XXXIX. History of the art of dyeing, from the earliest ages

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To cite this article: J.N. Bischoff (1801) XXXIX. History of the art of dyeing, from the earliest ages, Philosophical Magazine Series 1, 9:36, 302-315, DOI: [10.1080/14786440108562704](https://doi.org/10.1080/14786440108562704)

To link to this article: <http://dx.doi.org/10.1080/14786440108562704>

Published online: 25 Jan 2010.

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3. It has every advantage which may be attributed to Boulton and Watt's engines, by condensing out of the receiver, either in the penstock or at the level of the water.

4. Another very great advantage is, that the water in the upper part of the pipe adjoining the receiver acquires a heat, by its being in frequent contact with the steam, very nearly equal to that of boiling water; hence the receiver is always kept uniformly hot, as in the case of Boulton and Watt's engines.

5. A very small stream of water is sufficient to supply this engine, (even where there is no fall,) for all the water raised by it is returned into the reservoir HHH.

From the foregoing reasons it manifestly appears, that no kind of steam-engine is so well adapted to give rotatory motion to machinery of every kind as this. Its form is simple, and the materials of which it is composed are cheap; the power is more than equal to any other machine of the kind, because there is no deduction to be made for friction, except on account of turning the cocks, which is but trifling.

Its great utility is therefore evident in supplying water for every kind of work performed by a water-wheel, such as grist-mills, saw-mills, blast-furnaces, forges, &c.

XXXIX. *History of the Art of Dyeing, from the earliest Ages,*
By J. N. BISCHOFF.

[Concluded from Page 217.]

IF the history of dyeing in the former period appears imperfect and deficient, it will be found still more so in the present one, which contains an account of the state of it in the west after the fifth century. And, indeed, it needs excite no wonder if great silence prevails respecting an art at that time so little valued, as we are left in much uncertainty in regard to many other things of great importance. This much, however, we know, that during the general banishment of the sciences, arts, and manufactures from the west, in consequence of the incursions incessantly made by multitudes of barbarians and warlike nations, that of dyeing was among

among the number. It cannot, however, be denied that there occur traces of this art being practised in some of the Italian monasteries and other places. But the articles dyed were of little importance, being chiefly brown or black linen, or skins, so that the art in this state scarcely deserves the name of dyeing.

Of this art Muratori gives only one instance in the eighth century from an old manuscript preserved in a monastery*, which, on account of the barbarous Latin in which it is written, and the illegible passages in it, is scarcely intelligible. This, however, is sufficient to give us an idea of the state of dyeing in the west at that period; but, if more should be thought necessary, I have no doubt that there are documents in old monasteries to satisfy the curiosity of those who wish for further information on the subject.

It is certain, indeed, that the art of giving cloth and other articles a beautiful dye, had disappeared from the west in the fifth century, and was to be found only in the east†. But even there little attention was paid to improvement and new discoveries, as dyers were satisfied with those colours which had been long usual, and which, in a great measure, have been already described.

The Greeks and Saracens were for a long time the exclusive possessors of this art, and furnished the west with dyed stuffs, and particularly purple, which, according to the account of the female Greek writer mentioned in the former part of this paper, was prepared there of a beautiful colour in the 11th century. The public taste, however, was at length changed, and people began to set as great value on the scarlet then dyed as upon purple, and at length to prefer it; and on this account, in the 12th century, the art of dyeing purple in the east was entirely forgotten‡.

* Muratori Dissertat. de Artibus Italicis. post Inclinationem Romani Imperii; in his Antiquitat. Italic. vol. ii. diss. 24. p. 367.

† It is not improbable, therefore, that Attila brought with him that purple cloth with which his throne, according to an old poet, was hung round during a great festival. See the *Deutsches Museum* for Jan. 1780, p. 69.

‡ Muratori Dissertat. de Textrina et Vestibus Sæculorum Rudium; in vol. ii. Antiquitat. Ital. diss. 25, p. 415.

Though,

Though, in consequence of the crusades in the 11th and following centuries, this art began to be revived in the west, as the Christian princes who went on these expeditions brought back with them a great many Greek artists, dyeing had been so little improved, that, according to the testimony of an old English poet, Gualfred de Winefauf, who wrote a satire about the year 1202, the Romans at that period obtained their scarlet from Greece*. Soon after, however, the Italians, and particularly the Venetians, made considerable progress in this art: for, as the crusaders were conveyed to the Holy Land and brought back from it chiefly in Italian ships, the Italians had the best opportunities either of learning the art of dyeing beautiful colours themselves, or of carrying back expert dyers, whom they must have found very necessary to their manufactures, which were then beginning to increase†. About this period, therefore, we find here and there traces of new dye-materials, or, at least, materials not before mentioned. Thus, a charter of the year 1194, which is a contract between the inhabitants of Bologna and those of Ferrara respecting certain duties, speaks of Brazil grains (*grana de Brasile*) and of indigo as articles which were obliged to pay duty at Bologna‡.

In regard to the indigo here mentioned, I can hardly believe that we are to understand by it our dye-stuff of the same name; as a more modern writer, Plictho, whom I shall mention hereafter, was unacquainted with our indigo. It is much more probable that what is here meant is the substance which occurs in Pliny under the name of *indicum*, and which was merely a paint§. In the like manner, a paint was known in Germany called *endich* before real indigo was known; which, as we are told by Crolach in his description

* Muratori ut supra.

† So early as the year 1338 there were in Florence 200 cloth manufactories, which manufactured annually from 70 to 80,000 pieces of cloth, valued at 1,200,000 florins.—See *Della Decima*, tom. ii. p. 3. sez. 4. c. 9.

‡ Muratori Dissert. de Mercatibus et Mercatura Sæculorum Rudium, tom. ii. Antiquitat. diff. 30. p. 898.

§ Plin. lib. xxxv. cap. 6. He describes this colour as a scum which adhered to certain reeds.

of woad, taken from an old author, was made of what the dyers at present call the flower of the woad.

But the Brasilian grains and Brasilian wood are mentioned in more old charters, as, for example, of the years 1198 and 1306, under the name of *braxilis*. This wood, therefore, may have not taken its name from the country called Brasil; but the latter rather got its name from the wood, which was found there in abundance, and in the language of the country was called *ibirapitanga*. In my opinion the name *brasilis* comes from *bragia*, in French *braise*, a burning coal, which it may have obtained both from its colour and its having the property of communicating it to others. But, as I shall have an opportunity hereafter of enlarging further on this dye-stuff, I shall proceed to another discovery of that period, made by a Florentine, *viz.* that of dyeing by orchilla-weed.

A Florentine merchant, who about the year 1300 traded in the Levant, happening to make water on a rock, observed that the green colour of the moss which grew on it, and on which the urine accidentally fell, was changed to a beautiful blueish colour. Reflecting a little further on this circumstance, he found, after several experiments, that when mixed with urine and other things it communicated to cloth a columbine colour. This process he long kept as a secret, and acquired by it a great deal of money. The invention at that period was so profitable to the Florentines, and excited so much wonder, that the family of the inventor, which still exists in Italy, were called Rucellai, from the name of the moss, which in Spanish is distinguished by the appellation of *orciglia*, and the dye made from it is called orchilla*.

After this period the manufactures in Italy increased so that the attention of the different governments was particularly directed to the art of dyeing. In the year 1429 there were published at Venice some regulations respecting dyeing (*Mariegala dell' Arte dei Tintori*), in which certain precepts were given for dyeing, and according to which dyers were to exercise their art†. These regulations were renewed in the year 1510, with a great many improvements. One John

* Domenico Manni Commentar. de Florentinorum Inventis, c. 20.

† Zanon Lettere dell' Agricoltura, &c. tom. iii. p. 2. lett. 6.

Ventura Rosetti, however, finding these precepts too imperfect, made a tour, at considerable expense, through Italy and other countries to procure information respecting the art of dyeing, and on his return wrote, under the assumed name of Plietho, a book on it; the first, perhaps, that ever appeared on this subject, and which undoubtedly laid the first foundation for the improvement in this art which afterwards took place*.

The title of this work, exceedingly scarce even in Italy, an original edition of which is preserved in the royal library at Göttingen, is as follows:—Plietho's Art of Dyeing; which teaches how to give to Cloth, Linen, Cotton, and Silk, real and beautiful as well as false and common Dyes. *Venice* 1548. 4to.† The whole work is divided into three sections; the first of which treats on the dyeing of wool, linen, cotton, chintz, &c. the second on the dyeing of silk, and the third on the dyeing of skins.

However difficult it may have been at that time to write upon this art, Plietho, in the preface to his book, where he speaks of the period in which he lived with a candour peculiar to himself, says: "I will therefore, dear reader, no longer keep back these three works. I have exerted myself with all my powers by day and by night for months and years, with danger and loss, at the expense of much hard labour, and as far as my poor circumstances would permit, to improve this important art, for sixteen years past, and with God's help to bring it to a proper state."—This author was not acquainted either with indigo or cochineal; but he speaks of brasil wood, which he calls *verzino*, a name still given to

* Beckmann's Technology, p. 60.

† The Italian title is, Plietho de l'arte de Tentori, che insegna Tenger Panni, Telle, Banbasi et Sede, si per l'arte maggiore come per la commune. *Venezia* 1548. 4to. The real name of the author, as I have already observed, was John Ventura Rosetti; he was overseer of the arsenal of Venice, as he gives us to understand himself in the end of his book. This work has been translated into French under the following title: Suite du Teinturier parfait, ou l'Art de Teindre les Laines, Soyes, Fils, Peaux, Poils, Plumes, &c. comme il se pratique à Venize, Genes, Florence, et dans tout le Levant; et la Maniere de passer en Chamois toute Sorte de Peaux, traduite de l'Italien. *Paris* 1716.

it in Italy, and from which the word *brasilis*, as appears, has been derived. Though Hellot and others despise this work as a wretched collection of recipes, we cannot deny the author the merit of having first opened the way to improve the art of dyeing; of having brought it into high reputation; and, in particular, of having excited towards it the attention of foreign nations.

For about two hundred years before, the Italians, and particularly the Venetians, had a monopoly of dyeing, and procured large sums by it from neighbouring nations, who made no exertions to practise the art themselves; for statesmen and men of letters did not think it worth their while to give themselves any trouble about it, and from dyers no change whatever was to be expected. But Plietho was the first who exhibited this art in its full lustre, and excited the French, English; and Germans, to apply in earnest, in their different countries, to the improving so useful and extensive a branch of manufacture.

In France some progress towards this object had been already made. One Giles Gobelin, who had learned from a German the art of dyeing scarlet, endeavoured to establish it in that country, and for this purpose erected a dye-house, in the suburbs of Paris, on a small stream called the *Bievre*, the water of which was found peculiarly favourable to that colour. This undertaking was at first considered to be a work of so much difficulty that no one believed he would be able to complete it, and for that reason this dye-house was called *La Folie Gobelin*, that is, Gobelin's Folly*.

Gobelin, however, continued his business, and scarlet dyed after his manner is still called Gobelin's scarlet, and a building in which tapestry is now made is still distinguished by his name†. But dyeing in general continued in a very imperfect state

* See *Histoire de l'Academie Royale des Sciences de Berlin* for 1767, p. 67.

† People at that time were so ignorant in matters of this kind that they could not believe that Gobelin performed what he did without supernatural assistance. They invented, therefore, the following story:—Gobelin is said to have entered into a compact with the devil, who was to teach him the art of dyeing scarlet; and, having learned it, he gained by it a great deal of money. When the term of the compact, however, was

state till Colbert, the great minister of Louis XIV. in the year 1669, undertook to pay attention to its improvement. With this view he examined the establishment and defects of the French dyeing, and a M. d'Albo, at his desire, composed a set of regulations respecting dyeing, which were printed and published at Paris in the years 1669 and 1672*.

The introduction to this book contains a proof of Colbert's mode of thinking in regard to this art:—"If the silk, woollen, and linen manufactures," says he, "are those which contribute most to the support and advancement of trade and commerce, dyeing, which supplies that variety of colours by which the most beautiful things in nature are imitated and represented, may be considered as the soul of it, without which the body would be animated only by feeble life. Wool and silk in their natural colours, formerly raw articles of little value, now find sale in the country, when they have received from dyeing those attractions which render them valuable and agreeable to the most savage nations."

The treatise itself is divided into twelve chapters: the first treats on the five principal colours, and the preparation of the articles before they are dyed; the second, of the application of the dye-stuffs; the third, of the different shades of the above

nearly terminated, as Gobelin was passing through the court-yard with a light in his hand, the devil came to fetch him away. Gobelin begged for a respite, but the evil spirit would not grant it. Gobelin at last requested that the devil would wait till the bit of candle in his hand was burnt out. This being granted, Gobelin immediately threw it into a well and pushed the devil in after it. The devil thus outwitted was exceedingly angry; but Gobelin had time to get a guard of ecclesiastics, who secured him from similar attacks in future.—See *Zanon* as above, sixth book, third letter.

* The title is: *Instruction générale pour la Teinture des Laines et Manufactures de Laine de toutes Couleurs, et pour la Culture des Drogues ou Ingrédients qu'on y employe*: à Paris 1672. 12mo. This work was reprinted in the last century under the following title: *Le Teinturier parfait: ou Instruction nouvelle et générale pour la Teinture des Laines et Manufacture de Laine de toutes Couleurs, et pour la Culture des Drogues ou Ingrédients qu'on y employe*: à Leyde, chez Theod. Haack, 1708. 8vo. The last edition appeared in 1726 in two parts. There is also a German edition by Paul James Marperger, with the title *Ars Tinctoria fundamentalis*. Respecting this book see *Mémoires concernant les Arts et les Sciences* for the year 1673; and the *Leipz. Sammlungen*, vol. iii. for 1746, p. 1013.

colours;

colours; the fourth, of compound colours; the fifth, of the division of colours into fine colours (*teinturiers en bon teint*) and common colours (*teinturiers en petit teint* *); the sixth, of the dyers' marks, with which they mark the articles they dye in both the above ways; the seventh contains a catalogue of the dye-stuffs permitted to be used for dyeing the fine and common colours; the eighth gives an account of the reasons why certain kinds of dye-stuffs are prohibited; the ninth treats entirely on dyeing black; the tenth, of the ground and bath proper for each colour; the eleventh treats on the dyeing of linen and hats; and the twelfth recommends the use and cultivation of indigenous dye-stuffs, a list of which is given.

That these regulations might be properly observed, certain inspectors and commissioners were not only appointed to visit the dye-houses and repositories of the merchants, but orders were afterwards given to a member of the Academy of Sciences to make experiments for improving and beautifying different dyes, and to lay the result of his discoveries before the academy, which were afterwards to be published for the practical use of dyers.

The great advantage of this establishment may be easily conceived from the preference given to the French dyes; and the works which Du Fay, Hellot, and others, have written on this subject, and with which every dyer ought to be acquainted.

About this time the dye-stuffs brought to Europe from the newly discovered countries, but especially indigo and cochineal, began to be employed with great advantage. The Netherlanders, in particular, endeavoured, by means of these new dye-stuffs, to discover more durable and livelier colours; for though they had begun, almost at the same time as the Italians, to apply to the art of dyeing with great zeal, and to take advantage of the troubles in the East, they had never been so fortunate, notwithstanding all their exertions, as to make any great progress in it.

* This division was made in the earliest periods in Italy as well as in France, as proved by a French ordinance of Nov. 17, 1383; but it had not been so strictly observed till Colbert found it necessary to define it more accurately.

At last a Flemish painter named Peter Kloeck, who, during his long travels in various parts of the East, had learned the art of giving the most beautiful colours to silk and woollen stuffs, as well as that of dyeing scarlet, which he acquired from the German inventor whom I shall mention hereafter; returned to his own country *, excited as much attention by his method as Gobelin did at Paris, soon brought dyeing into repute, and continued to practise his art till 1550, when he died †.

After that epoch this art was exercised by the Flemings with so much zeal, that the Netherlands afterwards supplied not only France, but even England and Germany, with experienced dyers.

Dyeing seems to have been practised also in England at a very early period, for in the 14th century Edward III. brought a great many dyers from Flanders ‡. Under Edward IV. dyers were so numerous in London, that in the year 1472 they were established into a particular company, which at present forms one of the ninety-two incorporated companies, and holds the thirteenth rank: this company has its own arms, and its hall on Dowgate-hill §.

After the discovery of America the new dye-stuffs began to be used also in England; but here people were at first so mistrustful of them, that under queen Elizabeth dyeing with indigo was not only limited, but the use of logwood was entirely prohibited, and it was burnt wherever it was found ||. This prohibition was afterwards repeated, but it was annulled under Charles II. in 1661. ¶

* Beckmann's *Technology*, p. 64.

† *Mem. de l'Acad. de Berlin*, 1767, p. 92.

‡ Rymer's *Æta publica*, tom. ii. p. iii. p. 68.

§ Noorthouck's *New History of London*, vol. ii. p. 601.

|| The Statutes at large. Statute 23 Eliz. c. 9; an act for abolishing of certain deceitful stuff used in dyeing of cloth, &c.

¶ Statutes of Charles II. 13. c. 11. Frauds and abuses in his majesty's customs prevented and regulated. Under this head the following passage occurs:—"As it has now been found that our dyers, by diligence and dexterity, have made such progress as to be able to dye with logwood as good and durable colours as with other kinds of wood, the use of this wood is in future permitted."

But,

But, notwithstanding the attention hitherto paid to dyeing by government, it still remained in a languishing state till the year 1643, when a German named Keppler first brought to England his new-invented method of dyeing scarlet; and because he established a dye-house at the village of Bow, the scarlet he dyed was called the *Bow dye* *. At length a Fleming named Brauer, who in 1667 went to England with his whole family, brought the dyeing of woollen there, in general, to that degree of perfection at which it has been since maintained by the English †. Men of letters in England now began to turn their attention to this art, and we find a treatise on dyeing published in 1667 ‡, which was soon followed by others of the same kind.

As a distinction had always been made in Italy, France, and the Netherlands, between fine and common dyers, the case appears to have been the same in England from the earliest periods; so that blue, red, and yellow, belonged exclusively to the fine dyers; but both the fine and common dyers were allowed to dye brown, fawn colour, and black §.

Since the art of dyeing, as we have already seen, could not be revived in Italy, France, and the Netherlands, from its long state of depression to which it had been subjected in the fifth century, it will not appear surprising that the Germans, who during the middle ages paid very little attention to manufactures, should begin to apply later than other nations to this art, which is always an attendant of manufactures. All the beautiful, lively, and high colours, which are mentioned by the German writers of that period, were procured from the Italians, as these had procured them from the Greeks.

It is probable that the Germans had dyers of their own for black and brown colours, as the former was their gala colour or colour of honour, and the latter the common colour of the monks and other people, both of which required

* Anderson's History of Commerce, vol. ii. p. 7.

† Anderson's History of Commerce, vol. ii. p. 132.

‡ William Petty's Apparatus to the History of the Common Practices of Dyeing, in Sprat's History of the Royal Society of London, p. 284.

§ Chambers's Dictionary of Arts, under the head Dyeing.

no foreign dye-stuffs or expensive preparation. But this scarcely deserved the name of dyeing, and extended at most to linen or coarse woollen stuffs, and even to these the dyers could not communicate fast and durable colours.

As the number of those who prepared these colours afterwards increased, the first dyers were under the necessity of forming themselves into a company to secure themselves and their occupation from the encroachment of foreigners; and this was the origin of that company known in Germany at present under the name of *black dyers*; but whether this society was formed under Henry I. in the year 925, as the chancellor Von Ludewig asserts*, cannot be with certainty determined. With the above two colours the Germans were long satisfied, till at length, in the 12th century, a great many artists and manufacturers took shelter in Germany in consequence of Milan being over-run by the emperor Frederic I. and by the crusades the Germans in the East became more and more acquainted with the woollen manufactories, which they afterwards brought back with them into their own country †.

These circumstances, and the encouragement given to the German navigation and trade with foreign nations ‡ by the Rhinish and Hanseatic league in the 13th century, encouraged the Germans not only to apply with more ardour to their home manufactures, but rendered it necessary for them to obtain better dyers and dye-stuffs, that their manufactures might find a good sale in foreign markets. They endeavoured, therefore, to procure from Italy and the Netherlands, where the art of dyeing, as is well known, had been much cultivated, expert workmen §, who, from the woad which they chiefly employed for dyeing blue and green colours, were called *woad dyers* and also *cloth dyers* ||, because they dyed
only

* Ludewig Dissert. de Re Bavarica Tinct. p. 11.

† See Pütter's *Deutsche Reichsgeschichte*, § 107. III. p. 257.

‡ Ibid § 118. v. 291.

§ Ludewig *ut supra*, p. 12. Schreber's *Abhand vom Waid*, part 5. § 3. Zink's *Manufaktur und Handwerks Lexicon*, under the word Dyer.

|| The appellation *woad dyer* occurs in a charter of the year 1339. Zink, therefore, is wrong when he says that woad was not used till a late period,
and

only good cloths. They were called likewise *Rhenish dyers*, either because the Rhenish league encouraged cloths of beautiful colours, or because a great many dyers from Rhineland had settled in other provinces of Germany.

The above league, however, endeavoured to encourage dyeing in Germany, not only by promoting trade and procuring expert dyers, but also by various laws and regulations. Thus we find, besides others, an ordinance of the Hanse towns, written at Lubec, in Latin, in the year 1418, the sixth section of which contains the following passage;—"No merchant shall purchase undyed cloth in any town and dye it in another; but the cloth shall be dyed in the place where it is bought, under the penalty of forfeiting the cloth and the dye-stuffs *."

After this period we find two kinds of dyers in Germany, *viz.* the before-mentioned *cloth, wood, or Rhenish dyers*, and the old *black or ordinary dyers*. The former endeavoured chiefly to improve their art by new inventions, as was the case in the 16th century, when a fine dyer, whom some call Küster, others Küffler, some Kepfler, and the Dutch Drebel, found out, by means of a solution of tin, the art of dyeing the new scarlet colour †. From this dyer the before-mentioned German painter, Kloeck or Glück, learned the art; and Gobelin having been taught it by the latter, it was soon made known over a great part of Europe. Besides, the Germans now began to establish silk manufactories; and as silk required a particular method of dyeing, there arose a new kind of dyers called *silk-dyers*, of whom mention is made in the laws of the empire in the 16th century ‡.

At last dye-stuffs, before unknown, from the newly-discovered countries, or at least such as were rare and expensive, and that, therefore, the black dyers, by way of ridicule, called the *fine dyers wood dyers*.—See *Groffer Analecta Fastor. Zittaviensium*, p. iv. c. 4. p. 168. § 10. The name *cloth dyer* occurs frequently in the laws of the empire. For example, in those of the year 1577, under the head Purchasing of Woollen Cloth, § 21. also 3.

* Pütter's *Reichsgeschichte*, § 145. iv. not. 10.

† Hellot on Dyeing, p. 276; Beckmann's *Technology*, p. 64. The ancients had a scarlet colour which they dyed with the *coccum kermes*.

‡ See *Reich's Absch. zu Regensburg* for the year 1594.

being imported into Europe, were much employed by the German, Italian, and French dyers. By these productions they were enabled to prepare dyes much more beautiful and at less expence than they had ever been able by means of the dye-stuffs before known.

As the Germans did not obtain these new dye-stuffs so early, and were not yet acquainted with the art of treating them, the Flemish and French dyers came to Germany in great numbers, and united themselves to the German cloth and woad dyers, under the name of the *art*, *woad*, and *fine dyers* *.

Thus, in the middle of the 16th century, a Fleming, named John Nicolaus Schmidt, established a house for fine dyeing at Gera †. But on this occasion the jealousy and envy of the black dyers, who had hitherto been secret enemies to the woad dyers, were displayed in their full force. They not only persecuted with all their might the new strangers, but they endeavoured to make the new dye materials, which the fine dyers particularly used, to appear to the different princes contemptible and pernicious; especially as they were already disagreeable to financiers, because they lessened the consumption of indigenous productions, and especially of woad. The elector of Saxony ‡ and duke Ernest the Pious §, therefore, not only issued severe prohibitions against indigo; but it was made a subject of discussion at the diet, where it was described as a pernicious eating devil and corrosive dye-stuff ||.

The use of these ingredients, however, had become so prevalent, and their superiority to the indigenous was too evident to admit of their being entirely banished. On the other hand, the division into fine and common dyers, to which the French and Dutch dyers were already accustomed, was more firmly established; and both kinds distinguished themselves by their greater or less dexterity; by the dye-stuffs they em-

* Hence arose, no doubt, the connection which still subsists between the German fine dyers and the French, English, and German dyers, as the black dyers cannot go beyond the boundaries of Germany.

† Ludewig *ut supra*, p. 1.

‡ *Codex Augustæus*, part i. p. 236, 1521, 1547.

§ Gothaische Landesordnung, p. 2.

|| R. Pol. O. zu Frankf. 1577. tit. 21. § 3.

ployed;

ployed; the instruments they used; their fellowship; and, in the last place, by the objects to which their attention was chiefly directed.

The black and common dyers, particularly in Saxony, learned the art of communicating good dyes to linen or linsey-woolsey, and assumed the title of *black* and *fine dyers*, by which they endeavoured to distinguish themselves from the *common linen dyers*, as they were then called. They were, however, established into one company with the black and fine dyers by an ordinance of the elector of Saxony, dated May 24th 1595, and divided into three principal branches, *viz.* those of Leipzig, Dresden, and Zwickaw*; and this union chancellor Von Ludewig considers, improperly, as the union of the *art dyers* with the *black dyers*†. Such is the state of dyeing at present in Germany, and of the establishment of the dyers.

XL. *A Biographical Sketch of Count RUMFORD.*

SIR BENJAMIN THOMPSON, Count of Rumford, a native of America, was born in the town of Rumford, in the province of Massachusetts. In the American war he raised a regiment of dragoons, and signalised himself on different occasions in the service of the mother country. In February 1784 he received from his Majesty the honour of knighthood; and in the same year, with his sovereign's permission, engaged in the service of his Serene Highness the Elector of Bavaria.

In that electorate his services were of the most active and useful kind; for, in addition to the duties of his military profession, he devoted himself to the amelioration of the condition of the vagrant poor: a Herculean labour, of which no one can form an adequate idea without perusing the account since published by the Count, and yet managed with so much address as to conciliate the good wishes of even the

* Schreber Beschreibung des Waidts, part 5. § 3.

† Ludewig *ut supra*. This perhaps may have induced Von Justi, in his *Policewissenschaft*, vol. i. book 5. p. 20. div. 3. § 583. to make the same assertion.