still other collections of receipts and secrets, with which I am unacquainted even by name, but which would reveal themselves to any painstaking investigator. Enough, I hope, has been quoted to show the extent and variety of this literature as evidence that our predecessors were not so indifferent to the practical arts as we are apt to suppose. Hereafter should I meet with other works of special interest on the subject, I may take the liberty of bringing them under the Society's notice.

Since finishing these last words, I find more last words are necessary to dispose of a score of works and editions which have in the meantime drifted into view. Their appearance shows the accuracy of what has just been said: that the older literature is not exhausted.

Two copies of Goguet's history I had overlooked in the University Library. One is of the 1758 edition in six small volumes; the other appeared in 1820, and is called the sixth edition. One could hardly have supposed that this work would have passed muster even in 1820. Though professing to be revised, it is merely a reprint, and even as such it is a poor production, the plates especially being of the shabbiest.

Beckmann's second class of histories is well illustrated by a tract of the Italian antiquary and printer Dominico Maria Manni, *De inventis Florentinis*, published at Ferrara in 1731. When one thinks of the notable men whom Florence can claim—architects, natural philosophers, discoverers, artists of every kind—it will be seen that the author had a rich field to work. It is a pity that he has not made more of it, but the time for the proper cultivation of it was hardly come. This book seems to be very little known.

In 1737 Abbé Goujet wrote an essay on the state of the



sciences in France from Charlemagne to King Robert. It has the merit of being brief, and since it gained the prize of the French Academy, the student of the history and philosophy of the history of science has an opportunity of comparing what was reckoned best in 1737 with more recent dissertations on similar topics. This essay belongs to both the second and the third of Beckmann's classes.

One ought almost to apologise for having omitted all mention of the histories of mediæval art by M. Jules Labarte. They are works of such acknowledged merit on goldsmith's work, on carving in wood, ivory, wax, and metal, on enamelling, pottery, glass, armour, and such like branches of the arts of decoration, that the mere mention of them is all that is required. That which is best known is the history which appeared in one volume some thirty years ago, but there is besides the very sumptuous work on the industrial arts, published in 1864, and again in 1872. These may be taken as examples of Beckmann's third class of histories.

There are still three copies of Glanville to consider. The first is of the edition of 1488, referred to in the note, p. 248 above, as being in Stirling's Library. I have now collated that copy, and as I can confirm Hain's account (No. \*2507) further description is not at present necessary.\*

The second is a copy of the Strassburg edition of 1485. Hain's collation (No. \*2506) in this case also is confirmed by comparison with an actual copy, so that it does not need to be repeated. In the copy I have had before me the only difference is in certain blank leaves. In Hain's copy there was a blank leaf between the table and text; in my copy this leaf is wanting, but there is a blank leaf at the end which was wanting in Hain's. In all other respects Hain's account agrees.

The third copy is one of the French translation, and as no account of it is forthcoming, I may give the following.

*F. 1 is blank. F. 2r, with sig. ii, Headline: Prologue | Then in long lines: Cy commence vng tresexcellent liure nomme le proprietaire des choses translate de latin en frã | coys a la requeste de trescrestien et trespuissant (sic) roy charles quint d ce nom adonc regnant en france | paisiblemēt, | le quel traicte moult amplement de plusieurs notables matieres comme on pourra app-*

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\* In the copy in Stirling's Library leaf Si is wanting.



| ceoir par les prologues qui sensuyuent | *Large woodcut depicting the presentation of the translation to the king.* Then col. 1, Le prologue du translateur. | ( ) Treshault z trespuissant prince charles par la diuine pouruoyāce de dieu | &c. ends f. 3r, col. 2, Cy finist le prologue de lacteur. | F. 3v, col. 1, Cy commencent les rubriques de tout ce present liure. | *Table ends f. 8r, col. 2, Cy finist (sic) la table* | 8v, blank. F. 9r, with sig. a., *Headline:* Le premier liure de Dieu | then in long lines: Cy commence le premier liure du propriétaire au quel tant seullement est traictie de la saincte trinité et vite diuine avec ses noms et proprietés | *Woodcut.* Then col. 1, Le premier chapitre qui est de dieu. | (e) N couuoit aulcunes choses declairer | des proprietés z des natures &c. *At the end:* ( ) Estuy liure des proprietés des choses | fut translate de latin en francois lā de grace. M.CCC.lxxii. par le commā dement de tres puissant et noble prince Charles le quint de son nom regnant en ce temps en France pasiblement. et le translata son petit et humble chapelain frere Iehan Corbichon de lordre sainct augustin, maistre en theologie de la grace et p̄mociō du dit prince et seigneur tres excellent et a este reuisite par uenerable z discrette personne frere pierre ferget docteur en theologie du couuent des augustins de lion. et impri me audit lieu de lion par hōnorable hōme maistre Iehan cyber maistre ē lart de impression |

It is a large folio of 252 leaves, printed in gothic character, with signatures in eights, double columns, except the table which is in three columns, and some of the headings which are in long lines. There are 54-56 lines, besides head-lines, and there are 20 large rude woodcuts. There is no date, but it was printed about 1495. This is one of the later editions of Corbichon's translation, of which a MS. in the Hunterian Museum has been already referred to. It is just mentioned by Hain (No. 2513), who had seen no copy, and very little is said about it by Brunet. It may be entitled, therefore, to rank as one of the rare books of the fifteenth century; and it is rare, probably because, being in the vernacular, it was much read and the copies were gradually used up. Of these three editions the last is undoubtedly the finest. The other two are common-looking, and obviously were got up to meet a demand for the book in a cheap shape. Not one of the Latin copies I have seen is so handsome as the first edition of 1480. It may be noted that Glanville's work is supposed to have had a place in Shakspeare's library, which may give it additional interest to readers of English and antiquarians.



Of Alessio's Secrets an edition earlier than any which have yet been noticed is in the Euing collection. It is called the second edition, and was printed at Lyons so long ago as 1558. It is a small volume in 16mo, and contains only the first part of the collection.

Another edition of Wecker's Secrets has also turned up. It appeared at Basil, and is one of the most respectable copies I have seen. Usually the work is printed badly on spongy paper stained with foxing, so that it is quite a relief to meet a copy like the present on firm fair paper. It is a mere re-issue, however.

To Kertzenmacher's list must be added an edition of the *Alchymia*, which appeared at Frankfurt in 1589. It has the rude plates of apparatus, the two titles, and Kertzenmacher's preface. This, again, is the earliest copy I have seen, but there may be others still earlier.

Another Italian collection of Secrets revealed, like some of those already mentioned, by a lady, Isabella Cortese, was published at Venice in 1625. As it is a new and revised edition, there must be others still earlier, but these I have not encountered. This is a very miscellaneous collection, but as might be expected, the cosmetic art bulks largely in it. It is proverbially hard for a woman to keep a secret, so that it is not to be wondered at that Mlle. Meurdrac, Signora Cortese, Frau Wecker, and I suppose others, found it impossible to keep several score.

Other books distinctly on the same subject, besides Liebaut's already noticed, may be mentioned. One I know only by Nodier's reference to it.\* It is the treatise of André Fournier: *La décoration d'humaine nature et aornement des dames*, printed at Paris in 1530, and now of extreme rarity. Another, however, I have seen. It is entitled *De Decoratione*, was written by Hieronymus Mercurialis, and was first printed at Venice in 1585. The edition I have was printed at Franckfurt the year following. The most interesting thing about this second edition is that it contains in an epistle to Mercurialis, dated Bologna, Feb. 22, 1586, the first account by Tagliacotius of his method for the restoration of noses, one of the branches of surgery which is fairly entitled to rank among both the decorative and useful arts.

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\* Nodier, *Description . . . d'une jolie collection des Livres*. Paris, 1844, p. 50, No. 130.



Another treatise on the personal decoration of the female sex was written by Sir Hugh Plat of Lincoln's Inn in 1602. This is a work I regret my inability to get, for I should like to have been able to disclose some of the secrets in use two and half centuries ago, as well as to have ascertained how the author came by his information. Of the same Sir Hugh, there are two works which may be included here. One is the first edition of his *Ijewell House of Art and Nature*, printed at London by Peter Short\* in 1594, of which a later issue was quoted in the first part of the present notes. As usually happens, the first edition is a much more interesting book than that of 1683. Besides its age, it has some curious ornamental title-pages to recommend it to the book-fancier, and it is printed more legibly, which may be in its favour with those who still believe that books are only for reading. At the end of this volume, Sir Hugh tabulated a few important inventions which he was keeping to himself as valuable secrets, but which he had no objection to reveal to any one really interested in them. A few years later, in 1603, Peter Short printed for him another tract containing at length a description of one of these inventions, to which he must have attached considerable importance. The tract is in small quarto, and is entitled *A new, cheap and delicate fire of Cole-balles*, and so far as I know is one of the earliest endeavours to economise fuel and diminish smoke. The invention consisted in mixing pounded sea-coal with sawdust or other combustible matter, adding a certain proportion of loam, and working the whole into round balls, which were placed in the grate to be burned. There is a vignette on the title-page representing a grate or fire-place with a fire of these balls in it. This, I suppose, is one of the scarcest tracts of the author.

Half a century and more after Plat came another inventor, to whose book it is very difficult to assign a place. I refer to the Marquis of Worcester, one of the most ingenious men of any time, who, however, did not commit to paper more than the mere titles of his inventions. Within the last dozen years they have been brought prominently before the notice of the curious in these matters by the elaborate work of Mr. Dircks, to which any

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\* Peter Short seems to have been the scientific publisher of his day. Besides this work of Plat's, he was the printer of the first edition of Gilbert's book *De Magnete* and of Gesner's *New and Old Phisicke*.



one wishing to know about the Marquis will go. This work contains not only a reprint of the *Century of Inventions* itself, but a long biography, and an introduction and notes to the *Century*, in which a well-deserved castigation is administered to Messrs. Horatio Walpole and David Hume for their attempted criticism of the inventions. There is a list of the editions also, but this is neither so complete nor so detailed as a bibliographer would desire.

Whoever wishes the full flavour of the Marquis' inventive ideas will read them in the first edition—if he can get it. It is a tiny duodecimo, printed at London in 1663, and is now become scarce. Nor are the two Glasgow editions at all common, though printed a century later. One of these has the date 1767, and the imprint of R. and A. Foulis, the famous Glasgow printers; the other, 1792, and the names of Duncan and Chapman. This last edition is not mentioned by Dircks. Partington's edition of 1825 is a pretty and handy book, but it is inferior as an edition.\* All these, as well as Dircks' own edition, are contained in the University library, so that those who wish it have a fair command of available information about the author.

Passing to another division, that of Medical Secrets, one may be mentioned for the benefit of those who may be more lucky than myself in getting a copy. It is entitled *Les Fleurs et Secrets de Médecine*, translated from the Latin into French by Raoul du Mont Vert, and printed in a small black letter volume about 1520. This contains not only many wonderful things about medicine and physiology, but treats also of comets and of the magnitude of the sun and the heavens, so that it is altogether as fascinating a book as one could wish for a winter evening.

Among the voluminous writings of that previous person, Alexander Ross, there is one entitled *Arcana Microcosmi: or, the hid Secrets of Man's Body discovered; in an Anatomical Duel between Aristotle and Galen, concerning the Parts thereof*. The duellum begun between these two sage philosophers is carried on in the later parts of the book between Ross himself and his distinguished

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\* There are two ludicrous errors on p. 36. *A propos* of a universal alphabet Partington refers to the proposal of "George Dalgaru, an Englishman," published at London in 1661. He means George Dalgarno, who was born in Old Aberdeen, and studied at Marischal College, and afterwards had a school at Oxford. Anthony a Wood calls him a "Scot," as indeed what else could he be?



contemporaries William Harvey and Dr. Thomas Brown; Ross objecting to some of Harvey's views about generation and circulation, and confuting some of Brown's own errors respecting vulgar errors. The discussions are not of much importance now, but the way in which they were conducted is not without interest at the present day. Whoever reads the *Arcana* will see that the difference of opinion arose from imperfect knowledge or absolute ignorance of the facts, and that suppositions and fancies too frequently put on the appearance of realities. When one reads the biological discussions between rival schools in the scientific journals of 1883, doubt unbidden will arise in the mind of the non-partizan onlooker as to whether the parties engaged in the modern anatomical duel know their facts any better than Ross and his contemporaries did theirs.

Of the books of Secrets there is a set which I have tried to avoid, though a few have been quoted in the course of the preceding. These are collections of Chemical Secrets, which rather belong to the literature of that science in general than to what has been chiefly under consideration. Exception may now be made in favour of two, since they bear the name distinctly.

Raymund Lully, one of the lights of alchemy in the thirteenth century, wrote a work on the quintessence of things under the title, *De Secretis Naturae*. It was a popular work with the old chemists, for it passed through several editions; and it was upon this quintessence that Weidenfeld wrote his commentary, already alluded to. Of these editions three have come before me—that of Venice, 1542; Nürnberg, 1546; and Cologne, 1567; all of them desirable books.

Long after Lully, Sir Kenelm Digby, who dabbled in chemistry and medicine and philosophy, compiled a collection of Chemical Secrets, which was published after his death by George Hartman, his operator. It appeared in 1683, was translated into German the year following, and I have seen a Dutch translation that was published in 1693 at Amsterdam.

The following list contains short titles of all the books exhibited to the Society and referred to in the two parts of the paper. It is arranged in alphabetical order of authors' names, and to make it more useful for reference I have added collations of the copies which I have had before me. The MSS., however, are not included, nor are books and editions known to me only by reference to them in library and sale



catalogues and in bibliographies, even though they are mentioned in the paper itself, so that this list is not, and does not profess to be complete.

In the list numbers enclosed in square brackets denote pages not numbered in the book; such pages usually contain—when occurring at the beginning of a volume—preface, dedication, contents;—when at the end—the index; in both cases one or more of the pages may be blank.

**AALBERT.**

De Wonderbare Geheymen, van den groote en klyne Aalbert, in 3 Deelen. Gedrukt te Parys, In't Jaar 100,000. 8vo, pp. 48, [46], 3-44.

**ALBERTUS MAGNUS.**

Les admirables Secrets d'Albert le grand. A Cologne, 1722. 12mo, pp. xx. 284. Engraved title and four plates.

**ALBERTUS PARVUS.**

Secrets Merveilleux de la magie naturelle & cabalistique du Petit Albert. A Lion, 1743. 12mo, pp.[12] 252. 10 Engraved plates.

**ALCHIMIA.** See KERTZENMACHER (PETRUS).

**ALESSIO.**

De' Secreti. Prima parte, diuisa in sei libri. Seconda editione. In Lyone, 1558. 16mo, pp. 392 [30].

De Secretis libri, mira quadam rerum varietate vtilitateq'; referti. Basileae, 1560. 8vo, pp. [14, 2 blank] 354 [29, 3 blank].

De Secretis libri septem, a Ioan. Iacobo Veckero ... ex Italico sermone in Latinum conuersi, & multis bonis secretis aucti. Basileae, 1563. 8vo, pp. [14, 2 blank] 480 [46, 2 blank].

De' Secreti. In Venetia, Presso Giorgio de' Caualli. 1568. 8vo, Prima Parte, ff. 155 [11, 2 blank]; Seconda Parte, ff. 76 [8]; Parte Terza, ff. 48 [4].

Kunstbüch. Des Wolerfarnen Herren Alexij Pedemontani vō mancherley nutzlichen vnnd bewerten Secreten oder Künsten, jetz newlich auss Welscher vnnd Lateinischer sprach inn Teutsch gebracht, durch Doctor Hanss Jacob Wecker.... Without place (Basel ?), 1573. 8vo, pp. [48] 462. Der ander Theil: [8] 274 [22].

The Secrets of the reuerend Maister Alexis of Piemont, containing excellent remedies against diuerse diseases, wounds, and other accidents, with the maner to make Distillations, Perfumes, Confitures, Dyings, Colours, Fusions, and Meltings. A worke well approued, verie necessarie for euerie man. Newly corrected and amended, and also somewhat enlarged in certaine places, which wanted in the first edition. Translated out of French into English by William Ward. Imprinted at London by Peter Short, for Thomas Wight. 1595. Small 4to, ff. [6] 348. [14 ?]

The book is in four parts with title pages—included in the pagination—to each. The first three bear the name of Ward: the fourth is as follows: The fourth parte of the Secretes of Alexis of Piemont, containing sixe



hundred four score and od experimented medicins, pertaining to physick and chirurgery, long time practised by him and in his latter daies published to an vniuersall benefit, hauing vntill that time reserued it only to himselfe, as a most priuat and pretious Iewel. Translated out of Italian into English, by Richard Androse.

The copy I have had before me wants 2 (?) leaves of the Table at the end.

**ANDREE or ANDRIESEN (SYMON).**

- 10 Kunst Boeck. Nyeulijck wten Alchemistischchen gront vergadert. [Amsterdam], 1549. Small 8vo, ff. [1] liij [vi].

The last leaf contains the emblem of Cornelis Karelsen for whom the book was printed; A hooded falcon perched on the branch of a withered tree with a monogram of C.K. in the lower right hand corner. On the verso of title is the picture of a man working in an apothecary's shop.

Een schoon Tractaet van sommige werckingen der Alchemistische dinghen, ... Noch een schoon Tractaet Boecxken, inholdende van alderley verwen te maecken. Gedruckt toe Reess. 1581. Small 8vo, ff. xxviiij. [4].

Een schoon Tractaet van sommige werckingen der Alchimistische dinghen, ... Noch een schoon Konst-boec, seer nutlick voor allen Werclieden. Ghedruckt t' Amstelredam. 1600. Small 8vo, ff. xxvj; xxvj; [4].

See KERTZENMACHER (PETRUS). See KUNST-BÜCHLEIN. See RECHTER GEBRAUCH D'ALCHIMIEI.

- ART'S TREASURY of Rarities : and curious Inventions. The fifth edition. London, no date. Small 12mo, pp. 84.

**BECKMANN (JOHANN).**

Beyträge zur Geschichte der Erfindungen. Leipzig, 1786-1805. 5 vols. Small 8vo.

A concise history of Ancient Institutions, Inventions, and Discoveries in science and mechanic art; abridged and translated from the Beyträge ... of ... Beckmann.... In two volumes. London, 1823. 8vo. I. pp. xvi. 404. II. pp. xi. 401 [1].

A history of inventions, discoveries and origins.... Translated ... by William Johnston. Fourth Edition ... by William Francis ... and J. W. Griffith. London, 1846. 8vo. I. pp. xxiii. 518. II. pp. xii. 548. 2 portraits.

**BIRINGUCCIO (VANOCIO).**

De la Pirotechnia. Venetia, 1540. Small 4to, ff. [8] 168.

Pirotechnia. Li diece Libri della Pirōtechnia. Vinegia, 1550. Small 4to, ff. [8] 167 [1].

Pirotechnia. Venetia, 1559. 8vo, ff. 345 [7].

- 20 La Pyrotechnie. Paris, 1572. Small 4to, ff. [4] 168.

**BLANCOURT (H.)**

The Art of Glass.... Now first translated into English. London, 1699. 8vo, pp. [16] 355 [13]. 9 copper plates.



**BREMNER (DAVID).**

The Industries of Scotland. Edinburgh, 1869. 8vo, pp. [2] viii. 535.

**CANEPARIO (PIETRO MARIA).**

De Atramentis civiscvnqve generis. Venetiis, 1619. Small 4to, pp. [24] 368.

De Atramentis cujuscunqve generis. Londini, 1660. Small 4to, pp. [16] 568.

**CARAMUELIUS (ASPASIUS).** See SCHOTT (CASPAR).

**CHAPPUYS or CHAPUIS (GABRIEL).** See FIORAVANTI (LEONARDO). See SARDI (ALESSANDRO).

**CONTARINO (LUIGI).**

Il vago, e dilettevole Giardino. In Vicenza, 1589. Small 4to, pp. [12] 488 (for 504) [56].

**CORTESE (ISABELLA).**

I Secreti...Ne' quali si contengono cose Minerali, Medecinali, Profumi, Belletti, Artiftij, & Alchimia; con altre belle curiosità aggiunte. Di nvovo ristampati, e con somma diligenza corretti. In Venetia, 1625. Small 8vo, pp. [16] 206.

**DICTIONARIUM POLYGRAPHICUM:** or, the whole body of arts regularly digested. [Two volumes]. London, 1735. 8vo. I. Title—preface [pp. 4], Sigs. B–Nn 6. Frontispiece and 30 plates. II. Fly leaf and Title. Sigs. B–Ll 5. 1 leaf of advertisements. 24 plates.

**DIGBY (KENELM).**

Chymical Secrets, and Rare Experiments in Physick and Philosophy... Published...by George Hartman. London, 1683. Small 8vo, pp. [16] 272. 4 Plates.

Ausserlesene, seltzame philosophische Geheimnisse und chymische Experimente. Hamburg, 1684. Small 8vo, pp. [8] 269 [11]. 4 plates and portrait.

30 **Theatrum Chemicum, ofte geopende deure der Chymische Verborgentheden....Met een vervolg over de Chymische Verborgentheden... door den Ridder K. Digby. Tot Amsterdam, 1693. Small 8vo, pp. [16] 490 [22]; 170 [6]. 11 plates.**

**DUTENS (LOUIS).**

An inquiry into the origin of the discoveries attributed to the Moderns. London, 1769. 8vo, pp. xl. 459.

Origine des découvertes attribuées aux Modernes. Troisième édition, considérablement augmentée. A Londres, 1796. 4to, pp. xxii [2] 363 [1].

**EVONYMUS.** See GEESNER (CONRAD).

**FALLOPPIO (GABRIELE).**

Secreti Diversi & miracolosi. In Venetia, 1578. Small 8vo, pp. [32] 366 [2].

Kunstbuch: ... von mancherley nutzlichen, bissher verborgnen, vñ lustigen Künsten. [Augsburg], 1588. 8vo, pp. [16] 496 (for 466) [46]; [43, 5 blank].



Wunderlicher menschlichem Leben gewisser, vnd sehr nutzlicher Secreten, Drey Bücher. Franckfurt am Mayn, 1641. 8vo, pp. 474 [29, 1 blank].

FIORAVANTI (LEONARDO).

Del Compendio de i secreti rationali ... libri cinque. In Venetia, 1571. 8vo, ff. [21, 1 blank] 187 [1 blank]. Portrait of author on verso of preliminary leaf 21.

Miroir Vniversel des arts et sciences, ... Mis en François par Gab. Chappvys, ... Seconde edition. A Paris, 1586. 8vo, pp. [16] 526 [2 blank].

Compendium oder Ausszug der Secreten. Darmbstadt, 1624. 8vo, pp. 399.

Three exact pieces ... viz. his rational secrets. London, 1652. Small 4to, pp. [8] 16 [2] 180 ; [6] 106 ; [10] 92 ; [12] 75.

GESNER (CONRAD).

40 De secretis remediis liber avt potivs thesavrvs, Evonymo Gesnero Philiatro authore. Tigvri, 1554. Small 8vo, pp. 580 [38].

Thesavrvs Evonymi Philiatrī, de remediis secretis. Lvgdvni, 1555. 16mo, pp. [8] 498 [38].

Evonymvs. Conradi Gesner ... de remedijs secretis, Liber. Without place (Zurich), date and printer's name (Froschauer). Small 8vo, ff. 202 [17, 1 blank].

Tresor des Remedes Secretz. A Lyon, 1559. 8vo, pp. [48] 440 [6].

A new booke of destillatyon of waters. London, 1565. Small 4to, pp. [18] 408 [16].

Köstlicher Artzneyschatz. Zürych, 1608. Small 4to, pp. [8] 353 [15]; [4] 288 [16].

The newe Iewell of Health. London, 1576. Small 4to, ff. [12] 258.

The practise of the new and old phisicke. London, 1599. Small 4to, ff. [10] 256.

Qvatre Livres des Secrets de Medecine, et de la Philosophie chymiqve. Par Iean Liebaut. A Roven, MVIC. 8vo, pp. [8] 352 [6, 2 blank].

Secrets de Medecine et de la Philosophie Chimiqve. Par Iean Liebavt. Roven, 1643. 8vo, ff. [7, 1 blank] 297 [14, 1 blank].

GLANVILLE (BARTHOLOMEW).

50 De proprietatibus rerum. Without place (Lugduni?), by Nicolaus Pistoris de Benssheim and Marcus Reinhard de Argentina. 1480. Small folio, ff. [320].

De proprietatibus rerum. Without place and printer's name, 1482. Small folio, ff. [278].

Liber de proprietatibus rerum. Argentine, 1485. Small folio, ff. [300].

Proprietates rerum. No place, 1488. Small folio, ff. [326].



Le Proprietaire de choses. Lion, Jean Cyber, no date (about 1495).  
Folio, ff. [252].

De proprietatibus rerum. [In English]. Londini in Aedibus Thomae  
Bertheleti. 1535. Small folio, ff. cclxxxviii.

GOGUET (ANTOINE YVES).

De l'Origine des Lois, des Arts et des Sciences. Paris, 1758. 12mo.

I., i. pp. xl. 394, 1 Plate; ii. [2] 395—830, viij., 2 Plates. Table.

II., i. [2] viij. 445; ii. [3] 446—800. Table.

III., i. [2] v—viiij. 309, 6 Plates; ii. [3] 310—614. Table.

The origin of Laws, Arts and Sciences. Edinburgh, 1775. 8vo.

vol. I. pp. xxvi. 402. Table & 3 plates. vol. II. pp. vi. 424.

Table. vol. III. pp. vi. 341. Table & 6 plates.

De l'Origine des Lois, des Arts et des Sciences. Sixième Édition.

Paris, 1820. 8vo. Tome I. pp. [4] 418. 3 Plates. Tome II.

pp. [2] 389 [1 blank, 2]. Tome III. pp. [2] 365. 6 Plates.

GOHORY (JACQUES). See LEMNIUS (LEVINUS).

GOUJET ( ).

De l'état des sciences en France, depuis la mort de Charlemagne, jusqu'à  
celle du Roi Robert. Paris, 1737. 12mo, pp. [4] 125 [3].

HARRIS (JOHN).

60 Lexicon Technicum: or, an Universal English Dictionary of Arts and

Sciences. London, 1704-10. fol. no pagination. Vol. I. pp.

[20]; Sigs. in fours: B—70i. Portrait and plates. Vol. II. pp.

[24]; Sigs. B—7Hi. pp. 44. [10] 120 [62]. Plates.

HERACLIUS.

De coloribus et artibus Romanorum, ed Albert Ilg. Wien, 1873.

8vo, pp. viii. xxiv. 190.

HISTORY of the first inventors. See (A) PLEASANT AND COMPENDIOUS HISTORY.

HONORIUS.

Ain lieblichs buechlin zu lesen von dem hochgelerten meister Lucidarius.

Der do sagt von den wunderbaren Sachen der welt vnd des

hymmels. Strassburg, Mathys Hupfuff, 1499. 8vo, ff. [30]. 8

woodcuts.

KARMARSCH (KARL).

Geschichte der Technologie. München, 1872. 8vo, pp. vii. [1

blank] 932.

KERTZENMACHER (PETRUS).

Alchimia, Das ist, Alle Farben, Wasser, Olea, Salia, vnnnd Alvmina, ...

zubereyten. Franckfort, 1589. Small 8vo, ff. 79 [1]. Woodcuts

of apparatus.

Alchimia, Das ist, Alle Farben, Wasser, Olea, Salia vnd Alvmina, ...

zu bereyten. Franckfurt, 1613. Small 8vo, pp. 130 [4, 2 blank].

Rude woodcuts of apparatus.



Alchimia, Das ist Alle Farben, Wasser, Olea, Salia, und Alumina, ...  
zu bereiten. Without place, 1720. Small 8vo, pp. [2] 109 [3].

See RECHTER GEBRAUCH D'ALCHIMEI.

KUNCKEL (JOHANN).

Ars Vitraria Experimentalis. Franckfurt, 1679. 4to. pp. [16] 350,  
141 [35]. Portrait, engraved title, and 20 plates.

KUNST-BOECK. See ANDREE (SYMON).

KÜNSTBÜCHLIN. Augspurg, 1537. Small 4to, ff. xxxvii. [1].

KUNST-BÜCHLEIN, oder gründlicher Gebrauch von Etz-Arbeit. Franckfurt,  
1687. 12mo, pp. 203 [9, 4 blank].

LABARTE (JULES).

70 Handbook of the Arts of the Middle Ages and Renaissance, as applied  
to the decoration of Furniture, Arms, Jewels, &c., &c. Translated  
from the French. With Notes, &c. Copiously illustrated. London,  
1855. 8vo, pp. xxxvi. 443.

LANGLEY (THOMAS). See VERGILIO (POLYDORO).

LEMERY (LOUIS).

New Curiosities in Art and Nature: or, a collection of the most valuable  
secrets in all arts and sciences. London, 1711. 8vo, pp. [16]  
354 [14]. Frontispiece and 8 plates.

LEMNIUS (LEVINUS).

Les occvltres merveilles et secretz de Natvre.... Traduit ... par I. G. P.  
[Jacques Gohory, Parisien]. Orleans, 1568. 16mo, ff. [18] 250  
[20].

De Miracvlis Occvltis Natvræ, Libri IIII. Antverpiæ, 1581. 8vo,  
pp. [16] 582 [26].

De Miracvlis Occvltis Natvræ, Libri IIII. Francofvrti, 1604. Square  
16mo, pp. [16] 582 [55, 3 blank].

De Miracvlis Occvltis Natvræ, Libri IIII. Francofvrti, 1611. Square  
16mo, pp. [16] 582 [55, 3 blank].

The secret miracles of Nature: in four books. London, 1658. Small  
folio, pp. [16] 398.

LIEBAUT (JEAN).

Trois Livres de l'embellissement et ornement dv corps humain. Paris,  
1582. 8vo, pp. [16] 463 [1 blank, 14, 2 blank].

See GESNER (CONRAD).

LOCATELLI (LODOVICO).

Theatro d'Arcani. Milano, 1644. 8vo, pp. [34] 456 [24].

Theatro d'Arcani. Venetia, 1667. 8vo, pp. [16] 392 [22].

LULLIUS (RAYMUNDUS).

80 De secretis naturæ siue Quinta essentia libri duo. Venetijs, 1542.  
Small 8vo, pp. 324 [8].



- De Alchimia Opuscula... Item. De Secretis Natvrae, seu de Quinta essentia liber unus. Norimbergæ, 1546. Small 4to, ff. 113.
- De Secretis Natvrae, sev de Quinta essentia liber vnus. Coloniae, 1567. Small 8vo, pp. [8] 376.
- MAGIE DES ARTISTES (LA). Harlem, 1783. 12mo, pp. [4] xvij [1 blank] 214 [20].
- MANNI (DOMINICO MARIA).  
De Florentinis Inventis Commentarium. Ferrariae, 1731. 4to, pp. [8] 114 [5, 1 blank].
- MERCURIALIS (HIERONYMUS).  
De Decoratione Liber, ... Additi nunc primvm dvo Tractatus; alter, De varicibus; alter, de reficiendo naso. Francofvrdi, 1587. 8vo, pp. [8] 199.
- MEURDRAC (MARIA).  
Die mitleidende und leichte Chymie. Franckfurt, 1676. 12mo, pp. [8] 312 [19, 1 blank].  
La Chimica Caritatevole, e facile. In Venetia, 1682. 12mo, pp. 12, 256 [20].
- NAPIER (JAMES).  
Manufacturing Arts in Ancient Times. London, 1874. 8vo, pp. v. [3] 367.
- NERI (ANTONIO).  
De Arte Vitraria Libri Septem. Amstelodami, 1668. 12mo, pp. [28] 455 [17]. 6 folding plates.
- 90 Sieben Bücher: handlend von der künstlichen Glass- und Crystallen-Arbeit, ...Verdeutschet durch Friedrich Geisslern. Franckfurt, 1678. 8vo, pp. [32] 283 [5]; 184. 9 plates.  
De Arte Vitraria Libri VII. Amstelædami, 1686. 12mo, pp. [36] 440 [16]. 6 folding plates.
- NOLLIVS (HEINRICH).  
Natvrae Sanctvarivm. Francofvrti, 1619. 8vo, pp. 838 (for 858) [12, 2 blank].
- PANCIROLLO (GUIDO).  
Rerum Memorabilium [libri duo]. Francofurti, 1631. 4to, pp. [12] 349 [23]; [8] 313 [17, 2 blank]. Pars Prior, engraved title; Pars Posterior, printed title.  
Rerum Memorabilium [libri duo]. Francofurti, 1646. 4to, pp. [8] 349 [23]; 313 [17]. Pars I. engraved title only. Pars II. no title.  
Rerum Memorabilium [libri duo]. Francofurti, 1660. 4to, pp. [8] 349 [23]; 313 [17]. Pars I. engraved title only. Pars II. no title  
The History of many memorable things lost. London, 1715. 2 vo . 12mo, I. pp. [14] 1-242; II. [6] 265-452, [12]; advertisements pp. 16.



## PELIGOT (EUGENE).

Le Verre. Paris, 1877. 8vo, pp. [4] iii. [1 blank] 495.

## PLAT (HUGH).

The Jewell House of Art and Nature. London, 1594. Small 4to, pp. [16] 96 ; 60 ; 76.

The Jewel House of Art and Nature. London, 1653. Small 4to, pp. [8] 232.

100 A new, cheape, and delicate Fire of Cole-balles. London, 1603. Small 4to, ff. [15].

## PLATTES (GABRIEL).

A Discovery of Subterraneall Treasure. London, 1639. Small 4to, pp. [10] 60.

A Discovery of Subterranean Treasure. London, 1738. 12mo, pp. [18] 215 [1 blank] ; [4] 66.

PLEASANT AND COMPENDIOUS HISTORY (A) of the first inventers ... of the most famous arts ... in the whole world. London, 1686. 12mo, pp. [16] 159 (for 169) [5]

POLYDORO VERGILIO. *See* VERGILIO.

## POPPE (JOHANN HEINRICH MORITZ).

Geschichte der Technologie. Göttingen, 1807-11. 8vo. I. pp. viii. 506. II. pp. x. 628. III. pp. viii. 478 [2].

## PORTA (GIOVANNI BATTISTA).

Magiæ Natvralis Libri Viginti. Francof., 1591. 8vo, pp. [36] 669.

Magiæ Natvralis Libri Viginti. Hanoviæ, 1619. 8vo, pp. [31, 1 blank] 622.

Magiæ Naturalis Libri Viginti. Lugd. Bat., 1644. 12mo, pp. [16] 670 [23, 3 blank].

Natural Magick in Twenty Books. London, 1658. Small folio, pp. [8] 409 [1 blank, 6].

109 Magiæ Naturalis Libri Viginti. Amstelod., 1664. 12mo, pp. [16] 670 [22].

RECHTER GEBRAUCH d'Alchimei, mitt vil bissher verborgenen, ... Künsten. Without place and printer's name, 1531. Small 4to, ff. xxvii.

RECUEIL des plus beaux Secrets de Medecine, ... Comme aussi plusieurs Secrets curieux sur d'admirables effets de la Nature & de l'Art. Paris, 1695. 12mo, pp. 406 [24]. Frontispiece.

## ROLLIN (CHARLES).

The History of the Arts and Sciences of the Ancients. Glasgow, 1837. 8vo, pp. xxx. iii. [1 blank] 631.

## ROSS (ALEXANDER).

Arcana Microcosmi : or, the hid Secrets of Man's Body discovered ; in an Anatomical Duel between Aristotle and Galen concerning the Parts thereof. London, 1652. 8vo, pp. [16] 267 [9].



- SALMON (WILLIAM).**  
 Polygraphice. 8th edition. London, 1701. 8vo, pp. [32] 939. Portrait, engraved title, and 23 (?) plates.
- SARDI (ALESSANDRO).**  
 De rerum inventoribus, libri duo (with Vergil). Without place, 1604. 12mo. Colon. Agripp. 1626. 8vo.  
 Memoires et Histoire de l'origine invention, & auteurs des choses & sciences.... Par Gabriel Chapuis ... A Lyon, 1584. Small 8vo, pp. [6] 86.
- SAUZAY (A.)**  
 Marvels of Glass-making. London, 1870. 8vo, pp. xx. 272. Plates.
- SCHATZKAMMER rarer und neuer Curiositäten.** Hamburg, 1689. 8vo, pp. [8] 592 [24].
- SCHMUCK (MARTIN).**  
 Secretorum Naturalium, chymicorum, et medicorum Thesauriolus, oder Schatzkästlein. Schleusingen, 1637. Small 8vo, pp. 79 [1 blank]; [8] 103 [1 blank].
- 120 **Secretorum Naturalium ... Thesauriolus.** Nürnberg, 1652-3. Small 8vo, pp. 79 [1 blank]; [8] 103 [1 blank].
- Wohlängerichtetes Ærarivm Chymicvm.** Gotha, 1686. 12mo, pp. 198 [15, 3 blank].
- SCHOTT (CASPAR).**  
 Physica curiosa. Ed. alt. Herbipol. 1667. 4to, pp. [56] 1389 [23]. 61 Plates and Engraved Title.  
 Magia Universalis Naturæ et Artis. Bamberg. 4to.  
 1677 I. pp. [6] 538 [14] Title and 25 Plates.  
 1674 II. pp. [24] 432 [13] Title and 31 (32) Plates.  
 1677 III. pp. [22] 732 [12] Title and 21 Plates.  
 1677 IV. pp. [32] 670 [2] [15] Title and 13 Plates.  
 Ioco-Seriorum Naturæ et Artis Centuriæ tres. Without place, date (about 1661) and printer's name. 4to, pp. [12] 363. Title and 22 plates. By Aspasius Caramuelius, *Pseudonym*.
- SILBERMANN ( )**  
 Manuel métallotechnique, ou recueil de secrets et de curiosités sur les métaux & les minéraux, appliqués aux arts & aux métiers. Paris, 1773. 12mo, pp. [4] vj. 473 [2, 1 blank].
- SOMMAIRE de la Medecine Chimique ... Auec vn Recueil de diuers Secrets de Medecine.** Paris, 1632. 8vo, pp. [16] 433 [1 blank].
- THEOPHILUS.**  
 An Essay upon various Arts. London, 1847. 8vo, pp. [4] li. [1 blank] 447. 2 Illuminated facsimiles.  
 Schedules Diversarum Artium. Ed. Albert Ilg. 1 Theil. Wien, 1874. 8vo, pp. [4] xlvii. [3] 400.



## VANINI (GIULIO CESARE).

De admirandis Naturæ Reginæ Deæque Mortalium Arcanis Libri qvatvor. Lvtetiæ, 1616. 8vo, pp. [16] 495 [1].

## VERGILIO (POLYDORO)

130 De inventoribus rerum libri tres. Venetiis, Christophorus de Pensis, 1499. Small 4to, 88 leaves, not numbered.

De inuentoribus reru3 libri tres. Venetiis, Johannes de Cereto de Tridino, 1503. Small 4to, 81 leaves and 1 blank leaf, not numbered.

De inventoribus rerum libri tres. Argentoraci, Matthias Schürer, 1509. Small 4to, ff. [6] LXVI.

De inventoribus rerum (libri octo). Parisiis, Robertus Stephanus, 1528-29. Small 4to, ff. 141 [27].

De rervm inuentoribus libri octo. Basileæ, Michael Isingrinus, 1544. 8vo, pp. [56] 615 [1 blank].

De rervm inuentoribus libri octo. Basileæ, Isingrinus, 1546. 8vo, pp. [48] 524 (for 534).

An Abridgemēt of the notable worke of Polidore Vergile ... by Thomas Langley. London, Richarde Grafton, 25 Ianuarie, 1546. Small square 8vo, ff. [8] clvi. [11].

De l' origine e de gl' inventori de le leggi, costumi, scientie, arti. In Vinegia, Gabriel Giolito, 1550. Small 8vo, ff. 239 [5].

An abridgement of the notable worke of Polidore Vergile ... by Thomas Langley. London, R. Grafton. Mense Iulij, 1551. Small square 8vo, ff. [8] cxxxv (for cli). [7].

An abridgemente of the notable worke of Polidore Virgile. London, Jhon Tisdale. No date (about 1570). Small square 8vo, ff. [8] clii. [15].

140 De rervm inventoribvs libri octo. Without place. Iacobvs Stoer. 1604. 16mo, pp. [48] 675 [122, 3 blank]—126 [2].

De rervm inventoribvs libri octo. Colonisæ Agrippinæ, Bernard Gvalther, 1626. 8vo, pp. [32] 790 (for 780) [65, 1 blank].

De rervm inventoribvs libri viii. Lvgdvni Batavorvm, Franciscvs Hegervs, 1644. 12mo, pp. [40] 565 [1 blank]; [2] 209 [93, 2 blank].

De inventoribvs rerum libri viii. Amstelodami, Daniel Elzevirivs, 1671. 12mo, pp. [40] 511 [1 blank]; [6] 100 [92, 2 blank].

## VINCENT DE BEAUVAIS.

Speculum naturale. (Strassburg, Johann Mentellin, about 1473). Large folio, semi-goth. char., 2 cols., 66 lines. Vol. I, ff. [368]. Vol. II., ff. [327].

Speculum naturale. Without date, place, or printer's name. Large folio, goth. char., 2 cols. 67-69 lines, besides head-lines. Vol. I. ff. [318], of which 19 and 318 are blank. Vol. II. ff. [280]. 281 wanting?



## WECKER (JOHANN JAKOB).

- Kunstbuch ... von ... künstlichen Wassern. Basel, 1616. 8vo, pp. [6] 86 [4].
- De Secretis libri xvii. Basileæ, 1613. 8vo, pp. [15, 1 blank] 667 [27].
- De Secretis libri xvii. Basileæ, 1642. 8vo, pp. [15, 1 blank] 667 [27, 2 blank].
- De Secretis libri xvii. Basileæ, 1662. 8vo, pp. [15, 1 blank] 667 [27, 2 blank].
- 150 Les Secrets et Merveilles de Natvre. Roven, 1663. 8vo, pp. [15, 1 blank] 1012 [41, 1 blank].
- De Secretis libri xvii. Basileæ, 1701. 8vo, pp. [12], 764, [32, 4 blank].  
*See ALESSIO.*

## WEIDENFELD (JOHANN SEGER).

- De Secretis adeptorum libri iv. Londini, 1684. 4to, pp. [40] 338 [2].  
Four books concerning the secrets of the adepts. London, 1685.  
4to, pp. [52] 380.
- De Secretis adeptorum libri iv. Hamburgi, 1685. 12mo, pp. [48] 602 [10].
- De Secretis adeptorum libri iv. Lipsiæ, 1768. 8vo, pp. [48] 548 [12].

## WORCESTER (HENRY SOMERSET, MARQUIS OF).

- A Century of the Names and Scantlings of such Inventions, as at present I can call to mind to have tried and perfected. London, 1663. 12mo, pp. [20] 72 [2, blank, 9, 1 blank].
- A Century of the Names and Scantlings of such Inventions, ... Glasgow, R. & A. Foulis, 1767. 12mo, pp. xxvii. [1 blank] 76 [10].
- A Century of the Names and Scantlings of such Inventions, ... Glasgow, A. Duncan and R. Chapman, 1792. 12mo, pp. iv., xi. [1 blank] 40 [4].
- The Century of Inventions.... By Charles F. Partington. London, 1825. Small 8vo, pp. lxxxiv. 138. Woodcuts.
- 160 The Life, Times, and Scientific Labours of the second Marquis of Worcester. To which is added, a reprint of his Century of Inventions, 1663, with a Commentary thereon, by Henry Dircks. London, 1865. 8vo, pp. xxiv. 624. Frontispiece, portrait, plan, and illustrations in the text.











ACCOUNT OF A COPY OF THE FIRST EDITION OF THE  
*SPECULUM MAJUS* OF VINCENT DE BEAUVAIS, 1473.

SUPPLEMENT TO *NOTES ON BOOKS OF SECRETS*, PART II.

BY

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[*Read to the Archæological Society of Glasgow, Thursday, December 18, 1884.*]

On a former occasion,<sup>1</sup> and in connection with books on arts and inventions, I happened to refer to the work of Vincent de Beauvais as perhaps the most voluminous of the Middle Ages, and certainly one of the biggest printed before 1501, and I gave a brief account of copies of two different editions of the *Speculum Naturale*. At that time I was in possession of the *Speculum Historiale* also, and had consulted the descriptions by Van Praet<sup>2</sup> and Brunet,<sup>3</sup> but the question as to the date and printer of the volumes did not specially interest me until I completed the work by acquiring the remaining divisions—the *Speculum Doctrinale* and *Speculum Morale*.

It is unnecessary to say that in English there is absolutely nothing about this remarkable monument of fifteenth century art, except a notice in the catalogue of Kloss's library<sup>4</sup> sold by auction in 1835—fifty years ago—a catalogue that has long since disappeared.

The fullest collation I have seen is by Van Praet. It has been copied and condensed by Brunet, who, however, has not taken the trouble to check Van Praet's statements, and it is followed also by Graesse.<sup>5</sup> The descriptions by

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<sup>1</sup> *Transactions of the Archæological Society of Glasgow*, 1883, vol. II. p. 246.

<sup>2</sup> *Catalogue des Livres imprimés sur Vêlin*, Paris, 1822, T. IV. pp. 290-298.

<sup>3</sup> *Manuel*, Paris, 1864, T. V. col. 1253.

<sup>4</sup> *Catalogue of the Library of Dr. Kloss*, London, 1835, Nos. 3943-45.

<sup>5</sup> *Trésor de Livres Rares*, Dresden, 1867, VI. Sec. Part. p. 325.



other writers<sup>1</sup> are so vague, and are so defective in numerical data, that they are useless for real bibliographic purposes, however interesting they may be from other points of view. But especially as clearing away some of the confusion which has enveloped the subject ought to be mentioned the short tract of Desbarreaux-Bernard<sup>2</sup> on the first edition of the *Speculum Majus*. Indeed, it was owing to the perusal of his tract, and the detection of want of agreement between his account and my own copy, that I was led to examine the latter more attentively, apart altogether from its connection with books of secrets. Desbarreaux-Bernard enjoyed the advantage of being able to compare several copies of the so-called *editio princeps*, and he had thus the means of classifying their differences and of observing the relationship of the various issues. But his account, like those already quoted, is both defective in numerical data and erroneous. He, too, seems to have accepted Van Praet's numbers as correct, and he has thus helped to perpetuate very misleading blunders, besides introducing some inaccuracies of his own.

The consequence of such non-agreement among the different authorities is to make the description of a previously unknown copy of the first edition an absolute necessity. And here I cannot but regret that Hain did not live to

<sup>1</sup> Maittaire, *Annales Typographici*, Amstel. 1733, I. p. 324. He had seen only the *S. Naturale* and the *S. Historiale* with the colophon, and says that the first edition is of the rarest occurrence. De Bure (*Bibliographie Instructive*, Paris, 1768. *Histoire*, T. I. p. 247) speaks with uncertainty about it, and simply discusses opinions. Clément (*Bibliothèque Curieuse*, Göttingen, 1752, T. III. p. 77) has a long and very interesting account of the first edition, pointing out its beauty, value, and great rarity; but unfortunately he gives no collations, so that it is not possible to identify the different parts, though it is obvious that they were not all of one issue. The *S. Historiale* had Mentellin's colophon. Panzer (*Annales Typographici*, Norimbergae, 1793, I. p. 18) assigns all four parts to Mentellin, but without giving sufficient collations. In these works references to other authorities will be found.

<sup>2</sup> *Étude Bibliographique sur l'Édition du Speculum Quadruplex*. . . . Attribué à Jean Mentel. . . . Paris, 1872, 8vo, pp. 25, and 2 leaves of fac-similes. In spite of various inaccuracies and doubtful criticism, which I shall have to notice in the following, I think the author has proved his main thesis that three distinct editions rank under the *editio princeps*. I am not so sure about the proportion he assigns to Mentellin.



complete his *Repertorium*, and give us an exact description of the different editions of Vincent's encyclopædia.<sup>1</sup>

There is very little known about the author. He was born, it is supposed, about 1184-1194, and died in 1264. He was thus the senior contemporary of Albertus Magnus, Thomas Aquinas, and Roger Bacon. The title Bellovacensis, Belvacensis, de Beauvais, indicates a connection of some kind with the town or district of Beauvais, but what that connection was—whether of birth or residence, is not certain. He joined the Dominicans, and about 1228 he was summoned to the Court of Louis IX, acted as *reader*, and may have superintended the education of the king's sons, but his life seems to have been one of unbroken study. The *Speculum Majus* is not his only work. He wrote several others, which were quite enough to fill a large folio volume, printed by Amerbach at Basil in 1481. In the course of his labours he seems to have read and made excerpts from every book he could lay hands upon. Probably this mode of study, begun at first from mere love of reading, awakened in his mind the idea of an encyclopædia which should embrace all that was best in literature up to his time. A similar idea seems to have occurred to the king, and from him Vincent got ample facilities by money and books for carrying it into execution. Ultimately, he wrote out his compilation, but it is said that, finding it too long, he condensed and re-wrote it—an almost incredible undertaking. When his labour is considered, it is difficult to see how he got through such an enormous amount. He must have been one of those rare men endowed with a powerful memory, a calm temperament, never-failing perseverance, and the spirit of order and method.

It does not fall within my plan, as it would certainly be beyond the limit of a paper like the present, to give even the barest notion of the contents

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<sup>1</sup> A most elaborate dissertation on the life and writings of Vincent, with full references to the previous literature, was written by Daunou, and was printed in the *Histoire Littéraire de la France*, Paris, 1835, T. XVIII. pp. 449-519. A separate work was published by Abbé Bourgeat: *Études sur Vincent de Beauvais*, Paris, 1856. One of the very earliest notices is by Guglielmo da Pastrengo, who flourished in the following century, and composed a work which will be considered in the next communication to the Society: *Notes on Books of Secrets*, Part III. This writer is not quoted by Daunou.



of the work.<sup>1</sup> It is the result of the perusal of a vast number of books, and much of its value for the present time turns upon the fact that it contains extracts from books which are no longer in existence, or have disappeared into libraries where they are unknown.

It is divided into three parts called *Specula—Mirrors*, viz.: *Speculum Naturale*, *Speculum Doctrinale*, *Speculum Historiale*. To them is added a fourth: *Speculum Morale*, which bears Vincent's name, although it is probably not by him.<sup>2</sup> Into that question it is needless to enter here. For bibliographic purposes it must be included, for whether genuine or not, or contemporary in authorship or not, it forms part of the *editio princeps*.

Two hundred years after it was composed, the book was printed. It is difficult to say exactly how many volumes it fills, for that depends on the way the sections are arranged, but, taking these as they occur, it may be divided as follows:

Speculum Naturale,	3 volumes.
„ Doctrinale,	1 volume.
„ Historiale,	4 volumes.
„ Morale,	3 volumes.

This makes ten volumes in all, but, as I have it, it is bound in six volumes. Mentel<sup>3</sup> says it is in ten; Van Praet says it is in eight; De Bure enters into an argument to prove that it was in ten; Graesse says it is in seven, but may be arranged in nine. The number is of no real importance.

The first edition of this great work is usually said to have been printed at Strassburg by Johann Mentellin in 1473-76. The reason why it is assigned to him is that his name is found appended both to the *Speculum Historiale* and to a copy of the *Speculum Morale*, and the dates above-mentioned are also found in these sections respectively. The assumption is then made that the other sections which have no name and date were also printed by Mentellin

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<sup>1</sup> Details are to be got in Quétif and Échard's *Scriptores Ordinis Prædicatorum*, Lutet. Paris. 1719, I. p. 212, and in Daunou's essay already referred to.

<sup>2</sup> Quétif and Échard examined this point, and decided against the authenticity of the *S. Morale*.

<sup>3</sup> *De Vera Typographiæ Origine Parænesis*, Paris. 1650, p. 78.