1.opero allor [?] bo [alloro?] = "ou bien de [laurier]."

6. fregalo bene con un panno. He reads pane for panno and renders it. "Frotte le bien avec un pain de facon [jusqu'a ce] qu'il" etc.

7. colla stecca po laua. He reads "polacca" = "avec le couteau de bois [?] polonais [?]."]

The preparation of oils (629--634).

629.

OIL.

Make some oil of mustard seed; and if you wish to make it with greater ease mix the ground seeds with linseed oil and put it all under the press.

630.

TO REMOVE THE SMELL OF OIL.

Take the rank oil and put ten pints into a jar and make a mark on the jar at the height of the oil; then add to it a pint of vinegar and make it boil till the oil has sunk to the level of the mark and

thus you will be certain that the oil is returned to its original quantity and the vinegar will have gone off in vapour, carrying with it the evil smell; and I believe you may do the same with nut oil or any other oil that smells badly.

631.

Since walnuts are enveloped in a thin rind, which partakes of the nature of ..., if you do not remove it when you make the oil from them, this skin tinges the oil, and when you work with it this skin separates from the oil and rises to the surface of the painting, and this is what makes it change.

632.

TO RESTORE OIL COLOURS THAT HAVE BECOME DRY.

If you want to restore oil colours that have become dry keep them soaking in soft soap for a night and, with your finger, mix them up with the soft soap; then pour them into a cup and wash them with water, and in this way you can restore colours that have got dry. But take care that each colour has its own vessel to itself adding the colour by degrees as you restore it and mind that they are thoroughly softened, and when you wish to use them for tempera wash them five and six times with spring water, and leave them to settle; if the soft soap should be thick with any of the colours pass it

through a filter. [Footnote: The same remark applies to these sections as to No. 618 and 619.]

633.

OIL.

Mustard seed pounded with linseed oil.

634.

... outside the bowl 2 fingers lower than the level of the oil, and pass it into the neck of a bottle and let it stand and thus all the oil will separate from this milky liquid; it will enter the bottle and be as clear as crystal; and grind your colours with this, and every coarse or viscid part will remain in the liquid. You must know that all the oils that have been created in seads or fruits are quite clear by nature, and the yellow colour you see in them only comes of your not knowing how to draw it out. Fire or heat by its nature has the power to make them acquire colour. See for example the exudation or gums of trees which partake of the nature of rosin; in a short time they harden because there is more heat in them than in oil; and after some time they acquire a certain yellow hue tending to black. But oil, not having so much heat does not do so; although it hardens to some extent into sediment it becomes finer. The change in oil which occurs in painting proceeds from a certain

fungus of the nature of a husk which exists in the skin which covers the nut, and this being crushed along with the nuts and being of a nature much resembling oil mixes with it; it is of so subtle a nature that it combines with all colours and then comes to the surface, and this it is which makes them change. And if you want the oil to be good and not to thicken, put into it a little camphor melted over a slow fire and mix it well with the oil and it will never harden.

[Footnote: The same remark applies to these sections as to No. 618 and 619.]

On varnishes [or powders] (635-637).

635.

VARNISH [OR POWDER].

Take cypress [oil] and distil it and have a large pitcher, and put in the extract with so much water as may make it appear like amber, and cover it tightly so that none may evaporate. And when it is dissolved you may add in your pitcher as much of the said solution, as shall make it liquid to your taste. And you must know that amber is the gum of the cypress-tree.

VARNISH [OR POWDER].

And since varnish [powder] is the resin of juniper, if you distil juniper you can dissolve the said varnish [powder] in the essence, as explained above.

636.

VARNISH [OR POWDER].

Notch a juniper tree and give it water at the roots, mix the liquor which exudes with nut-oil and you will have a perfect varnish [powder], made like amber varnish [powder], fine and of the best quality make it in May or April.

637.

VARNISH [OR POWDER].

Mercury with Jupiter and Venus,--a paste made of these must be corrected by the mould (?) continuously, until Mercury separates itself entirely from Jupiter and Venus. [Footnote: Here, and in No. 641 Mercurio seems to mean quicksilver, Giove stands for iron, Venere for copper and Saturno for lead.]

On chemical materials (638-650).

638.

Note how aqua vitae absorbs into itself all the colours and smells of flowers. If you want to make blue put iris flowers into it and for red solanum berries (?)

639.

Salt may be made from human excrement burnt and calcined and made into lees, and dried by a slow fire, and all dung in like manner yields salt, and these salts when distilled are very pungent.

640.

Sea water filtered through mud or clay, leaves all its saltness in it. Woollen stuffs placed on board ship absorb fresh water. If sea water is distilled under a retort it becomes of the first excellence and any one who has a little stove in his kitchen can, with the same wood as he cooks with, distil a great quantity of water if the retort is a large one.

641.

MOULD(?).

The mould (?) may be of Venus, or of Jupiter and Saturn and placed

frequently in the fire. And it should be worked with fine emery and the mould (?) should be of Venus and Jupiter impasted over (?) Venus. But first you will test Venus and Mercury mixed with Jove, and take means to cause Mercury to disperse; and then fold them well together so that Venus or Jupiter be connected as thinly as possible.

[Footnote: See the note to 637.]

642.

Nitre, vitriol, cinnabar, alum, salt ammoniac, sublimated mercury, rock salt, alcali salt, common salt, rock alum, alum schist (?), arsenic, sublimate, realgar, tartar, orpiment, verdegris.

643.

Pitch four ounces virgin wax, four ounces incense, two ounces oil of roses one ounce.

644.

Four ounces virgin wax, four ounces Greek pitch, two ounces incense, one ounce oil of roses, first melt the wax and oil then the Greek pitch then the other things in powder.

645.

Very thin glass may be cut with scissors and when placed over inlaid work of bone, gilt, or stained of other colours you can saw it through together with the bone and then put it together and it will retain a lustre that will not be scratched nor worn away by rubbing with the hand.

646.

TO DILUTE WHITE WINE AND MAKE IT PURPLE.

Powder gall nuts and let this stand 8 days in the white wine; and in the same way dissolve vitriol in water, and let the water stand and settle very clear, and the wine likewise, each by itself, and strain them well; and when you dilute the white wine with the water the wine will become red.

647.

Put marcasite into aqua fortis and if it turns green, know that it has copper in it. Take it out with saltpetre and soft soap.

648.

A white horse may have the spots removed with the Spanish haematite

or with aqua fortis or with … Removes the black hair on a white horse with the singeing iron. Force him to the ground.

649.

FIRE.

If you want to make a fire which will set a hall in a blaze without injury do this: first perfume the hall with a dense smoke of incense or some other odoriferous substance: It is a good trick to play. Or boil ten pounds of brandy to evaporate, but see that the hall is completely closed and throw up some powdered varnish among the fumes and this powder will be supported by the smoke; then go into the room suddenly with a lighted torch and at once it will be in a blaze.

650.

FIRE.

Take away that yellow surface which covers oranges and distill them in an alembic, until the distillation may be said to be perfect.

FIRE.

Close a room tightly and have a brasier of brass or iron with fire

in it and sprinkle on it two pints of aqua vitae, a little at a time, so that it may be converted into smoke. Then make some one come in with a light and suddenly you will see the room in a blaze like a flash of lightning, and it will do no harm to any one.

VII.

PHILOSOPHY AND HISTORY OF THE ART OF PAINTING.

The relation of art and nature (651. 652).

651.

What is fair in men, passes away, but not so in art.

652.

HE WHO DESPISES PAINTING LOVES NEITHER PHILOSOPHY NOR NATURE.

If you condemn painting, which is the only imitator of all visible works of nature, you will certainly despise a subtle invention which brings philosophy and subtle speculation to the consideration of the nature of all forms--seas and plains, trees, animals, plants and flowers--which are surrounded by shade and light. And this is true knowledge and the legitimate issue of nature; for painting is born of nature--or, to speak more correctly, we will say it is the

grandchild of nature; for all visible things are produced by nature, and these her children have given birth to painting. Hence we may justly call it the grandchild of nature and related to God.

Painting is superior to poetry (653. 654).

653.

THAT PAINTING SURPASSES ALL HUMAN WORKS BY THE SUBTLE CONSIDERATIONS

BELONGING TO IT.

The eye, which is called the window of the soul, is the principal means by which the central sense can most completely and abundantly appreciate the infinite works of nature; and the ear is the second, which acquires dignity by hearing of the things the eye has seen. If you, historians, or poets, or mathematicians had not seen things with your eyes you could not report of them in writing. And if you, 0 poet, tell a story with your pen, the painter with his brush can tell it more easily, with simpler completeness and less tedious to be understood. And if you call painting dumb poetry, the painter may call poetry blind painting. Now which is the worse defect? to be blind or dumb? Though the poet is as free as the painter in the invention of his fictions they are not so satisfactory to men as paintings; for, though poetry is able to describe forms, actions and places in words, the painter deals with the actual similitude of the

forms, in order to represent them. Now tell me which is the nearer to the actual man: the name of man or the image of the man. The name of man differs in different countries, but his form is never changed but by death.

654.

And if the poet gratifies the sense by means of the ear, the painter does so by the eye--the worthier sense; but I will say no more of this but that, if a good painter represents the fury of a battle, and if a poet describes one, and they are both together put before the public, you will see where most of the spectators will stop, to which they will pay most attention, on which they will bestow most praise, and which will satisfy them best. Undoubtedly painting being by a long way the more intelligible and beautiful, will please most. Write up the name of God [Christ] in some spot and setup His image opposite and you will see which will be most reverenced. Painting comprehends in itself all the forms of nature, while you have nothing but words, which are not universal as form is, and if you have the effects of the representation, we have the representation of the effects. Take a poet who describes the beauty of a lady to her lover and a painter who represents her and you will see to which nature guides the enamoured critic. Certainly the proof should be allowed to rest on the verdict of experience. You have ranked painting among the mechanical arts but, in truth, if painters were as apt at praising their own works in writing as you are, it would

not lie under the stigma of so base a name. If you call it mechanical because it is, in the first place, manual, and that it is the hand which produces what is to be found in the imagination, you too writers, who set down manually with the pen what is devised in your mind. And if you say it is mechanical because it is done for money, who falls into this error--if error it can be called--more than you? If you lecture in the schools do you not go to whoever pays you most? Do you do any work without pay? Still, I do not say this as blaming such views, for every form of labour looks for its reward. And if a poet should say: "I will invent a fiction with a great purpose," the painter can do the same, as Apelles painted Calumny. If you were to say that poetry is more eternal, I say the works of a coppersmith are more eternal still, for time preserves them longer than your works or ours; nevertheless they have not much imagination [29]. And a picture, if painted on copper with enamel colours may be yet more permanent. We, by our arts may be called the grandsons of God. If poetry deals with moral philosophy, painting deals with natural philosophy. Poetry describes the action of the mind, painting considers what the mind may effect by the motions [of the body]. If poetry can terrify people by hideous fictions, painting can do as much by depicting the same things in action. Supposing that a poet applies himself to represent beauty, ferocity, or a base, a foul or a monstrous thing, as against a painter, he may in his ways bring forth a variety of forms; but will the painter not satisfy more? are there not pictures to be seen, so like the actual things, that they deceive men and animals?

Painting is superior to sculpture (655. 656).

655.

THAT SCULPTURE IS LESS INTELLECTUAL THAN PAINTING, AND LACKS MANY CHARACTERISTICS OF NATURE.

I myself, having exercised myself no less in sculpture than in painting and doing both one and the other in the same degree, it seems to me that I can, without invidiousness, pronounce an opinion as to which of the two is of the greatest merit and difficulty and perfection. In the first place sculpture requires a certain light, that is from above, a picture carries everywhere with it its own light and shade. Thus sculpture owes its importance to light and shade, and the sculptor is aided in this by the nature, of the relief which is inherent in it, while the painter whose art expresses the accidental aspects of nature, places his effects in the spots where nature must necessarily produce them. The sculptor cannot diversify his work by the various natural colours of objects; painting is not defective in any particular. The sculptor when he uses perspective cannot make it in any way appear true; that of the painter can appear like a hundred miles beyond the picture itself. Their works have no aerial perspective whatever, they cannot represent transparent bodies, they cannot represent luminous bodies, nor reflected lights, nor lustrous bodies--as mirrors and the like

polished surfaces, nor mists, nor dark skies, nor an infinite number of things which need not be told for fear of tedium. As regards the power of resisting time, though they have this resistance [Footnote 19: From what is here said as to painting on copper it is very evident that Leonardo was not acquainted with the method of painting in oil on thin copper plates, introduced by the Flemish painters of the XVIIth century. J. LERMOLIEFF has already pointed out that in the various collections containing pictures by the great masters of the Italian Renaissance, those painted on copper (for instance the famous reading Magdalen in the Dresden Gallery) are the works of a much later date (see Zeitschrift fur bildende Kunst. Vol. X pg. 333, and: Werke italienischer Master in den Galerien von Munchen, Dresden und Berlin. Leipzig 1880, pg. 158 and 159.)--Compare No. 654, 29.], a picture painted on thick copper covered with white enamel on which it is painted with enamel colours and then put into the fire again and baked, far exceeds sculpture in permanence. It may be said that if a mistake is made it is not easy to remedy it; it is but a poor argument to try to prove that a work be the nobler because oversights are irremediable; I should rather say that it will be more difficult to improve the mind of the master who makes such mistakes than to repair the work he has spoilt.

656.

We know very well that a really experienced and good painter will not make such mistakes; on the contrary, with sound rules he will

remove so little at a time that he will bring his work to a good issue. Again the sculptor if working in clay or wax, can add or reduce, and when his model is finished it can easily be cast in bronze, and this is the last operation and is the most permanent form of sculpture. Inasmuch as that which is merely of marble is liable to ruin, but not bronze. Hence a painting done on copper which as I said of painting may be added to or altered, resembles sculpture in bronze, which, having first been made in wax could then be altered or added to; and if sculpture in bronze is durable, this work in copper and enamel is absolutely imperishable. Bronze is but dark and rough after all, but this latter is covered with various and lovely colours in infinite variety, as has been said above; or if you will have me only speak of painting on panel, I am content to pronounce between it and sculpture; saying that painting is the more beautiful and the more imaginative and the more copious, while sculpture is the more durable but it has nothing else. Sculpture shows with little labour what in painting appears a miraculous thing to do; to make what is impalpable appear palpable, flat objects appear in relief, distant objects seem close. In fact painting is adorned with infinite possibilities which sculpture cannot command.

Aphorisms (657-659).

657.

OF PAINTING.

Men and words are ready made, and you, O Painter, if you do not know how to make your figures move, are like an orator who knows not how to use his words.

658.

As soon as the poet ceases to represent in words what exists in nature, he in fact ceases to resemble the painter; for if the poet, leaving such representation, proceeds to describe the flowery and flattering speech of the figure, which he wishes to make the speaker, he then is an orator and no longer a poet nor a painter. And if he speaks of the heavens he becomes an astrologer, and philosopher; and a theologian, if he discourses of nature or God. But, if he restricts himself to the description of objects, he would enter the lists against the painter, if with words he could satisfy the eye as the painter does.

659.

Though you may be able to tell or write the exact description of forms, the painter can so depict them that they will appear alive, with the shadow and light which show the expression of a face; which you cannot accomplish with the pen though it can be achieved by the brush.

On the history of painting (660. 661).

660.

THAT PAINTING DECLINES AND DETERIORATES FROM AGE TO AGE, WHEN PAINTERS HAVE NO OTHER STANDARD THAN PAINTING ALREADY DONE.

Hence the painter will produce pictures of small merit if he takes for his standard the pictures of others. But if he will study from natural objects he will bear good fruit; as was seen in the painters after the Romans who always imitated each other and so their art constantly declined from age to age. After these came Giotto the Florentine who--not content with imitating the works of Cimabue his master--being born in the mountains and in a solitude inhabited only by goats and such beasts, and being guided by nature to his art, began by drawing on the rocks the movements of the goats of which he was keeper. And thus he began to draw all the animals which were to be found in the country, and in such wise that after much study he excelled not only all the masters of his time but all those of many bygone ages. Afterwards this art declined again, because everyone imitated the pictures that were already done; thus it went on from century to century until Tomaso, of Florence, nicknamed Masaccio, showed by his perfect works how those who take for their standard any one but nature--the mistress of all masters--weary themselves in vain. And, I would say about these mathematical studies that those who only study the authorities and not the works of nature are

descendants but not sons of nature the mistress of all good authors. Oh! how great is the folly of those who blame those who learn from nature [Footnote 22: lasciando stare li autori. In this observation we may detect an indirect evidence that Leonardo regarded his knowledge of natural history as derived from his own investigations, as well as his theories of perspective and optics. Compare what he says in praise of experience (Vol II; XIX).], setting aside those authorities who themselves were the disciples of nature.

661.

That the first drawing was a simple line drawn round the shadow of a man cast by the sun on a wall.

The painter's scope.

662.

The painter strives and competes with nature.

X.

Studies and Sketches for Pictures and Decorations.

An artist's manuscript notes can hardly be expected to contain any

thing more than incidental references to those masterpieces of his work of which the fame, sounded in the writings of his contemporaries, has left a glorious echo to posterity. We need not therefore be surprised to find that the texts here reproduced do not afford us such comprehensive information as we could wish. On the other hand, the sketches and studies prepared by Leonardo for the two grandest compositions he ever executed: The Fresco of the Last Supper in the Refectory of Santa Maria delle Grazie at Milan, and the Cartoon of the Battle of Anghiari, for the Palazzo della Signoria at Florence--have been preserved; and, though far from complete, are so much more numerous than the manuscript notes, that we are justified in asserting that in value and interest they amply compensate for the meagerness of the written suggestions.

The notes for the composition of the Last Supper, which are given under nos. 665 and 666 occur in a MS. at South Kensington, II2, written in the years 1494-1495. This MS. sketch was noted down not more than three or four years before the painting was executed, which justifies the inference that at the time when it was written the painter had not made up his mind definitely even as to the general scheme of the work; and from this we may also conclude that the drawings of apostles' heads at Windsor, in red chalk, must be ascribed to a later date. They are studies for the head of St. Matthew, the fourth figure on Christ's left hand--see Pl. XL VII, the sketch (in black chalk) for the head of St. Philip, the third figure on the left hand--see Pl. XL VIII, for St. Peter's right

arm--see Pl. XLIX, and for the expressive head of Judas which has unfortunately somewhat suffered by subsequent restoration of outlines,--see Pl. L. According to a tradition, as unfounded as it is improbable, Leonardo made use of the head of Padre Bandelli, the prior of the convent, as the prototype of his Judas; this however has already been contradicted by Amoretti "Memorie storiche" cap. XIV. The study of the head of a criminal on Pl. LI has, it seems to me, a better claim to be regarded as one of the preparatory sketches for the head of Judas. The Windsor collection contains two old copies of the head of St. Simon, the figure to the extreme left of Christ, both of about equal merit (they are marked as Nos. 21 and 36)--the second was reproduced on Pl. VIII of the Grosvenor Gallery Publication in 1878. There is also at Windsor a drawing in black chalk of folded hands (marked with the old No. 212; No. LXI of the Grosvenor Gallery Publication) which I believe to be a copy of the hands of St. John, by some unknown pupil. A reproduction of the excellent drawings of heads of Apostles in the possession of H. R. H. the Grand Duchess of Weimar would have been out of my province in this work, and, with regard to them, I must confine myself to pointing out that the difference in style does not allow of our placing the Weimar drawings in the same category as those here reproduced. The mode of grouping in the Weimar drawings is of itself sufficient to indicate that they were not executed before the picture was painted, but, on the contrary, afterwards, and it is, on the face of it, incredible that so great a master should thus have copied from his own work.

The drawing of Christ's head, in the Brera palace at Milan was perhaps originally the work of Leonardo's hand; it has unfortunately been entirely retouched and re-drawn, so that no decisive opinion can be formed as to its genuineness.

The red chalk drawing reproduced on Pl. XLVI is in the Accademia at Venice; it was probably made before the text, Nos. 664 and 665, was written.

The two pen and ink sketches on Pl. XLV seem to belong to an even earlier date; the more finished drawing of the two, on the right hand, represents Christ with only St. John and Judas and a third disciple whose action is precisely that described in No. 666, Pl. 4. It is hardly necessary to observe that the other sketches on this page and the lines of text below the circle (containing the solution of a geometrical problem) have no reference to the picture of the Last Supper. With this figure of Christ may be compared a similar pen and ink drawing reproduced on page 297 below on the left hand; the original is in the Louvre. On this page again the rest of the sketches have no direct bearing on the composition of the Last Supper, not even, as it seems to me, the group of four men at the bottom to the right hand--who are listening to a fifth, in their midst addressing them. Moreover the writing on this page (an explanation of a disk shaped instrument) is certainly not in the same style as we find constantly used by Leonardo after the year

1489.

It may be incidentally remarked that no sketches are known for the portrait of "Mona Lisa", nor do the MS. notes ever allude to it, though according to Vasari the master had it in hand for fully four years.

Leonardo's cartoon for the picture of the battle of Anghiari has shared the fate of the rival work, Michaelangelo's "Bathers summoned to Battle". Both have been lost in some wholly inexplicable manner. I cannot here enter into the remarkable history of this work; I can only give an account of what has been preserved to us of Leonardo's scheme and preparations for executing it. The extent of the material in studies and drawings was till now quite unknown. Their publication here may give some adequate idea of the grandeur of this famous work. The text given as No. 669 contains a description of the particulars of the battle, but for the reasons given in the note to this text, I must abandon the idea of taking this passage as the basis of my attempt to reconstruct the picture as the artist conceived and executed it.

I may here remind the reader that Leonardo prepared the cartoon in the Sala del Papa of Santa Maria Novella at Florence and worked there from the end of October 1503 till February 1504, and then was busied with the painting in the Sala del Consiglio in the Palazzo della Signoria, till the work was interrupted at the end of May

1506. (See Milanesi's note to Vasari pp. 43--45 Vol. IV ed. 1880.) Vasari, as is well known, describes only one scene or episode of the cartoon--the Battle for the Standard in the foreground of the composition, as it would seem; and this only was ever finished as a mural decoration in the Sala del Consiglio. This portion of the composition is familiar to all from the disfigured copy engraved by Edelinck. Mariette had already very acutely observed that Edelinck must surely have worked from a Flemish copy of the picture. There is in the Louvre a drawing by Rubens (No. 565) which also represents four horsemen fighting round a standard and which agrees with Edelinck's engraving, but the engraving reverses the drawing. An earlier Flemish drawing, such as may have served as the model for both Rubens and Edelinck, is in the Uffizi collection (see Philpots's Photograph, No. 732). It seems to be a work of the second half of the XVIth century, a time when both the picture and the cartoon had already been destroyed. It is apparently the production of a not very skilled hand. Raphael Trichet du Fresne, 1651, mentions that a small picture by Leonardo himself of the Battle of the Standard was then extant in the Tuileries; by this he probably means the painting on panel which is now in the possession of Madame Timbal in Paris, and which has lately been engraved by Haussoullier as a work by Leonardo. The picture, which is very carefully painted, seems to me however to be the work of some unknown Florentine painter, and probably executed within the first ten years of the XVIth century. At the same time, it would seem to be a copy not from Leonardo's cartoon, but from his picture in the Palazzo della

Signoria; at any rate this little picture, and the small Flemish drawing in Florence are the oldest finished copies of this episode in the great composition of the Battle of Anghiari.

In his Life of Raphael, Vasari tells us that Raphael copied certain works of Leonardo's during his stay in Florence. Raphael's first visit to Florence lasted from the middle of October 1504 till July 1505, and he revisited it in the summer of 1506. The hasty sketch, now in the possession of the University of Oxford and reproduced on page 337 also represents the Battle of the Standard and seems to have been made during his first stay, and therefore not from the fresco but from the cartoon; for, on the same sheet we also find, besides an old man's head drawn in Leonardo's style, some studies for the figure of St. John the Martyr which Raphael used in 1505 in his great fresco in the Church of San Severo at Perugia.

Of Leonardo's studies for the Battle of Anghiari I must in the first place point to five, on three of which--Pl. LII 2, Pl. LIII, Pl. LVI--we find studies for the episode of the Standard. The standard bearer, who, in the above named copies is seen stooping, holding on to the staff across his shoulder, is immediately recognisable as the left-hand figure in Raphael's sketch, and we find it in a similar attitude in Leonardo's pen and ink drawing in the British Museum--Pl. LII, 2--the lower figure to the right. It is not difficult to identify the same figure in two more complicated groups in the pen and ink drawings, now in the Accademia at Venice--Pl.

LIII, and Pl. LIV--where we also find some studies of foot soldiers fighting. On the sheet in the British Museum--Pl. LII, 2--we find, among others, one group of three horses galloping forwards: one horseman is thrown and protects himself with his buckler against the lance thrusts of two others on horseback, who try to pierce him as they ride past. The same action is repeated, with some variation, in two sketches in pen and ink on a third sheet, in the Accademia at Venice, Pl. LV; a coincidence which suggests the probability of such an incident having actually been represented on the cartoon. We are not, it is true, in a position to declare with any certainty which of these three dissimilar sketches may have been the nearest to the group finally adopted in executing the cartoon.

With regard, however, to one of the groups of horsemen it is possible to determine with perfect certainty not only which arrangement was preferred, but the position it occupied in the composition. The group of horsemen on Pl. LVII is a drawing in black chalk at Windsor, which is there attributed to Leonardo, but which appears to me to be the work of Cesare da Sesto, and the Commendatore Giov. Morelli supports me in this view. It can hardly be doubted that da Sesto, as a pupil of Leonardo's, made this drawing from his master's cartoon, if we compare it with the copy made by Raphael--here reproduced, for just above the fighting horseman in Raphael's copy it is possible to detect a horse which is seen from behind, going at a slower pace, with his tail flying out to the right and the same horse may be seen in the very same

attitude carrying a dimly sketched rider, in the foreground of Cesare da Sesto's drawing.

If a very much rubbed drawing in black chalk at Windsor--Pl. LVI--is, as it appears to be, the reversed impression of an original drawing, it is not difficult to supplement from it the portions drawn by Cesare da Sesto. Nay, it may prove possible to reconstruct the whole of the lost cartoon from the mass of materials we now have at hand which we may regard as the nucleus of the composition. A large pen and ink drawing by Raphael in the Dresden collection, representing three horsemen fighting, and another, by Cesare da Sesto, in the Uffizi, of light horsemen fighting are a further contribution which will help us to reconstruct it.

The sketch reproduced on Pl. LV gives a suggestive example of the way in which foot-soldiers may have been introduced into the cartoon as fighting among the groups of horsemen; and I may here take the opportunity of mentioning that, for reasons which it would be out of place to enlarge upon here, I believe the two genuine drawings by Raphael's hand in his "Venetian sketch-book" as it is called--one of a standard bearer marching towards the left, and one of two foot-soldiers armed with spears and fighting with a horseman--to be undoubtedly copies from the cartoon of the Battle of Anghiari.

Leonardo's two drawings, preserved in the museum at Buda-Pesth and reproduced on pages 338 and 339 are preliminary studies for the

heads of fighting warriors. The two heads drawn in black chalk (pg. 338) and the one seen in profile, turned to the left, drawn in red chalk (pg. 339), correspond exactly with those of two horsemen in the scene of the fight round the standard as we see them in Madame Timbal's picture and in the other finished copies. An old copy of the last named drawing by a pupil of Leonardo is in MS. C. A. 187b; 561b (See Saggio, Tav. XXII). Leonardo used to make such finished studies of heads as those, drawn on detached sheets, before beginning his pictures from his drawings--compare the preparatory studies for the fresco of the Last Supper, given on Pl. XLVII and Pl. L. Other drawings of heads, all characterised by the expression of vehement excitement that is appropriate to men fighting, are to be seen at Windsor (No. 44) and at the Accademia at Venice (IV, 13); at the back of one of the drawings at Buda-Pesth there is the bust of a warrior carrying a spear on his left shoulder, holding up the left arm (See Csatakepek a XVI--lk Szazadbol osszeallitotta Pvlszky Karoly). These drawings may have been made for other portions of the cartoon, of which no copies exist, and thus we are unable to identify these preparatory drawings. Finally I may add that a sketch of fighting horse and foot soldiers, formerly in the possession of M. Thiers and published by Charles Blanc in his "Vies des Peintres" can hardly be accepted as genuine. It is not to be found, as I am informed, among the late President's property, and no one appears to know where it now is.

An attempted reconstruction of the Cartoon, which is not only

unsuccessful but perfectly unfounded, is to be seen in the lithograph by Bergeret, published in Charles Blanc's "Vies des peintres" and reprinted in "The great Artists. L. da Vinci", p. 80. This misleading pasticcio may now be rejected without hesitation.

There are yet a few original drawings by Leonardo which might be mentioned here as possibly belonging to the cartoon of the Battle; such as the pen and ink sketches on Pl. XXI and on Pl. XXXVIII, No. 3, but we should risk too wide a departure from the domain of ascertained fact.

With regard to the colours and other materials used by Leonardo the reader may be referred to the quotations from the accounts for the picture in question given by Milanesi in his edition of Vasari (Vol. IV, p. 44, note) where we find entries of a similar character to those in Leonardo's note books for the year 1505; S. K. M. 12 (see No. 636).

That Leonardo was employed in designing decorations and other preparations for high festivals, particularly for the court of Milan, we learn not only from the writings of his contemporaries but from his own incidental allusions; for instance in MS. C. 15b (1), l. 9. In the arrangement of the texts referring to this I have placed those first, in which historical personages are named--Nos. 670-674. Among the descriptions of Allegorical subjects two texts lately found at Oxford have been included, Nos. 676 and 677. They

are particularly interesting because they are accompanied by large sketches which render the meaning of the texts perfectly clear. It is very intelligible that in other cases, where there are no illustrative sketches, the notes must necessarily remain obscure or admit of various interpretations. The literature of the time affords ample evidence of the use of such allegorical representations, particularly during the Carnival and in Leonardo's notes we find the Carnival expressly mentioned--Nos. 685 and 704. Vasari in his Life of Pontormo, particularly describes that artist's various undertakings for Carnival festivities. These very graphic descriptions appear to me to throw great light in more ways than one on the meaning of Leonardo's various notes as to allegorical representations and also on mottoes and emblems--Nos. 681-702. In passing judgment on the allegorical sketches and emblems it must not be overlooked that even as pictures they were always accompanied by explanations in words. Several finished drawings of allegorical compositions or figures have been preserved, but as they have no corresponding explanation in the MSS. they had no claim to be reproduced here. The female figure on Pl. XXVI may perhaps be regarded as a study for such an allegorical painting, of which the purport would have been explained by an inscription.

On Madonna pictures.

663.

[In the autumn of] 1478 I began the two Madonna [pictures].

[Footnote: Photographs of this page have been published by BRAUN, No. 439, and PHILPOT, No. 718.

1. Incominciai. We have no other information as to the two pictures of the Madonna here spoken of. As Leonardo here tells us that he had begun two Madonnas at the same time, the word 'incominciai' may be understood to mean that he had begun at the same time preparatory studies for two pictures to be painted later. If this is so, the non-existence of the pictures may be explained by supposing that they were only planned and never executed. I may here mention a few studies for pictures of the Madonna which probably belong to this early time; particularly a drawing in silver-point on bluish tinted paper at Windsor--see Pl. XL, No. 3--, a drawing of which the details have almost disappeared in the original but have been rendered quite distinct in the reproduction; secondly a slight pen and ink sketch in, the Codex VALLARDI, in the Louvre, fol. 64, No. 2316; again a silver point drawing of a Virgin and child drawn over again with the pen in the His de la Salle collection also in the Louvre, No. 101. (See Vicomte BOTH DE TAUZIA, Notice des dessins de la collection His de la Salle, exposes au Louvre. Paris 1881, pp. 80, 81.) This drawing is, it is true, traditionally ascribed to Raphael, but the author of the catalogue very justly points out its great resemblance with the sketches for Madonnas in the British Museum which are indisputably Leonardo's. Some of these

have been published by Mr. HENRY WALLIS in the Art Journal, New Ser. No. 14, Feb. 1882. If the non-existence of the two pictures here alluded to justifies my hypothesis that only studies for such pictures are meant by the text, it may also be supposed that the drawings were made for some comrade in VERROCCHIO'S atelier. (See VASARI, Sansoni's ed. Florence 1880. Vol. IV, p. 564): "E perche a Lerenzo piaceva fuor di modo la maniera di Lionardo, la seppe cosi bene imitare, che niuno fu che nella pulitezza e nel finir l'opere con diligenza l'imitasse più di lui." Leonardo's notes give me no opportunity of discussing the pictures executed by him in Florence, before he moved to Milan. So the studies for the unfinished picture of the Adoration of the Magi--in the Uffizi, Florence--cannot be described here, nor would any discussion about the picture in the Louvre "La Vierge aux Rochers" be appropriate in the absence of all allusion to it in the MSS. Therefore, when I presently add a few remarks on this painting in explanation of the Master's drawings for it, it will be not merely with a view to facilitate critical researches about the picture now in the National Gallery, London, which by some critics has been pronounced to be a replica of the Louvre picture, but also because I take this opportunity of publishing several finished studies of the Master's which, even if they were not made in Florence but later in Milan, must have been prior to the painting of the Last Supper. The original picture in Paris is at present so disfigured by dust and varnish that the current reproductions in photography actually give evidence more of the injuries to which the picture has been exposed than of the

original work itself. The wood-cut given on p. 344, is only intended to give a general notion of the composition. It must be understood that the outline and expression of the heads, which in the picture is obscured but not destroyed, is here altogether missed. The facsimiles which follow are from drawings which appear to me to be studies for "La Vierge aux Rochers."

1. A drawing in silver point on brown toned paper of a woman's head looking to the left. In the Royal Library at Turin, apparently a study from nature for the Angel's head (Pl. XLII).

2. A study of drapery for the left leg of the same figure, done with the brush, Indian ink on greenish paper, the lights heightened with white.

The original is at Windsor, No. 223. The reproduction Pl. XLIII is defective in the shadow on the upper part of the thigh, which is not so deep as in the original; it should also be observed that the folds of the drapery near the hips are somewhat altered in the finished work in the Louvre, while the London copy shows a greater resemblance to this study in that particular.

3. A study in red chalk for the bust of the Infant Christ--No. 3 in the Windsor collection (Pl. XLIV). The well-known silver-point drawing on pale green paper, in the Louvre, of a boy's head (No. 363 in REISET, Notice des dessins, Ecoles d'Italie) seems to me to be

a slightly altered copy, either from the original picture or from this red chalk study.

4. A silver-point study on greenish paper, for the head of John the Baptist, reproduced on p. 342. This was formerly in the Codex Vallardi and is now exhibited among the drawings in the Louvre. The lights are, in the original, heightened with white; the outlines, particularly round the head and ear, are visibly restored.

There is a study of an outstretched hand--No. 288 in the Windsor collection--which was published in the Grosvenor Gallery Publication, 1878, simply under the title of: "No. 72 Study of a hand, pointing" which, on the other hand, I regard as a copy by a pupil. The action occurs in the kneeling angel of the Paris picture and not in the London copy.

These four genuine studies form, I believe, a valuable substitute in the absence of any MS. notes referring to the celebrated Paris picture.]

Bernardo di Bandino's Portrait.

664.

A tan-coloured small cap, A doublet of black serge, A black jerkin lined A blue coat lined, with fur of foxes' breasts, and the collar

of the jerkin covered with black and white stippled velvet Bernardo di Bandino Baroncelli; black hose.

[Footnote: These eleven lines of text are by the side of the pen and ink drawing of a man hanged--Pl. LXII, No. 1. This drawing was exhibited in 1879 at the Ecole des Beaux-Arts in Paris and the compilers of the catalogue amused themselves by giving the victim's name as follows: "Un pendu, vetu d'une longue robe, les mains liées sur le dos ... Bernardo di Bendino Barontigni, marchand de pantalons" (see Catalogue descriptif des Dessins de Mailres anciens exposes a l'Ecole des Beaux Arts, Paris 1879; No. 83, pp. 9-10). Now, the criminal represented here, is none other than Bernardino di Bandino Baroncelli the murderer of Giuliano de'Medici, whose name as a coadjutor in the conspiracy of the Pazzi has gained a melancholy notoriety by the tragedy of the 26th April 1478. Bernardo was descended from an ancient family and the son of the man who, under King Ferrante, was President of the High Court of Justice in Naples. His ruined fortunes, it would seem, induced him to join the Pazzi; he and Francesco Pazzi were entrusted with the task of murdering Giuliano de'Medici on the fixed day. Their victim not appearing in the cathedral at the hour when they expected him, the two conspirators ran to the palace of the Medici and induced him to accompany them. Giuliano then took his place in the chancel of the Cathedral, and as the officiating priest raised the Host--the sign agreed upon--Bernardo stabbed the unsuspecting Giuliano in the breast with a short sword; Giuliano stepped backwards and fell dead.

The attempt on Lorenzo's life however, by the other conspirators at the same moment, failed of success. Bernardo no sooner saw that Lorenzo tried to make his escape towards the sacristy, than he rushed upon him, and struck down Francesco Nori who endeavoured to protect Lorenzo. How Lorenzo then took refuge behind the brazen doors of the sacristy, and how, as soon as Giuliano's death was made known, the further plans of the conspirators were defeated, while a terrible vengeance overtook all the perpetrators and accomplices, this is no place to tell. Bernardo Bandini alone seemed to be favoured by fortune; he hid first in the tower of the Cathedral, and then escaped undiscovered from Florence. Poliziano, who was with Lorenzo in the Cathedral, says in his 'Conjurationis Pactianae Commentarium': "Bandinus fugitans in Tiphernatem incidit, a quo in aciem receptus Senas pervenit." And Gino Capponi in summing up the reports of the numerous contemporary narrators of the event, says: "Bernardo Bandini ricoverato in Costantinopoli, fu per ordine del Sultano preso e consegnato a un Antonio di Bernardino dei Medici, che Lorenzo aveva mandato apposta in Turchia: così era grande la potenza di quest' uomo e grande la voglia di farne mostra e che non restasse in vita chi aveagli ucciso il fratello, fu egli applicato appena giunto" (Storia della Republica di Firenze II, 377, 378). Details about the dates may be found in the Chronichetta di Belfredello Strinati Alfieri: "Bernardo di Bandino Bandini sopradetto ne venne preso da Gostantinopoti a dì 14. Dicembre 1479 e disaminato, che fu al Bargello, fu impiccato alle finestre di detto Bargello allato alla Doana a dì 29. Dicembre MCCCCLXXIX che pochi dì

stette." It may however be mentioned with reference to the mode of writing the name of the assassin that, though most of his contemporaries wrote Bernardo Bandini, in the Breve Chronicon Caroli Petri de Joanninis he is called Bernardo di Bandini Baroncelli; and, in the Sententiae Domini Matthaei de Toscana, Bernardus Joannis Bandini de Baroncellis, as is written on Leonardo's drawing of him when hanged. Now VASARI, in the life of Andrea del Castagno (Vol. II, 680; ed. Milanesi 1878), tells us that in 1478 this painter was commissioned by order of the Signoria to represent the members of the Pazzi conspiracy as traitors, on the facade of the Palazzo del Podestà--the Bargello. This statement is obviously founded on a mistake, for Andrea del Castagno was already dead in 1457. He had however been commissioned to paint Rinaldo degli Albizzi, when declared a rebel and exiled in 1434, and his adherents, as hanging head downwards; and in consequence he had acquired the nickname of Andrea degl' Impiccati. On the 21st July 1478 the Council of Eight came to the following resolution: "item servatis etc. deliberaverunt et santiaverunt Sandro Botticelli pro ejus labore in pingendo proditores flor. quadraginta largos" (see G. MILANESI, Arch. star. VI (1862) p. 5 note.)

As has been told, Giuliano de' Medici was murdered on the 26th April 1478, and we see by this that only three months later Botticelli was paid for his painting of the "proditores". We can however hardly suppose that all the members of the conspiracy were depicted by him in fresco on the facade of the palace, since no fewer than eighty

had been condemned to death. We have no means of knowing whether, besides Botticelli, any other painters, perhaps Leonardo, was commissioned, when the criminals had been hanged in person out of the windows of the Palazzo del Podestà to represent them there afterwards in effigy in memory of their disgrace. Nor do we know whether the assassin who had escaped may at first not have been provisionally represented as hanged in effigy. Now, when we try to connect the historical facts with this drawing by Leonardo reproduced on Pl. LXII, No. I, and the full description of the conspirator's dress and its colour on the same sheet, there seems to be no reasonable doubt that Bernardo Bandini is here represented as he was actually hanged on December 29th, 1479, after his capture at Constantinople. The dress is certainly not that in which he committed the murder. A long furred coat might very well be worn at Constantinople or at Florence in December, but hardly in April. The doubt remains whether Leonardo described Bernardo's dress so fully because it struck him as remarkable, or whether we may not rather suppose that this sketch was actually made from nature with the intention of using it as a study for a wall painting to be executed.
It cannot be denied that the drawing has all the appearance of having been made for this purpose. Be this as it may, the sketch under discussion proves, at any rate, that Leonardo was in Florence in December 1479, and the note that accompanies it is valuable as adding one more characteristic specimen to the very small number of his MSS. that can be proved to have been written between 1470 and 1480.]

Notes on the Last Supper (665-668).

665.

One who was drinking and has left the glass in its position and turned his head towards the speaker.

Another, twisting the fingers of his hands together turns with stern brows to his companion [6]. Another with his hands spread open shows the palms, and shrugs his shoulders up his ears making a mouth of astonishment [8].

[9] Another speaks into his neighbour's ear and he, as he listens to him, turns towards him to lend an ear [10], while he holds a knife in one hand, and in the other the loaf half cut through by the knife. [13] Another who has turned, holding a knife in his hand, upsets with his hand a glass on the table [14].

[Footnote 665, 666: In the original MS. there is no sketch to accompany these passages, and if we compare them with those drawings made by Leonardo in preparation for the composition of the picture--Pl. XLV, XLVI--, (compare also Pl. LII, 1 and the drawings on p. 297) it is impossible to recognise in them a faithful interpretation of the whole of this text; but, if we compare these passages with the finished picture (see p. 334) we shall see that in

many places they coincide. For instance, compare No. 665, 1. 6--8, with the fourth figure on the right hand of Christ. The various actions described in lines 9--10, 13--14 are to be seen in the group of Peter, John and Judas; in the finished picture however it is not a glass but a salt cellar that Judas is upsetting.]

666.

Another lays his hand on the table and is looking. Another blows his mouthful. [3] Another leans forward to see the speaker shading his eyes with his hand. [5] Another draws back behind the one who leans forward, and sees the speaker between the wall and the man who is leaning [Footnote: 6. chinato. I have to express my regret for having misread this word, written cinato in the original, and having altered it to "ciclo" when I first published this text, in 'The Academy' for Nov. 8, 1879 immediately after I had discovered it, and subsequently in the small biography of Leonardo da Vinci (Great Artists) p. 29.].

[Footnote: In No. 666. Line I must refer to the furthest figure on the left; 3, 5 and 6 describe actions which are given to the group of disciples on the left hand of Christ.]

667.

CHRIST.

Count Giovanni, the one with the Cardinal of Mortaro.

[Footnote: As this note is in the same small Manuscript as the passage here immediately preceding it, I may be justified in assuming that Leonardo meant to use the features of the person here named as a suitable model for the figure of Christ. The celebrated drawing of the head of Christ, now hanging in the Brera Gallery at Milan, has obviously been so much restored that it is now impossible to say, whether it was ever genuine. We have only to compare it with the undoubtedly genuine drawings of heads of the disciples in PI. XLVII, XLVIII and L, to admit that not a single line of the Milan drawing in its present state can be by the same hand.]

668.

Philip, Simon, Matthew, Thomas, James the Greater, Peter, Philip, Andrew, Bartholomew.

[Footnote: See PI. XLVI. The names of the disciples are given in the order in which they are written in the original, from right to left, above each head. The original drawing is here slightly reduced in scale; it measures 39 centimetres in length by 26 in breadth.]

669.

On the battle of Anghiari.

Florentine

Neri di Gino Capponi

Bernardetto de' Medici

Micheletto,

Niccolo da Pisa

Conte Francesco

Pietro Gian Paolo

Guelfo Orsino,

Messer Rinaldo degli Albizzi

Begin with the address of Niccolo Piccinino to the soldiers and the banished Florentines among whom are Messer Rinaldo degli Albizzi and other Florentines. Then let it be shown how he first mounted on horseback in armour; and the whole army came after him--40 squadrons of cavalry, and 2000 foot soldiers went with him. Very early in the morning the Patriarch went up a hill to reconnoitre the country, that is the hills, fields and the valley watered by a river; and from thence he beheld Niccolo Picinino coming from Borgo San Sepolcro with his people, and with a great dust; and perceiving them he returned to the camp of his own people and addressed them. Having spoken he prayed to God with clasped hands, when there appeared a cloud in which Saint Peter appeared and spoke to the Patriarch.--500 cavalry were sent forward by the Patriarch to hinder or check the rush of the enemy. In the foremost troop Francesco the son of

Niccolo Piccinino [24] was the first to attack the bridge which was held by the Patriarch and the Florentines. Beyond the bridge to his left he sent forward some infantry to engage ours, who drove them back, among whom was their captain Micheletto [29] whose lot it was to be that day at the head of the army. Here, at this bridge there is a severe struggle; our men conquer and the enemy is repulsed. Here Guido and Astorre, his brother, the Lord of Faenza with a great number of men, re-formed and renewed the fight, and rushed upon the Florentines with such force that they recovered the bridge and pushed forward as far as the tents. But Simonetto advanced with 600 horse, and fell upon the enemy and drove them back once more from the place, and recaptured the bridge; and behind him came more men with 2000 horse soldiers. And thus for a long time they fought with varying fortune. But then the Patriarch, in order to divert the enemy, sent forward Niccolo da Pisa [44] and Napoleone Orsino, a beardless lad, followed by a great multitude of men, and then was done another great feat of arms. At the same time Niccolo Piccinino urged forward the remnant of his men, who once more made ours give way; and if it had not been that the Patriarch set himself at their head and, by his words and deeds controlled the captains, our soldiers would have taken to flight. The Patriarch had some artillery placed on the hill and with these he dispersed the enemy's infantry; and the disorder was so complete that Niccolo began to call back his son and all his men, and they took to flight towards Borgo. And then began a great slaughter of men; none escaped but the foremost of those who had fled or who hid themselves. The battle

continued until sunset, when the Patriarch gave his mind to recalling his men and burying the dead, and afterwards a trophy was erected.

[Footnote: 669. This passage does not seem to me to be in Leonardo's hand, though it has hitherto been generally accepted as genuine. Not only is the writing unlike his, but the spelling also is quite different. I would suggest that this passage is a description of the events of the battle drawn up for the Painter by order of the Signoria, perhaps by some historian commissioned by them, to serve as a scheme or programme of the work. The whole tenor of the style seems to me to argue in favour of this theory; and besides, it would be in no way surprising that such a document should have been preserved among Leonardo's autographs.]

Allegorical representations referring to the duke of Milan (670-673).

670.

Ermine with blood Galeazzo, between calm weather and a representation of a tempest.

[Footnote: 670. Only the beginning of this text is legible; the writing is much effaced and the sense is consequently obscure. It seems to refer like the following passage to an allegorical

picture.]

671.

Il Moro with spectacles, and Envy depicted with False Report and Justice black for il Moro.

Labour as having a branch of vine [or a screw] in her hand.

672.

Il Moro as representing Good Fortune, with hair, and robes, and his hands in front, and Messer Gualtieri taking him by the robes with a respectful air from below, having come in from the front [5].

Again, Poverty in a hideous form running behind a youth. Il Moro covers him with the skirt of his robe, and with his gilt sceptre he threatens the monster.

A plant with its roots in the air to represent one who is at his last;--a robe and Favour.

Of tricks [or of magpies] and of burlesque poems [or of starlings].

Those who trust themselves to live near him, and who will be a large

crowd, these shall all die cruel deaths; and fathers and mothers together with their families will be devoured and killed by cruel creatures.

[Footnote: 1--10 have already been published by Amoretti in Memorie Storiche cap. XII. He adds this note with regard to Gualtieri: "A questo M. Gualtieri come ad uomo generoso e benefico scrive il Bellincioni un Sonetto (pag, 174) per chiedergli un piacere; e 'l Tantio rendendo ragione a Lodovico il Moro, perche pubblicasse le Rime del Bellincioni; ciò hammi imposto, gli dice: l'humano fidele, prudente e sollicito executore delli tuoi comandamenti Gualtero, che fa in tutte le cose ove tu possi far utile, ogni studio vi metti." A somewhat mysterious and evidently allegorical composition--a pen and ink drawing--at Windsor, see PL LVIII, contains a group of figures in which perhaps the idea is worked out which is spoken of in the text, lines 1-5.]

673.

He was blacker than a hornet, his eyes were as red as a burning fire and he rode on a tall horse six spans across and more than 20 long with six giants tied up to his saddle-bow and one in his hand which he gnawed with his teeth. And behind him came boars with tusks sticking out of their mouths, perhaps ten spans.

Allegorical representations (674--678).

674.

Above the helmet place a half globe, which is to signify our hemisphere, in the form of a world; on which let there be a peacock, richly decorated, and with his tail spread over the group; and every ornament belonging to the horse should be of peacock's feathers on a gold ground, to signify the beauty which comes of the grace bestowed on him who is a good servant.

On the shield a large mirror to signify that he who truly desires favour must be mirrored in his virtues.

On the opposite side will be represented Fortitude, in like manner in her place with her pillar in her hand, robed in white, to signify ... And all crowned; and Prudence with 3 eyes. The housing of the horse should be of plain cloth of gold closely sprinkled with peacock's eyes, and this holds good for all the housings of the horse, and the man's dress. And the man's crest and his neck-chain are of peacock's feathers on golden ground.

On the left side will be a wheel, the centre of which should be attached to the centre of the horse's hinder thigh piece, and in the centre Prudence is seen robed in red, Charity sitting in a fiery chariot and with a branch of laurel in her hand, to signify the hope which comes of good service.

[21] Messer Antonio Grimani of Venice companion of Antonio Maria [23].

[Footnote: Messer Antonio Gri. His name thus abbreviated is, there can be no doubt, Grimani. Antonio Grimani was the famous Doge who in 1499 commanded the Venetian fleet in battle against the Turks. But after the abortive conclusion of the expedition--Ludovico being the ally of the Turks who took possession of Friuli--, Grimani was driven into exile; he went to live at Rome with his son Cardinal Domenico Grimani. On being recalled to Venice he filled the office of Doge from 1521 to 1523. Antonio Maria probably means Antonio Maria Grimani, the Patriarch of Aquileia.]

675.

Fame should be depicted as covered all over with tongues instead of feathers, and in the figure of a bird.

676.

Pleasure and Pain represent as twins, since there never is one without the other; and as if they were united back to back, since they are contrary to each other.

[6] Clay, gold.

[Footnote: 7. oro. fango: gold, clay. These words stand below the allegorical figure.]

If you take Pleasure know that he has behind him one who will deal you Tribulation and Repentance.

[9] This represents Pleasure together with Pain, and show them as twins because one is never apart from the other. They are back to back because they are opposed to each other; and they exist as contraries in the same body, because they have the same basis, inasmuch as the origin of pleasure is labour and pain, and the various forms of evil pleasure are the origin of pain. Therefore it is here represented with a reed in his right hand which is useless and without strength, and the wounds it inflicts are poisoned. In Tuscany they are put to support beds, to signify that it is here that vain dreams come, and here a great part of life is consumed. It is here that much precious time is wasted, that is, in the morning, when the mind is composed and rested, and the body is made fit to begin new labours; there again many vain pleasures are enjoyed; both by the mind in imagining impossible things, and by the body in taking those pleasures that are often the cause of the failing of life. And for these reasons the reed is held as their support.

[Footnote: 676. The pen and ink drawing on PI. LIX belongs to this passage.]

[Footnote: 8. tribolatione. In the drawing caltrops may be seen lying in the old man's right hand, others are falling and others again are shewn on the ground. Similar caltrops are drawn in MS. Tri. p. 98 and underneath them, as well as on page 96 the words triboli di ferro are written. From the accompanying text it appears that they were intended to be scattered on the ground at the bottom of ditches to hinder the advance of the enemy. Count Giulio Porro who published a short account of the Trivulzio MS. in the "Archivio Storico Lombardo", Anno VIII part IV (Dec. 31, 1881) has this note on the passages treating of "triboli": "E qui aggiungerò che anni sono quando venne fabbricata la nuova cavallerizza presso il castello di Milano, ne furono trovati due che io ho veduto ed erano precisamente quali si trovano descritti e disegnati da Leonardo in questo codice".

There can therefore be no doubt that this means of defence was in general use, whether it were originally Leonardo's invention or not. The play on the word "tribolatione", as it occurs in the drawing at Oxford, must then have been quite intelligible.]

[Footnote: 9--22. These lines, in the original, are written on the left side of the page and refer to the figure shown on PI. LXI. Next to it is placed the group of three figures given in PI. LX No. I. Lines 21 and 22, which are written under it, are the only explanation given.]