

given to me there was a dearth of water in the canal, as well by reason of the great drought as also because the outlets were not regulated; but your Excellency promised me that as soon as this was done, I should have my rights. Afterwards hearing that the canal was complete I wrote several times to your Lordship and to Messer Girolamo da Cusano, who has in his keeping the deed of this gift; and so also I wrote to Corigero and never had a reply. I now send thither Salai, my pupil, the bearer of this, to whom your Lordship may tell by word of mouth all that happened in the matter about which I petition your Excellency. I expect to go thither this Easter since I am nearly at the end of my lawsuit, and I will take with me two pictures of our Lady which I have begun, and at the present time have brought them on to a very good end; nothing else occurs to me.

My Lord the love which your Excellency has always shown me and the benefits that I have constantly received from you I have hitherto...

I am fearful lest the small return I have made for the great benefits I have received from your Excellency may not have made you somewhat annoyed with me. And this is why, to many letters which I have written to your Excellency I have never had an answer. I now send to you Salai to explain to your Excellency that I am almost at the end of my litigation with my brothers, and that I hope to be with you this Easter and carry with me two pictures on which are two Madonnas of different sizes which I began for the most Christian King, or for whomsoever you please. I should be very glad to know

where, on my return from this place, I shall have to reside, because I do not wish to give more trouble to your Lordship; and then, having worked for the most Christian King, whether my salary is to be continued or not. I write to the President as to the water that the king granted me of which I had not been put in possession by reason of the dearth in the canal, caused by the great drought and because its outlets were not regulated; but he promised me certainly that as soon as the regulation was made, I should be put in possession of it; I therefore pray you that, if you should meet the said President, you would be good enough, now that the outlets are regulated, to remind the said President to cause me to be put in possession of that water, since I understand it is in great measure in his power. Nothing else occurs to me; always yours to command.

Good day to you Messer Francesco. Why, in God's name, of all the letters I have written to you, have you never answered one. Now wait till I come, by God, and I shall make you write so much that perhaps you will become sick of it.

Dear Messer Francesco. I am sending thither Salai to learn from His Magnificence the President to what end the regulation of the water has come since, at my departure this regulation of the outlets of the canal had been ordered, because His Magnificence the President promised me that as soon as this was done I should be satisfied. It is now some time since I heard that the canal was in order, as also its outlets, and I immediately wrote to the President and to you,

and then I repeated it, and never had an answer. So you will have the goodness to answer me as to that which happened, and as I am not to hurry the matter, would you take the trouble, for the love of me, to urge the President a little, and also Messer Girolamo Cusano, to whom you will commend me and offer my duty to his Magnificence.

[Footnote: 1350. 28-36. Draft of a letter to Francesco Melzi, born 1493--a youth therefore of about 17 in 1510. Leonardo addresses his young friend as "Messer", as being the son of a noble house. Melzi practised art under Leonardo as a dilettante and not as a pupil, like Cesare da Sesto and others (See LERMOLIEFF, Die Galerien &c., p. 476).]

Drafts of a letter to Giuliano de' Medici (1351-1352).

1351.

[Most illustrious Lord. I greatly rejoice most Illustrious Lord at your...]

I was so greatly rejoiced, most illustrious Lord, by the desired restoration of your health, that it almost had the effect that [my own health recovered]--[I have got through my illness]--my own illness left me-- --of your Excellency's almost restored health. But I am extremely vexed that I have not been able completely to satisfy the wishes of your Excellency, by reason of the wickedness of that

deceiver, for whom I left nothing undone which could be done for him by me and by which I might be of use to him; and in the first place his allowances were paid to him before the time, which I believe he would willingly deny, if I had not the writing signed by myself and the interpreter. And I, seeing that he did not work for me unless he had no work to do for others, which he was very careful in soliciting, invited him to dine with me, and to work afterwards near me, because, besides the saving of expense, he

[Footnote 1351. 1353: It is clear from the contents of this notes that they refer to Leonardo's residence in Rome in 1513-1515. Nor can there be any doubt that they were addressed to Leonardo's patron at the time: Giuliano de' Medici, third son of Lorenzo the Magnificent and brother of Pope Leo X (born 1478). In 1512 he became the head of the Florentine Republic. The Pope invited him to Rome, where he settled; in 1513 he was named patrician with much splendid ceremonial. The medal struck in honour of the event bears the words MAG. IVLIAN. MEDICES. Leonardo too uses the style "Magnifico", in his letter. Compare also No. 1377.

GINO CAPPONI (Storia della Repubblica di Firenze, Vol. III, p. 139) thus describes the character of Giuliano de' Medici, who died in 1516: Era il migliore della famiglia, di vita placida, grande spenditore, tenendo intorno a se uomini ingegnosi, ed ogni nuova cosa voleva provare.

See too GREGOROVIVS, Geschichte der Stadi Rom, VIII (book XIV. III, 2): Die Luftschlosser furstlicher Grosse, wozu ihn der Papst hatte erheben wollen zerfielen. Julian war der edelste aller damaligen Medici, ein Mensch von innerlicher Richtung, unbefriedigt durch das Leben, mitten im Sonnenglanz der Herrlichkeit Leo's X. eine dunkle Gestalt die wie ein Schatten voruberzog. Giuliano lived in the Vatican, and it may be safely inferred from No. 1352 l. 2, and No. 1353 l. 4, that Leonardo did the same.

From the following unpublished notice in the Vatican archives, which M. Eug. Muntz, librarian of the Ecole des Beaux arts, Paris, has done me the favour to communicate to me, we get a more accurate view of Leonardo's relation to the often named GIORGIO TEDESCO:

Nota delle provisione (sic) a da pagare per me in nome del nostro ill. S. Bernardo Bini e chompa di Roma, e prima della illma sua chonsorte ogni mese d. 800.

A Ldo da Vinci per sua provisione d. XXXIII, e piu d. VII al detto per la provisione di Giorgio tedesco, che sono in tutto d. 40.

From this we learn, that seven ducats formed the German's monthly wages, but according to No. 1353 l. 7 he pretended that eight ducats had been agreed upon.]

would acquire the Italian language. He always promised, but would

never do so. And this I did also, because that Giovanni, the German who makes the mirrors, was there always in the workshop, and wanted to see and to know all that was being done there and made it known outside ... strongly criticising it; and because he dined with those of the Pope's guard, and then they went out with guns killing birds among the ruins; and this went on from after dinner till the evening; and when I sent Lorenzo to urge him to work he said that he would not have so many masters over him, and that his work was for your Excellency's Wardrobe; and thus two months passed and so it went on; and one day finding Gian Niccolo of the Wardrobe and asking whether the German had finished the work for your Magnificence, he told me this was not true, but only that he had given him two guns to clean. Afterwards, when I had urged him farther, he left the workshop and began to work in his room, and lost much time in making another pair of pincers and files and other tools with screws; and there he worked at mills for twisting silk which he hid when any one of my people went in, and with a thousand oaths and mutterings, so that none of them would go there any more.

I was so greatly rejoiced, most Illustrious Lord, by the desired restoration of your health, that my own illness almost left me. But I am greatly vexed at not having been able to completely satisfy your Excellency's wishes by reason of the wickedness of that German deceiver, for whom I left nothing undone by which I could have hope to please him; and secondly I invited him to lodge and board with me, by which means I should constantly see the work he was doing and

with greater ease correct his errors while, besides this, he would learn the Italian tongue, by means of which he could with more ease talk without an interpreter; his moneys were always given him in advance of the time when due. Afterwards he wanted to have the models finished in wood, just as they were to be in iron, and wished to carry them away to his own country. But this I refused him, telling him that I would give him, in drawing, the breadth, length, height and form of what he had to do; and so we remained in ill-will.

The next thing was that he made himself another workshop and pincers and tools in his room where he slept, and there he worked for others; afterwards he went to dine with the Swiss of the guard, where there are idle fellows, in which he beat them all; and most times they went two or three together with guns, to shoot birds among the ruins, and this went on till evening.

At last I found how this master Giovanni the mirror-maker was he who had done it all, for two reasons; the first because he had said that my coming here had deprived him of the countenance and favour of your Lordship which always... The other is that he said that his iron-workers' rooms suited him for working at his mirrors, and of this he gave proof; for besides making him my enemy, he made him sell all he had and leave his workshop to him, where he works with a number of workmen making numerous mirrors to send to the fairs.

1352.

I was so greatly rejoiced, most Illustrious Lord, by the wished for recovery of your health, that my own ills have almost left me; and I say God be praised for it. But it vexes me greatly that I have not been able completely to satisfy your Excellency's wishes by reason of the wickedness of that German deceiver, for whom I left nothing undone by which I could hope to please him; and secondly I invited him to lodge and board with me, by which means I should see constantly the work he was doing, for which purpose I would have a table fixed at the foot of one of these windows, where he could work with the file and finish the things made below; and so I should constantly see the work he might do, and it could be corrected with greater ease.

Draft of letter written at Rome.

1353.

This other hindered me in anatomy, blaming it before the Pope; and likewise at the hospital; and he has filled [4] this whole Belvedere with workshops for mirrors; and he did the same thing in Maestro Giorgio's room. He said that he had been promised [7] eight ducats every month, beginning with the first day, when he set out, or at latest when he spoke with you; and that you agreed.



Seeing that he seldom stayed in the workshop, and that he ate a great deal, I sent him word that, if he liked I could deal with him separately for each thing that he might make, and would give him what we might agree to be a fair valuation. He took counsel with his neighbour and gave up his room, selling every thing, and went to find...

Miscellaneous Records (1354. 1355).

1354.

[Footnote: A puzzling passage, meant, as it would seem, for a jest.

Compare the description of Giants in Dante, Inf. XXI and XXII.

Perhaps Leonardo had the Giant Antaeus in his mind. Of him the myth relates that he was a son of Ge, that he fed on lions; that he hunted in Libya and killed the inhabitants. He enjoyed the peculiarity of renewing his strength whenever he fell and came in contact with his mother earth; but that Hercules lifted him up and so conquered and strangled him. Lucan gives a full account of the struggle. Pharsalia IV, 617. The reading of this passage, which is very indistinctly written, is in many places doubtful.]

Dear Benedetto de' Pertarti. When the proud giant fell because of the bloody and miry state of the ground it was as though a mountain had fallen so that the country shook as with an earthquake, and terror fell on Pluto in hell. From the violence of the shock he lay

as stunned on the level ground. Suddenly the people, seeing him as one killed by a thunderbolt, turned back; like ants running wildly over the body of the fallen oak, so these rushing over his ample limbs..... them with frequent wounds; by which, the giant being roused and feeling himself almost covered by the multitude, he suddenly perceives the smarting of the stabs, and sent forth a roar which sounded like a terrific clap of thunder; and placing his hands on the ground he raised his terrible face: and having lifted one hand to his head he found it full of men and rabble sticking to it like the minute creatures which not unfrequently are found there; wherefore with a shake of his head he sends the men flying through the air just as hail does when driven by the fury of the winds. Many of these men were found to be dead; stamping with his feet.

And clinging to his hair, and striving to hide in it, they behaved like sailors in a storm, who run up the ropes to lessen the force of the wind [by taking in sail].

News of things from the East.

Be it known to you that in the month of June there appeared a Giant, who came from the Lybian desert... mad with rage like ants.... struck down by the rude.

This great Giant was born in Mount Atlas and was a hero ... and had to fight against the Egyptians and Arabs, Medes and Persians. He

lived in the sea on whales, grampuses and ships.

Mars fearing for his life took refuge under the... of Jove.

And at the great fall it seemed as though the whole province quaked.

1355.

This spirit returns to the brain whence it had departed, with a loud voice and with these words, it moved...

And if any man though he may have wisdom or goodness .....

[Footnote: This passage, very difficult to decipher, is on the reverse of a drawing at Windsor, Pl. CXXII, which possibly has some connection with it. The drawing is slightly reduced in this reproduction; the original being 25 cm. high by 19 cm. wide.]

O blessed and happy spirit whence comest thou? Well have I known this man, much against my will. This one is a receptacle of villainy; he is a perfect heap of the utmost ingratitude combined with every vice. But of what use is it to fatigue myself with vain words? Nothing is to be found in them but every form of sin ... And if there should be found among them any that possesses any good, they will not be treated differently to myself by other men; and in fine, I come to the conclusion that it is bad if they are hostile,

and worse if they are friendly.

Miscellaneous drafts of letters and personal records (1356--1368).

1356.

All the ills that are or ever were, if they could be set to work by him, would not satisfy the desires of his iniquitous soul; and I could not in any length of time describe his nature to you, but I conclude...

1357.

I know one who, having promised me much, less than my due, being disappointed of his presumptuous desires, has tried to deprive me of all my friends; and as he has found them wise and not pliable to his will, he has menaced me that, having found means of denouncing me, he would deprive me of my benefactors. Hence I have informed your Lordship of this, to the end [that this man who wishes to sow the usual scandals, may find no soil fit for sowing the thoughts and deeds of his evil nature] so that he, trying to make your Lordship, the instrument of his iniquitous and maliceous nature may be disappointed of his desire.

1358.

[Footnote: Below this text we read gusstino--Giustino and in another passage on the same page Justin is quoted (No. 1210, 1. 48). The two have however no real connection.]

And in this case I know that I shall make few enemies seeing that no one will believe what I can say of him; for they are but few whom his vices have disgusted, and he only dislikes those men whose natures are contrary to those vices. And many hate their fathers, and break off friendship with those who reprove their vices; and he will not permit any examples against them, nor any advice.

If you meet with any one who is virtuous do not drive him from you; do him honour, so that he may not have to flee from you and be reduced to hiding in hermitages, or caves or other solitary places to escape from your treachery; if there is such an one among you do him honour, for these are our Saints upon earth; these are they who deserve statues from us, and images; but remember that their images are not to be eaten by you, as is still done in some parts of India

[Footnote 15: In explanation of this passage I have received the following communication from Dr. G. W. LEITNER of Lahore: "So far as Indian customs are known to us, this practice spoken of by Leonardo as 'still existing in some parts of India' is perfectly unknown; and it is equally opposed to the spirit of Hinduism, Mohammedanism and Sikhism. In central Thibet the ashes of the dead, when burnt, are mixed with dough, and small figures--usually of Buddha--are stamped out of them and some are laid in the grave while others are

distributed among the relations. The custom spoken of by Leonardo may have prevailed there but I never heard of it." Possibly Leonardo refers here to customs of nations of America.] where, when the images have according to them, performed some miracle, the priests cut them in pieces, being of wood, and give them to all the people of the country, not without payment; and each one grates his portion very fine, and puts it upon the first food he eats; and thus believes that by faith he has eaten his saint who then preserves him from all perils. What do you think here, Man, of your own species? Are you so wise as you believe yourselves to be? Are these things to be done by men?

1359.

As I told you in past days, you know that I am without any....

Francesco d'Antonio. Bernardo di Maestro Jacopo.

1360.

Tell me how the things happened.

1361.

j lorezo\\ 2 inbiadali\\ 3 inferri de\\ 4in lorezo\\ 5[inno  
abuil]\\ 6 in acocatu\\ 7 per la sella\\ 8colte di lor\\ 9v  
cavallott\\ 10el uiagg\\ 11al\\ 12a lurez\\ 13in biada\\

14inferri\\\ 15abuss\\\ 16in viagg\\\ 17alorz\\\ [Footnote: This seems to be the beginning of a letter, but only the first words of the lines have been preserved, the leaf being torn down the middle. No translation is possible.]

1362.

And so may it please our great Author that I may demonstrate the nature of man and his customs, in the way I describe his figure.

[Footnote: A preparatory note for the passage given as No. 798, 11. 41--42.]

1363.

This writing distinctly about the kite seems to be my destiny, because among the first recollections of my infancy, it seemed to me that, as I was in my cradle, a kite came to me and opened my mouth with its tail, and struck me several times with its tail inside my lips.

[Footnote: This note probably refers to the text No. 1221.]

1364.

[When I did well, as a boy you used to put me in prison. Now if I do

it being grown up, you will do worse to me.]

1365.

Tell me if anything was ever done.

1366.

Tell me if ever I did a thing which me ....

1367.

Do not reveal, if liberty is precious to you; my face is the prison  
of love.

[Footnote: This note seems to be a quotation.]

1368.

Maestro Leonardo of Florence.

[Footnote: So Leonardo writes his name on a sheet with sundry short  
notes, evidently to try a pen. Compare the signature with those in  
Nos. 1341, 1348 and 1374 (see also No. 1346, l. 33). The form  
"Lionardo" does not occur in the autographs. The Portrait of the  
Master in the Royal Library at Turin, which is reproduced--slightly



diminished--on Pl. I, has in the original two lines of writing underneath; one in red chalk of two or three words is partly effaced: lionardo it... lm (or lai?); the second written in pencil is as follows: fatto da lui stesso assai vecchio. In both of these the writing is very like the Master's, but is certainly only an imitation.]

Notes bearing Dates (1369--1378).

1369.

The day of Santa Maria della Neve [of the Snows] August the 2nd 1473. [Footnote: W. An. I. 1368. 1369. This date is on a drawing of a rocky landscape. See Chronique des Arts 1881 no. 23: Leonard de Vinci a-t-il ete au Righi le 5 aout 1473? letter by H. de Geymuller. The next following date in the MSS. is 1478 (see No. 663).

1370.

On the 2nd of April 1489, book entitled 'Of the human figure'. [Footnote: While the letters in the MS. notes of 1473 and 1478 are very ornate, this note and the texts on anatomy on the same sheet (for instance No. 805) are in the same simple hand as we see on Pl. CXVI and CXIX. No 1370 is the only dated note of the years between 1480 and 1489, and the characters are in all essential points

identical with those that we see in the latest manuscripts written in France (compare the facsimiles on Pl. CXV and p. 254), so that it is hardly possible to determine exactly the date of a manuscript from the style of the handwriting, if it does not betray the peculiarities of style as displayed in the few notes dated previous to 1480.--Compare the facsimile of the manuscripts 1479 on Pl.LXII, No. 2; No. 664, note, Vol. I p. 346. This shows already a marked simplicity as compared with the calligraphy of 1478.

The text No. 720 belongs to the year 1490; No. 1510 to the year 1492; No. 1459, No. 1384 and No. 1460 to the year 1493; No. 1463, No. 1517, No. 1024, 1025 and 1461 to the year 1494; Nos. 1523 and 1524 to the year 1497.

1371.

On the 1st of August 1499, I wrote here of motion and of weight.

[Footnote:1371. Scrisse qui. Leonardo does not say where; still we may assume that it was not in Milan. Amoretti writes, *Memorie Storiche*, chap. XIX: Sembra pertanto che non nel 1499 ma nel 1500, dopo il ritorno e la prigionia del duca, sia da qui partito Leonardo per andare a Firenze; ed è quindi probabile, che i mesi di governo nuovo e incerto abbia passati coll' amico suo Francesco Melzi a Vaprio, ove meglio che altrove studiar potea la natura, e soprattutto le acque, e l'Adda specialmente, che già era stato

l'oggetto delle sue idrostatiche ricerche. At that time Melzi was only six years of age. The next date is 1502; to this year belong No. 1034, 1040, 1042, 1048 and 1053. The note No. 1525 belongs to the year 1503.]

1372.

On the 9th of July 1504, Wednesday, at seven o'clock, died Ser Piero da Vinci, notary at the Palazzo del Podesta, my father, --at seven o'clock, being eighty years old, leaving behind ten sons and two daughters.

[Footnote: This statement of Ser Piero's age contradicts that of the Riassunto della portata di Antonio da Vinci (Leonardo's grandfather), who speaks of Ser Piero as being thirty years old in 1457; and that of the Riassunto della portata di Ser Piero e Francesco, sons of Antonia da Vinci, where Ser Piero is mentioned as being forty in 1469. These documents were published by G. UZIELLI, Ricerche intorno a L. da Vinci, Firenze, 1872, pp. 144 and 146. Leonardo was, as is well known, a natural son. His mother 'La Catarina' was married in 1457 to Acchatabriga di Piero del Vaccha da Vinci. She died in 1519. Leonardo never mentions her in the Manuscripts. In the year of Leonardo's birth Ser Piero married Albiera di Giovanni Amadoci, and after her death at the age of thirty eight he again married, Francesca, daughter of Ser Giovanni Lanfredi, then only fifteen. Their children were Leonardo's

halfbrothers, Antonio (b. 1476), Ser Giuliano (b. 1479), Lorenzo (b. 1484), a girl, Violante (b. 1485), and another boy Domenico (b. 1486); Domenico's descendants still exist as a family. Ser Piero married for the third time Lucrezia di Guglielmo Cortigiani by whom he had six children: Margherita (b. 1491), Benedetto (b. 1492), Pandolfo (b. 1494), Guglielmo (b. 1496), Bartolommeo (b. 1497), and Giovanni (date of birth unknown). Pierino da Vinci the sculptor (about 1520-1554) was the son of Bartolommeo, the fifth of these children. The dates of their deaths are not known, but we may infer from the above passage that they were all still living in 1505.]

1373.

On Wednesday at seven o'clock died Ser Piero da Vinci on the 9th of July 1504.

[Footnote: This and the previous text it may be remarked are the only mention made by Leonardo of his father; Nos. 1526, 1527 and No. 1463 are of the year 1504.]

1374.

Begun by me, Leonardo da Vinci, on the 12th of July 1505.

[Footnote: Thus he writes on the first page of the MS. The title is on the foregoing coversheet as follows: Libro titolato

disstrafformatione coe (cioe) d'un corpo nvn (in un) altro senza  
diminuitione e acresscimento di materia.]

1375.

Begun at Milan on the 12th of September 1508.

[Footnote: No. 1528 and No. 1529 belong to the same year. The text  
Vol. I, No. 4 belongs to the following year 1509 (1508 old style);  
so also does No. 1009.-- Nos. 1022, 1057 and 1464 belong to 1511.]

1376.

On the 9th of January 1513.

[Footnote: No. 1465 belongs to the same year. No. 1065 has the next  
date 1514.]

1377.

The Magnifico Giuliano de' Medici left Rome on the 9th of January  
1515, just at daybreak, to take a wife in Savoy; and on the same day  
fell the death of the king of France.

[Footnote: Giuliano de Medici, brother to Pope Leo X.; see note to  
Nos. 1351-1353. In February, 1515, he was married to Filiberta,

daughter of Filippo, Duke of Savoy, and aunt to Francis I, Louis XII's successor on the throne of France. Louis XII died on Jan. 1st, and not on Jan. 9th as is here stated.-- This addition is written in paler ink and evidently at a later date.]

1378.

On the 24th of June, St John's day, 1518 at Amboise, in the palace of...

[Footnote: Castello del clli. The meaning of this word is obscure; it is perhaps not written at full length.]

XXII.

Miscellaneous Notes.

The incidental memoranda scattered here and there throughout the MSS. can have been for the most part intelligible to the writer only; in many cases their meaning and connection are all the more obscure because we are in ignorance about the persons with whom Leonardo used to converse nor can we say what part he may have played in the various events of his time. Vasari and other early biographers give us a very superficial and far from accurate picture of Leonardo's private life. Though his own memoranda, referring for the most part to incidents of no permanent interest, do not go far

towards supplying this deficiency, they are nevertheless of some importance and interest as helping us to solve the numerous mysteries in which the history of Leonardo's long life remains involved. We may at any rate assume, from Leonardo's having committed to paper notes on more or less trivial matters on his pupils, on his house-keeping, on various known and unknown personages, and a hundred other trifles--that at the time they must have been in some way important to him.

I have endeavoured to make these 'Miscellaneous Notes' as complete as possible, for in many cases an incidental memorandum will help to explain the meaning of some other note of a similar kind. The first portion of these notes (Nos. 1379--1457), as well as those referring to his pupils and to other artists and artificers who lived in his house (1458--1468,) are arranged in chronological order. A considerable proportion of these notes belong to the period between 1490 and 1500, when Leonardo was living at Milan under the patronage of Lodovico il Moro, a time concerning which we have otherwise only very scanty information. If Leonardo did really--as has always been supposed,--spend also the greater part of the preceding decade in Milan, it seems hardly likely that we should not find a single note indicative of the fact, or referring to any event of that period, on the numerous loose leaves in his writing that exist. Leonardo's life in Milan between 1489 and 1500 must have been comparatively uneventful. The MSS. and memoranda of those years seem to prove that it was a tranquil period of intellectual and artistic labour rather

than of bustling court life. Whatever may have been the fate of the MSS. and note books of the foregoing years--whether they were destroyed by Leonardo himself or have been lost--it is certainly strange that nothing whatever exists to inform us as to his life and doings in Milan earlier than the consecutive series of manuscripts which begin in the year 1489.

There is nothing surprising in the fact that the notes regarding his pupils are few and meagre. Excepting for the record of money transactions only very exceptional circumstances would have prompted him to make any written observations on the persons with whom he was in daily intercourse, among whom, of course, were his pupils. Of them all none is so frequently mentioned as Salai, but the character of the notes does not--as it seems to me--justify us in supposing that he was any thing more than a sort of factotum of Leonardo's (see 1519, note).

Leonardo's quotations from books and his lists of titles supply nothing more than a hint as to his occasional literary studies or recreations. It was evidently no part of his ambition to be deeply read (see Nrs. 10, 11, 1159) and he more than once expressly states (in various passages which will be found in the foregoing sections) that he did not recognise the authority of the Ancients, on scientific questions, which in his day was held paramount. Archimedes is the sole exception, and Leonardo frankly owns his admiration for the illustrious Greek to whose genius his own was so



much akin (see No. 1476). All his notes on various authors, excepting those which have already been inserted in the previous section, have been arranged alphabetically for the sake of convenience (1469--1508).

The passages next in order contain accounts and inventories principally of household property. The publication of these--often very trivial entries--is only justifiable as proving that the wealth, the splendid mode of life and lavish expenditure which have been attributed to Leonardo are altogether mythical; unless we put forward the very improbable hypothesis that these notes as to money in hand, outlay and receipts, refer throughout to an exceptional state of his affairs, viz. when he was short of money.

The memoranda collected at the end (No. 1505--1565) are, in the original, in the usual writing, from left to right. Besides, the style of the handwriting is at variance with what we should expect it to be, if really Leonardo himself had written these notes. Most of them are to be found in juxtaposition with undoubtedly authentic writing of his. But this may be easily explained, if we take into account the fact, that Leonardo frequently wrote on loose sheets. He may therefore have occasionally used paper on which others had made short memoranda, for the most part as it would seem, for his use. At the end of all I have given Leonardo's will from the copy of it preserved in the Melzi Library. It has already been printed by Amoretti and by Uzielli. It is not known what has become of the

original document.

Memoranda before 1500 (1379-1413).

1379.

Find Longhi and tell him that you wait for him at Rome and will go with him to Naples; make you pay the donation [Footnote 2: Libro di Vitolone see No. 1506 note.] and take the book by Vitolone, and the measurements of the public buildings. [3] Have two covered boxes made to be carried on mules, but bed-covers will be best; this makes three, of which you will leave one at Vinci. [4] Obtain the..... from Giovanni Lombardo the linen draper of Verona. Buy handkerchiefs and towels,.... and shoes, 4 pairs of hose, a jerkin of... and skins, to make new ones; the lake of Alessandro. [Footnote: 7 and fol. It would seem from the text that Leonardo intended to have instructions in painting on paper. It is hardly necessary to point out that the Art of illuminating was quite separate from that of painting.]

Sell what you cannot take with you. Get from Jean de Paris the method of painting in tempera and the way of making white [Footnote: The mysterious looking words, quite distinctly written, in line 1: ingol, amor a, ilopan a and on line 2: enoiganod al are obviously in cipher and the solution is a simple one; by reading them backwards we find for ingol: logni-probably longi,

evidently the name of a person; for amor a: a Roma, for ilopan a: a Napoli. Leonardo has done the same in two passages treating on some secrets of his art Nos. 641 and 729, the only other places in which we find this cipher employed; we may therefore conclude that it was for the sake of secrecy that he used it.

There can be no doubt, from the tenor of this passage, that Leonardo projected a secret excursion to Naples. Nothing has hitherto been known of this journey, but the significance of the passage will be easily understood by a reference to the following notes, from which we may infer that Leonardo really had at the time plans for travelling further than Naples. From lines 3, 4 and 7 it is evident that he purposed, after selling every thing that was not easily portable, to leave a chest in the care of his relations at Vinci. His luggage was to be packed into two trunks especially adapted for transport by mules. The exact meaning of many sentences in the following notes must necessarily remain obscure. These brief remarks on small and irrelevant affairs and so forth are however of no historical value. The notes referring to the preparations for his journey are more intelligible.]

salt, and how to make tinted paper; sheets of paper folded up; and his box of colours; learn to work flesh colours in tempera, learn to dissolve gum lac, linseed ... white, of the garlic of Piacenza; take 'de Ponderibus'; take the works of Leonardo of Cremona. Remove the small furnace ... seed of lilies and of... Sell the boards of the

support. Make him who stole it, give you the ... learn levelling and how much soil a man can dig out in a day.

1380.

This was done by Leone in the piazza of the castle with a chain and an arrow. [Footnote: This note must have been made in Milan; as we know from the date of the MS.]

1381.

#### NAMES OF ENGINEERS.

Callias of Rhodes, Epimachus the Athenian, Diogenes, a philosopher, of Rhodes, Calcedonius of Thrace, Febar of Tyre, Callimachus the architect, a master of fires. [Footnote: Callias, Architect of Aradus, mentioned by Vitruvius (X, 16, 5).--Epimachus, of Athens, invented a battering-enginee for Demetrius Poliorketes (Vitruvius X, 16, 4).--Callimachus, the inventor of the Corinthian capital (Vitr. IV, I, 9), and of the method of boring marble (Paus. I, 26, 7), was also famous for his casts in bronze (Plin. XXXIV, 8, 19). He invented a lamp for the temple of Athene Polias, on the Acropolis of Athens (Paus. I, 26, 7)--The other names, here mentioned, cannot be identified.]

1382.

Ask maestro Lodovico for 'the conduits of water'. [Footnote:  
Condotti d'acqua. Possibly a book, a MS. or a map.]

1383.

... at Pistoja, Fioravante di Domenico at Florence is my most  
beloved friend, as though he were my [brother]. [Footnote: On the  
same sheet is the text No. 663.]

1384.

On the 16th day of July.

Caterina came on 16th day of July, 1493.

Messer Mariolo's Morel the Florentin, has a big horse with a fine  
neck and a beautiful head.

The white stallion belonging to the falconer has fine hind quarters;  
it is behind the Comasina Gate.

The big horse of Cermonino, of Signor Giulio. [Footnote: Compare  
Nos. 1522 and 1517. Caterina seems to have been his housekeeper.]

1385.

OF THE INSTRUMENT.

Any one who spends one ducat may take the instrument; and he will not pay more than half a ducat as a premium to the inventor of the instrument and one grosso to the workman every year. I do not want sub-officials. [Footnote: Refers perhaps to the regulation of the water in the canals.]

1386.

Maestro Giuliano da Marliano has a fine herbal. He lives opposite to Strami the Carpenters. [Footnote: Compare No. 616, note. 4. legnamiere (milanese dialect) = legnajuolo.]

1387.

Christofano da Castiglione who lives at the Pieta has a fine head.

1388.

Work of ... of the stable of Galeazzo; by the road of Brera  
[Footnote 4: Brera, see No. 1448, II, 13]; benefice of Stanghe  
[Footnote 5: Stanghe, see No. 1509.]; benefice of Porta Nuova;  
benefice of Monza; Indaco's mistake; give first the benefices; then  
the works; then ingratitude, indignity and lamentations.

1389.

Chiliarch--captain of 1000.

Prefects--captains.

A legion, six thousand and sixty three men.

1390.

A nun lives at La Colomba at Cremona; she works good straw plait, and a friar of Saint Francis. [Footnote: La Colomba is to this day the name of a small house at Cremona, decorated with frescoes.]

1391.

Needle,--Niccolao,--thread,--Ferrando, -Iacopo

Andrea,--canvas,--stone,--colours, --brushes,--pallet,--sponge,--the panel of the Duke.

1392.

Messer Gian Domenico Mezzabarba and Messer Giovanni Francesco Mezzabarba. By the side of Messer Piero d'Anghiera.

1393.

Conte Francesco Torello.

1394.

Giuliano Trombetta,--Antonio di Ferrara, --Oil of .... [Footnote:  
Near this text is the sketch of a head drawn in red chalk.]

1395.

Paul was snatched up to heaven. [Footnote: See the facsimile of this  
note on Pl. XXIII No. 2.]

1396.

Giuliano da Maria, physician, has a steward without hands.

1397.

Have some ears of corn of large size sent from Florence.

1398.

See the bedstead at Santa Maria. Secret.



1399.

Arrigo is to have 11 gold Ducats. Arrigo is to have 4 gold ducats in the middle of August.

1400.

Give your master the instance of a captain who does not himself win the victory, but the soldiers do by his counsels; and so he still deserves the reward.

1401.

Messer Pier Antonio.

1402.

Oil,--yellow,--Ambrosio,--the mouth, --the farmhouse.

1403.

My dear Alessandro from Parma, by the hand of ...

1404.

Giovannina, has a fantastic face,--is at Santa Caterina, at the

Hospital. [Footnote: Compare the text on the same page: No. 667.]

1405.

24 tavole make 1 perch. 4 trabochi make 1 tavola. 4 braccia and a half make a trabocco. A perch contains 1936 square braccia, or 1944.

1406.

The road of Messer Mariolo is  $13 \frac{1}{4}$  braccia wide; the House of Evangelista is 75.

It enters  $7 \frac{1}{2}$  braccia in the house of Mariolo. [Footnote: On this page and that which faces it, MS.I2 71a, are two diagrams with numerous reference numbers, evidently relating to the measurements of a street.]

1407.

I ask at what part of its curved motion the moving cause will leave the thing moved and moveable.

Speak to Pietro Monti of these methods of throwing spears.

1408.

Antonio de' Risi is at the council of Justice.

1409.

Paolo said that no machine that moves another .... [Footnote: The passage, of which the beginning is here given, deals with questions in mechanics. The instances in which Leonardo quotes the opinions of his contemporaries on scientific matters are so rare as to be worth noticing. Compare No. 901. ]

1410.

Caravaggio. [Footnote: Caravaggio, a village not far from the Adda between Milan and Brescia, where Polidoro and Michelangelo da Caravaggio were born. This note is given in facsimile on Pl. XIII, No. 1 (above, to the left). On Pl. XIII, No. 2 above to the right we read cerovazo.]

1411.

Pulleys,--nails,--rope,--mercury,--cloth, Monday.

1412.

MEMORANDUM.

Maghino, Speculus of Master Giovanni the Frenchman; Galenus on utility.

1413.

Near to Cordusio is Pier Antonio da Tossano and his brother Serafino. [Footnote: This note is written between lines 23 and 24 of the text No. 710. Corduso, Cordusio (curia ducis) = Cordus in the Milanese dialect, is the name of a Piazza between the Via del Broletto and the Piazza de' Mercanti at Milan.. In the time of il Moro it was the centre of the town. The persons here named were members of the noble Milanese family de'Fossani; Ambrogio da Possano, the contemporary painter, had no connection with them.]

1414.

Memoranda after 1500 (1414--1434)

1414.

Paul of Vannochio at Siena ... The upper chamber for the apostles.

[4] Buildings by Bramante.

The governor of the castle made a prisoner.

[6] Visconti carried away and his son killed. [Footnote 6: Visconti. Chi fosse quel Visconte non sapremmo indovinare fra tanti di questo nome. Arluno narra che allora atterrate furono le case de' Viconti, de' Castiglioni, de' Sanseverini, e de' Botta e non è improbabile che ne fossero insultati e morti i padroni. Molti Visconti annovera lo stesso Cronista che per essersi rallegrati del ritorno del duca in Milano furono da' Francesi arrestati, e strascinati in Francia come prigionieri di stato; e fra questi Messer Francesco Visconti, e suo figliuolo Battista. (AMORETTI, Mem. Stor. XIX.)]

Giovanni della Rosa deprived of his money.

Borgonzio began ....; and moreover his fortunes fled. [Footnote 8: Borgonzio o Brugonzio Botta fu regolatore delle ducali entrate sotto il Moro, alla cui fuga la casa sua fu pur messa a sacco da' partitanti francesi. (AMORETTI, l. c.)]

The Duke has lost the state, property and liberty and none of his enterprises was carried out by him.

[Footnote: 1. 4--10 This passage evidently refers to events in Milan at the time of the overthrow of Ludovico il Moro. Amoretti published it in the 'Memorie Storiche' and added copious notes.]

1415.

Ambrosio Petri, St. Mark, 4 boards for the window, 2 ..., 3 the saints of chapels, 5 the Genoese at home.

1416.

Piece of tapestry,--pair of compasses,-- Tommaso's book,--the book of Giovanni Benci,--the box in the custom-house,--to cut the cloth,--the sword-belt,--to sole the boots, --a light hat,--the cane from the ruined houses,--the debt for the table linen, --swimming-belt,--a book of white paper for drawing,--charcoal.--How much is a florin ...., a leather bodice.

1417.

Borges shall get for you the Archimedes from the bishop of Padua, and Vitellozzo the one from Borgo a San Sepolcro [Footnote 3: Borgo a San Sepolcro, where Luca Paciolo, Leonardo's friend, was born.]

[Footnote: Borges. A Spanish name.]

1418.

Marzocco's tablet.

1419.

Marcello lives in the house of Giacomo da Mengardino.

1420.

Where is Valentino?--boots,--boxes in the custom-house,...,--[Footnote 5: Carmine. A church and monastery at Florence.] the monk at the Carmine,--squares,--[Footnotes 7 and 8: Martelli, Borgherini; names of Florentine families. See No. 4.] Piero Martelli,--[8] Salvi Borgherini,--send back the bags,--a support for the spectacles,--[Footnote 11: San Gallo; possibly Giuliano da San Gallo, the Florentine architect.] the nude study of San Gallo,--the cloak. Porphyry,--groups,--square,--[Footnote 16: Pandolfini, see No. 1544 note.] Pandolfino. [Footnote: Valentino. Cesare Borgia is probably meant. After being made Archbishop of Valence by Alexander VI he was commonly called Valentinus or Valentino. With reference to Leonardo's engagements by him see pp. 224 and 243, note.]

1421.

Concave mirrors; philosophy of Aristotle;[Footnote 2: Avicenna (Leonardo here writes it Avinega) the Arab philosopher, 980-1037, for centuries the unimpeachable authority on all medical questions. Leonardo possibly points here to a printed edition: Avicennae canonum libri V, latine 1476 Patavis. Other editions are, Padua 1479, and Venice 1490.] the books of Avicenna Italian and Latin

vocabulary; Messer Ottaviano Palavicino or his Vitruvius [Footnote 3: Vitruvius. See Vol. I, No. 343 note.]. bohemian knives; Vitruvius[Footnote 6: Vitruvius. See Vol. I, No. 343 note.]; go every Saturday to the hot bath where you will see naked men;

'Meteora' [Footnote 7: Meteora. See No. 1448, 25.],

Archimedes, on the centre of gravity; [Footnote 9: The works of Archimedes were not printed during Leonardo's life-time.] anatomy [Footnote 10: Compare No. 1494.] Alessandro Benedetto; The Dante of Niccolo della Croce; Inflate the lungs of a pig and observe whether they increase in width and in length, or in width diminishing in length.

[Footnote 14: Johannes Marliani sua etate philosophorum et medicorum principis et ducalis phisic. primi de proportione motuum velocitate questio subtilissima incipit ex ejusdem Marliani originali feliciter extracta, M(ilano) 1482.

Another work by him has the title: Marlianus mediolanensis. Questio de caliditate corporum humanorum tempore hiemis ed estatis et de antiparistasi ad celebrem philosophorum et medicorum universitatem ticinensem. 1474.] Marliano, on Calculation, to Bertuccio.

Albertus, on heaven and earth [Footnote 15: See No. 1469, 1. 7.], [from the monk Bernardino]. Horace has written on the movements of the heavens.



[Footnote: Filosofia d'Aristotele see No. 1481 note.]

1422.

Of the three regular bodies as opposed to some commentators who disparage the Ancients, who were the originators of grammar and the sciences and ...

1423.

The room in the tower of Vaneri.

[Footnote: This note is written inside the sketch of a plan of a house. On the same page is the date 1513 (see No. 1376).]

1424.

The figures you will have to reserve for the last book on shadows that they may appear in the study of Gerardo the illuminator at San Marco at Florence.

[Go to see Melzo, and the Ambassador, and Maestro Bernardo].

[Footnote: L. 1-3 are in the original written between lines 3 and 4 of No. 292. But the sense is not clear in this connection. It is

scarcely possible to devine the meaning of the following sentence.

2. 3. Gherardo Miniatore, a famous illuminator, 1445-1497, to whom Vasari dedicated a section of his Lives (Vol. II pp. 237-243, ed. Sansoni 1879).

5. Bernardo, possibly the painter Bernardo Zenale.]

1425.

Hermes the philosopher.

1426.

Suisset, viz. calculator,--Tisber, --Angelo Fossobron,--Alberto.

1427.

The structure of the drawbridge shown me by Donnino, and why c and d thrust downwards.

[Footnote: The sketch on the same page as this text represents two poles one across the other. At the ends of the longest are the letter c and d. The sense of the passage is not rendered any clearer.]

1428.

The great bird will take its first flight;-- on the back of his  
great swan,--filling the universe with wonders; filling all writings  
with his fame and bringing eternal glory to his birthplace.

[Footnote: This seems to be a speculation about the flying machine  
(compare p. 271).]

1429.

This stratagem was used by the Gauls against the Romans, and so  
great a mortality ensued that all Rome was dressed in mourning.

[Footnote: Leonardo perhaps alludes to the Gauls under Brennus, who  
laid his sword in the scale when the tribute was weighed.]

1430.

Alberto da Imola;--Algebra, that is, the demonstration of the  
equality of one thing to another.

1431.

Johannes Rubicissa e Robbia.

1432.

Ask the wife of Biagio Crivelli how the capon nurtures and hatches the eggs of the hen,--he being drunk.

1433.

The book on Water to Messer Marco Antonio.

[Footnote: Possibly Marc-Antonio della Torre, see p. 97.]

1434.

Have Avicenna's work on useful inventions translated; spectacles with the case, steel and fork and...., charcoal, boards, and paper, and chalk and white, and wax;.... .... for glass, a saw for bones with fine teeth, a chisel, inkstand ..... three herbs, and Agnolo Benedetto. Get a skull, nut,--mustard.

Boots,--gloves, socks, combs, papers, towels, shirts,.... shoe-tapes,--..... shoes, penknife, pens. A skin for the chest.

[Footnote: 4. Lapis. Compare Condivi, Vita di Michelagnolo Buonarotti, Chap. XVIII.: Ma egli (Michelangelo) non avendo che mostrare, prese una penna (percioche in quel tempo il lapis non era in uso) e con tal leggiadria gli dipinse una mano ecc. The incident

is of the year 1496.--Lapis means pencil, and chalk (matita).

Between lines 7 and 8 are the texts given as Nos. 819 and No. 7.]

Undated memoranda (1435-1457).

1435.

The book of Piero Crescenze,--studies from the nude by Giovanni Ambrosio,--compasses, --the book of Giovanni Giacomo.

1436.

MEMORARDUM.

To make some provisions for my garden, --Giordano, De Ponderibus[Footnote 3: Giordano. Jordanus Nemorarius, a mathematician of the beginning of the XIIIth century. No particulars of his life are known. The title of his principal work is: *Arithmetica decem libris demonstrata*, first published at Paris 1496. In 1523 appeared at Nuremberg: *Liber Jordani Nemorarii de ponderibus, propositiones XIII et earundem demonstrationes, multarumque rerum rationes sane pulcherrimas complectens, nunc in lucem editus.*],--the peacemaker, the flow and ebb of the sea,--have two baggage trunks made, look to Beltraffio's [Footnote 6: Beltraffio, see No. 465, note 2.

There are sketches by the side of lines 8 and 10.] lathe and have taken the stone,--out leave the books belonging to Messer Andrea the German,-- make scales of a long reed and weigh the substance when hot and again when cold. The mirror of Master Luigi; A b the flow and ebb of the water is shown at the mill of Vaprio,--a cap.

1437.

Giovanni Fabre,--Lazaro del Volpe,-- the common,--Ser Piero.

[Footnote: These names are inserted on a plan of plots of land adjoining the Arno.]

1438.

[Lactantius], [the book of Benozzo], groups,--to bind the book,--a lantern,--Ser Pecantino,--Pandolfino.--[Rosso]--a square, --small knives,--carriages,--curry combs-- cup.

1439.

Quadrant of Carlo Marmocchi,--Messer Francesco Araldo,--Ser Benedetto d'Accie perello,--Benedetto on arithmetic,--Maestro Paulo, physician,--Domenico di Michelino,-- ..... of the Alberti,--Messer Giovanni Argimboldi.

1440.

Colours, formula,--Archimedes,--Marcantonio.

Tinned iron,--pierced iron.

1441.

See the shop that was formerly Bartolommeo's, the stationer.

[Footnote: 6. Marc Antonio, see No. 1433.]

1442.

The first book is by Michele di Francesco Nabini; it treats on science.

1443.

Messer Francesco, physician of Lucca, with the Cardinal Farnese.

[Footnote: Alessandro Farnese, afterwards Pope Paul III was created in 1493 Cardinal di San Cosimo e San Damiano, by Alexander VI.]

1444.

Pandolfino's book [Footnote 1: Pandolfino, Agnolo, of Florence. It is to this day doubtful whether he or L. B. Alberti was the author of the famous work 'Del Governo della Famiglia'. It is the more probable that Leonardo should have meant this work by the words il libro, because no other book is known to have been written by Pandolfino. This being the case this allusion of Leonardo's is an important evidence in favour of Pandolfino's authorship (compare No. 1454, line 3).],--knives,--a pen for ruling,--to have the vest dyed,--The library at St.-Mark's,--The library at Santo Spirito,--Lactantius of the Daldi [Footnote 7: The works of Lactantius were published very often in Italy during Leonardo's lifetime. The first edition published in 1465 "in monastero sublacensi" was also the first book printed in Italy.],--Antonio Covoni,--A book by Maestro Paolo Infermieri, --Boots, shoes and hose,--(Shell)lac, --An apprentice to do the models for me. Grammar, by Lorenzo de Medici,--Giovanni del Sodo,--Sansovino, [Footnote 15: Sansovino, Andrea--the sculptor; 1460-1529.],--a ruler,--a very sharp knife,--Spectacles,--fractions....., --repair.....,--Tomaso's book,-- Michelagnolo's little chain; Learn the multiplication of roots from Maestro Luca;--my map of the world which Giovanni Benci has [Footnote 25: Leonardo here probably alludes to the map, not executed by him (See p. 224), which is with the collection of his MSS. at Windsor, and was published in the Archaeologia Vol. XI (see p. 224).];-Socks,--clothes from the customhouse-officier,--Red Cordova leather,--The map of the world,



of Giovanni Benci,--a print, the districts about Milan--Market book.

Get the Friar di Brera to show you [the book] 'de Ponderibus'

[Footnote 11: Brera, now Palazzo delle Scienze ed Arti. Until 1571 it was the monastery of the order of the Umiliati and afterwards of the Jesuits.

De ponderibus, compare No. 1436, 3.],--

Of the measurement of San Lorenzo,--

I lent certain groups to Fra Filippo de Brera, [Footnote 13:

Brera, now Palazzo delle Scienze ed Arti. Until 1571 it was the monastery of the order of the Umiliati and afterwards of the Jesuits.

De ponderibus, compare No. 1436, 3.],--

Memorandum: to ask Maestro Giovannino as to the mode in which the tower of Ferrara is walled without loopholes,--

Ask Maestro Antonio how mortars are placed on bastions by day or by night,--

Ask Benedetto Portinari how the people go on the ice in Flanders,--

On proportions by Alchino, with notes by Marliano, from Messer Fazio,--

The measurement of the sun, promised me by Maestro Giovanni, the Frenchman,--

The cross bow of Maestro Gianetto,--

The book by Giovanni Taverna that Messer Fazio,--

You will draw Milan [21],--

The measurement of the canal, locks and supports, and large boats; and the expense,--

Plan of Milan [Footnote 23: Fondamento is commonly used by Leonardo to mean ground-plan. See for instance p. 53.],--

Groups by Bramante [Footnote 24: Gruppi. See Vol. I p. 355, No. 600, note 9.],--

The book on celestial phenomena by Aristoteles, in Italian [Footnote 25: Meteora. By this Leonardo means no doubt the four books. He must refer here to a MS. translation, as no Italian translation is known to have been published (see No. 1477 note).],--