Materialien

Heft 7

Andreas Grote

Materialien zur Geschichte des Sammelns

Zwei Vorträge in Israel 1982 + 1983

(Two Lectures In Israel 1982 +'83)

aus dem Institut für Museums-kunde

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Inhalt

Vorbemerkung

Die "Materialien aus dem Institut für Museumskunde Berlin" sind eine in loser Folge erscheinende Sammlung von Zwischenberichten aus der Arbeit des Instituts. Sie erscheinen in unterschiedlicher Auflage und werden nicht über den Buchhandel vertrieben. Jedes Heft stellt also eine unabhängige Einheit dar, die gelegentlich recht bald durch aktuellere Informationen ersetzt werden kann und muß.

Im Folgenden werden als "Materialien" zwei Vorträge gedruckt vorgelegt, welche in den Jahren 1982 und 1983 in Israel gehalten worden sind. Das Jahr 1982 markiert die Gründung der ISRAEL SOCIETY FOR MEDIEVAL AND RENAISSANCE STUDIES, und der Verfasser ist stolz darauf, als einziger auswärtiger Referent zu der Gründungsveranstaltung eingeladen worden zu sein.

Beide Vorträge haben direkt oder indirekt mit der Geschichte des Museumswesens zu tun. Der erste mit dem Titel "Kunst und Wissenschaft im Dienste der Legitimation" versucht einen Aspekt der Kulturlandschaft Florenz nach 1538 herauszuarbeiten, der bisher in der Beurteilung der großen Leistungen des späteren Großherzogs Cosimo I.de'Medici vielleicht etwas zu kurz gekommen ist. Die Ausnahmen werden in den Fußnoten hervorgehoben. Der junge Herrscher hat in einer bewußten Anstrengung gesucht, seine Legitimation und die seiner Familie nicht nur auf politischem, sondern auch auf wissenschaftlichem und künstlerischem Gebiet unter Beweis zu stellen bezw. zu etablieren. Hierbei nahm er sich von Anfang an den römischen Kaiser Octavianus Augustus (30 v.-14 n.Chr.) zum Leitbild. Es wird in den Ausführungen u.a. versucht, eine "interne", d.h. auf Florenz gerichtete persönliche Legitimationsebene von einer zweiten "externen", außenpolitischen zu differenzieren. Die in der Tat auffälligen Parallelen zwischen Augustus und Cosimo I. haben zweifellos die letzteren Zwecke unterstützt. Später sind solche Anspielungen von vielen europäischen Herrschern in Anspruch genommen worden, so z.B. durch Kaiser Karl VI, dem Auftraggeber Fischer von Erlach's.

Sammlungen unter anderem von Pretiosen haben - soweit sie dem im 15. Jahrhundert begründeten Fideikommiss Medici angehörten - legitimatorisch eine wichtige Rolle zu spielen gehabt, wenn es

darum ging, die Kontinuität des Anspruches auf Dominanz über ein Gemeinwesen wie Florenz unter Beweis zu stellen.

Der zweite Vortrag von 1983 zu dem Thema "Ein System für die Schöpfung" beschäftigt sich - dem Thema eher essayistisch zu Leibe rückend - mit der Weltschau des Wissenschaftsbetriebes in Florenz um 1570, wie sie sich programmatisch in der ikonographischen Systematik des sogenannten "Stanzino" (nicht: Studiolo!) "del Principe" niederschlug, das der Sohn und Nachfolger Cosimo's I., Prinz Francesco I.de'Medici sich durch Giorgio Vasari im Palazzo Ducale (=Palazzo Vecchio) hat einrichten lassen, um dort seine Sammlungen, eine frühe Kunst- und Wunderkammer, unterzubringen.

Insbesondere beschäftigt sich der Vortrag schließlich mit der Deutung des "Schlüssel"-Bildes in der Wölbung des kleinen Raumes, das von Francesco Morandini da Poppi geschaffen worden ist. Zum ersten Mal wird hier eine in die Tiefe gehende Deutung der auf den ersten Blick sehr widersprüchlichen und komplexen Darstellung versucht, indem gnostisch-neoplatonische Texte aus dem 4.Jahrhundert n.Chr. herangezogen werden, die durch die Forschung bisher offenbar noch keine Berücksichtigung gefunden haben, obwohl sie in Florenz mindestens seit 100 Jahren vor der Entstehung des Bildes bekannt und weit verbreitet waren.

Aus naheliegenden Gründen wurden die Vorträge in englischer Sprache, der "lingua franca" Israels, verfaßt und gesprochen. Ich habe darauf verzichtet, die gelegentlich recht pointierten Texte ins Deutsche zu übersetzen, stelle aber jedem Vortrag ein deutschsprachiges Resümee voran.

Im Dezember
1983

ART AND SCIENCE IN THE SERVICE OF LEGITIMATION

A Case Study in Florence in the 16th Century

Kunst und Wissenschaft im Dienste der Legitimation.

Zusammenfassung

Der Vortrag fügt sich ein in das Generalthema des ersten Treffens der ISRAEL SOCIETY FOR MEDIEVAL AND RENAISSANCE STUDIES welches lautete: "The Image Of The Ruler".

Zunächst werden die politischen Vorgaben erläutert, unter denen es möglich war, daß die Medici, die im 15.Jahrhundert in Florenz die Fäden der Macht in der Hand gehalten hatten, nach der Niederlage der letzten Republik als Herzöge und Lehensnehmer Kaiser Karls V. wieder an die Macht kamen. Der letzte, allerdings illegitime Sproß des Familienzweiges, welcher im vorhergehenden Jahrhundert so mächtig gewesen war, ist im Januar 1537 ermordet worden. Cosimo I., aus einem anderen Zweig (Trebbio) stammend, wurde 18jährig Herzog.

Der legitimatorische Druck auf den jungen Herzog war beträchtlich. Zwar halfen eine Reihe schneller militärischer Erfolge, aber der Kaiser wollte seine Tochter Margareta, die Witwe des Vorgängers, nicht mit Cosimo verheiraten; die finanziellen Verpflichtungen gegenüber dem Kaiser wurden bedrückend.

So sucht Cosimo I. nicht allein außen-, sondern auch innenpolitisch nach Motiven, die ihn und den Herrschaftsanspruch seiner Familie legitimieren konnten.

Außenpolitisch gab es mehrere Schauplätze. Der eine war das Reichskammergericht in Regensburg, vor dem die Vertreter der Toskana sich in jahrzehntelangen Prozessen das Recht der Präzedenz vor anderen italienischen Höfen zu erkämpfen suchten. Das nächste betraf das Verhältnis zum Vatikan - die systematische Pflege der Beziehungen zum Papst mündete schließlich in der Krönung zum Großherzog durch Pius V. (1569/70); alles dieses wurde begleitet von aufwendigen politischen Bildprogrammen, die Florenz zum neuen Rom, den Herzog zu einem Nachfolger des Octavianus Augustus stilisierten.

Cosimo nahm nach 1540 bewußt die Fäden und Motive wieder auf, die die ihn mit den Aktivitäten der Medici im 15.Jahrhundert verbinden konnten. Es kam innenpolitisch darauf an, gegenüber den Florentinern die Legitimität der Erbfolge immer wieder abzusichern. Die großen Bilderzyklen im Palazzo Ducale (Vecchio) dienten vor allem diesem Zweck.

Die Ikonographie der Bildzyklen wird entsprechend eingeordnet, die Frage nach den Beratern vor Vasari und Vincenzo Borghini wird gestellt.

Eine wichtige Rolle bei der Legitimierung der neuen Herrscher spielte die Sicherung der Kontinuität des Fideikommiss Medici, und da vor allem der Sammlung an Preziosen. Es war in diesem Sinne ein schwerer Rückschlag, daß Margareta ab Austria, die Witwe des ermordeten Alessandro, eine Gruppe von Objekten aus Florenz mit sich nahm, die den Sammlernamen des Lorenzo il Magnifico (+ 1492) trugen und im 15.Jahrhundert prägend auf den Figurenschmuck des Palazzo Medici eingewirkt hatten. Diese Gemmen und Kameen befinden sich heute als Nachlaß der Farnese in Neapel (" Tazza Farnese ").

Schließlich geht der Vortragende auf das zeitgenössische Fürstenbild ein, wie es sich aus den Bezügen zu Augustus entwickelte.

A Case Study in Florence in the 16th Century

I think it is fitting in this occasion[+)] to once again pay tribute to the eminent scholarship of Ernst H.Kantorowicz (+1963), whose spirit - I am sure - is alive also in this meeting; his masterly work on the legal, political and theological phenomenon of The King's Two Bodies[1)] has at its time been an eye-opener also for art historians, and I must confess: for me. Consequently what I will have to tell you tonight is deeply indebted to his kind of approach, but also others will recognize the weight of their own contributions to this case study as I go along, even if I do not mention all of them expressly.

My contribution tonight is indeed concerned with the Image of Rulers; I will make some observations on how letters, arts and sciences have been employed into the service of legitimation of one newcomer to the ruling families in Italy in the 16th century, and therefore under special pressure of legitimation, namely Cosimo de'Medici, second duke and first - but this is a matter of dispute - grand duke of Tuscany, who reigned from 1537 to 1574.

Carlo Ragghianti, the well-known Italian art critic, a short while ago has put down some pungent remarks on the Florentine situation after the middle of the 16th century (I translate from the Italian): "Particularly between 1554, i.e. immediately after Vasari had gained himself European fame as the first biographer of artists, and 1574, under the patronage of Cosimo I. who intuitively had understood the possibilities that literary fame offered for enhancing his house and the public domain, Florence became a Fontainebleau on a bloated and universal scale, oppressingly and nearly overwhelmingly so, without

however the aristocracy of the grand French model, on the level of second or third rate provincialism..." [2]

These remarks of course overshoot the mark and they are centered perhaps a little too much on the person of Vasari. In fact it might be stated that the intentional (not intuitive !) copying of a model offered by the activities of the French king François Ier (who had died already in 1547), and again after his death, long before Vasari had made his fateful entrance as the chief artistic impresario for Cosimo which happened as it were in 1554, is a phenomenon connected not so much with Vasari as with the person of the duke himself, and it has to do primarily with legitimation of a ruler.

Allow me to briefly outline the political situation in Florence as it presented itself before and after Cosimo's coming into power.

Already on 29 June 1529 the treaty of Barcelona had insured the eventual return of the Medici to Florence. Alessandro de'Medici, the immediate predecessor of Cosimo, was a natural, i.e. illegitimate son of Lorenzo, the only offspring of Piero (who in later years was nicknamed "the Unfortunate"), who in 1494 had had himself expelled from Florence and who in 1504 had bravely but miserably died at Garigliano. Lorenzo "duke of Urbino"[3] was a not too successful soldier and had after Giuliano's - the "duc de Nemours'"[4] - short intermezzo been governor of Florence for pope Leo X. and later "general of the church". His uncle Leo X. had desperately tried to get him the duchy of Urbino but in the end there remained only a title, which later passed on to his only legitimate child Caterina de'Medici, who as a queen of France was to gain European notoriety and fame.

Alessandro, whose lineage - as we have seen - was not untainted, had eventually gained the status of a nobleman. His near relation, the later pope Clemens VII. (the historical "grapevine" has it that the later pope had fathered him with a circassian slave - hence his negroid aspect in some representations[5]) had procured for him title and duchy of Penne[5a] (near Pescara, then belonging to the kingdom of Naples), and when he was ruler in Florence emperor Charles V. had first conferred on him the title of "capo della repubblica"[6], and since 1532 he is "duca" of Florence[7]; as such he became eligible for Margareta ab Austria, illegitimate daughter of the emperor[8]. She was married to Alessandro in the presence of her father in Naples and Capuana in 1536; the girl then was only thirteen years old! The bridegroom had to bind over all the Medici family possessions in order to underwrite or guarantee Margareta's dowry. A little more than half a year later, after a visit of the emperor to Florence[9] and Margareta's entry[10] Alessandro in January 1537 is assassinated by a distant cousin, Lorenzino de'Medici. The start of the Medici family as sovereigns of Tuscany was less than promising, to say the least!

The imperial patent for Alessandro had established succession in the male line. The original, the Caffagiolo branch of the Medici was now extinct. Alessandro left a son and a daughter but alas! they of course were also illegitimate offspring, the mother being a woman from Prato.

The Florentine Council of the Fortyeight that immediately and secretly got together to discuss the new situation and the problems of succession eventually hit on one Cosimo from the collateral branch of Trebbio, a son of Giovanni delle Bande Nere, a brilliant condottiere, who after his death on the battlefield had left his widow - the famous Maria Salviati -

with this one son.

At first Cosimo was installed as governor and ruler, not as "duke of Florence"[11]. The first and most urgent problem immediately became his relation to the emperor. He had to cope with Margareta, the now fourteen-year-old widow of Alessandro. It is - in the light of what was to follow - very understandable that he immediately asked to be allowed to marry her, but Charles V. already had other plans for his daughter. After having retired into the Fortezza da Basso with her imperial counsellors she after a few months took quite formally and officially leave (with a little address which must have caused Cosimo some pains), taking with her not only rights to all Medici possessions (also the territories) but also a consiberable part of the jewels; these were never returned and now adorn the Naples museum: the most prominent piece being the "Tazza Farnese" and a great number of gems and cameos from the collection of Lorenzo il Magnifico (+1492) and bearing his collector's signature[12]. These collections, especially those objects which bore Lorenzo's signature, quite evidently were considered as being part of the legitimating legacy of the "old" Medici, and their loss was sorely felt. The problem of art collections as legitimating media is an interesting one and should be taken under examination by scholarly research.

The chronicler Adriani[13] wrote about this occurrence that Margareta got everything, "she that had come into Florence with barely more than her person." In 1540 the Imperial High Court of Justice at Regensburg ruled on the emperor's orders that Margareta's dowry and its guaranty by the Medici possessions ranked higher than the Medici rights on these normally unalienable properties[14]. Cosimo for the rest of his life has paid

a yearly rent of 7.500 Ducats for the use of his own family's possessions in and around Florence[15)]! As you see, pressing and humiliating questions of legitimation and heavy material and political mortgages lay on this eighteen-year-old new ruler of Florence.

At first, however, he had a rather successful start: the first success was gained on the battlefield. Already on 1.August 1537, half a year after his election as governor of Florence, Cosimo with heavy assistance from imperial troops (which was to cost him enormous additional sums afterwards) succeeded to rout the"fuorusciti", the exiled Florentines, at Montemurlo. They were commanded by Filippo Strozzi. Shortly before that date a political success was gathered: Count Silva de Cifuentes, the imperial envoy plenipotentiary to Italy, had publicly certified that Charles V. now considered Cosimo legitimate heir to Alessandro, so he finally was allowed the title of duke of Florence. The confirming patent however arrived only in September of that year[16)].

But now the mortgages began to press him. At first the emperor was unwilling to hand over the Tuscan fortresses which now were held by his commanders[17)]. The Fortezza da Basso would continue to fly the imperial colours instead of the Florentine ones, and the same was true for all the other strong places in Tuscany. This was - to say the least - mortifying and humiliating and very dangerous for the young ruler since this impaired his authority. After long diplomatic efforts finally in 1543 the fortresses were handed over to Cosimo[18)].

And so it went on. His original pledge to hold steadfastedly with the emperor he held for all his life, but he also had decided that his fortunes lay with the popes. This political reliability

eventually was to bear fruit with the crowning of 1570 with the grandducal crown by Pope Pius V.

Probably from 1540 on another circumstance was to bitter Cosimo's life: the painful question of precedence. It all seems to have started with an incident at Lucca where in the presence of the Emperor a Ferrarese envoy had taken precedence before the Florentines on the grounds that his reigning family was of much more ancient and noble lineage[19]. The Florentine reasoning on that irrefutable fact was nonetheless adamant and is best represented by Ammirato in his foreword to his book on the noble families of Florence: "Florentines and Tuscans have no feudal rights, because the past republics did not tolerate them. Nevertheless if one regards their antiquity they stand equal to the barons in other nations"[20]. The dispute, which today seems a little ridiculous but then was one of the main topics in international diplomacy and protocol, was to occupy the Imperial High Court of Justice for more than one generation. Cosimo's position there was not very strong, because the Farnese pope Paul III. from the start seems to have sided with Ferrara by giving it precedence at his court [21].

Cosimo did not see this question resolved, because it was only after his death that emperor Maximilian accepted the "fait accompli" by finally granting Francesco I., the son and successor, the title of grand duke, which according to protocol implied royal rights and therefore finally eliminated the whole problem.

Getting legitimation on political grounds therefore for Cosimo was a painful, slow and expensive process. In view of the fact that his family quite certainly and openly was considered parvenue by most of the rest of Europe (and in fact it was that!) his effort to employ all artistic and literary activities

towards that one goal becomes very understandable.

It must be said that his instalment as a ruler of Florence was to turn out to have the most far reaching political and cultural consequences for Tuscany in the 16th century.

The young man immediately set out to reform government and administration; in Rudolf von Albertini's book [7] some of these developments can be followed, but we are far from a comprehensive treatment and understanding of this phenomenal personality. It might be said that by the personal effort of Cosimo a modern kind of centralized administration was created which did away with the obsolete remnants of structures which had preserved so much of their medieval characteristics. Well defined ressorts and departments were installed, the Uffizi building itself bears testimony to this new spirit and it is itself part of a demonstrative legitimation for a ruler.

The building of course was also made necessary by the duke's decision to take residence in the Palazzo della Signoria, which before had been the political and administrative heart of the city, even if in the course of the first half of the 16th century some offices had overflowed into adjacent sites. Thus once and for all the traditional family palace of the Caffagiolo branch was abandoned (and Cosimo did not belong to that branch), which the elder Cosimo had had built by Michelozzo in the 15th century. Such a decision was not motivated by personal prestige alone. I like to follow the historiographer Segni[22] when he writes: "...we know not by what motifs moved, with the exception that he (Cosimo) did not want to live in a house which was not his but assigned to the duchess once wife of Alessandro..."

Various sources tell us that the Palazzo Ducale - as it was henceforth named -, whose construction goes back to the years

around 1300, during the various preceding governments and rulers already had undergone considerable interior changes, with new partitions having been drawn, new wings added, new doors opened and so forth. Even if - according to a contemporary letter of Cosimo himself "there are royal rooms" [23] - the accomodation first was considered to be adequate, Cosimo ten years later aquired the Pitti palace and Boboli gardens and began to adapt it as a residence for his family [24].

In the adaptation of the Palazzo "Vecchio" for his own purposes we can discern a first and very intensive attempt of Cosimo to formulate a political program by imagery. Forster has followed up some of the iconographical aspects of this first stage of planning [25]. After all the former Palazzo della Signoria (or "dei Priori") reeked with republicanism which could not have been abolished completely without seriously disturbing the Florentine populace. Amongst the first important group of interventions was the Sala delle Udienze (starting from 1543); this room, which already in 1470 had been gained from the Sala dei Gigli by having Benedetto da Maiano draw a new partition across it [26], was to be decorated with an intricate iconographical program designed by the painter Francesco de'Rossi called Cecchino Salviati (1510-1563). The frescoes center on the mythical figure from Roman antiquity Furius Camillus [27].

Camillus must be considered one of the saviours of Rome and since the second century is being put on the same level as Romulus and Remus. The choice seems to have been Cosimo's own.

In the adjacent Sala dei Gigli eighty years before (before 1484) Domenico Ghirlandaio had painted some blatantly republican themes, and amongst others Furius Camillus appears here together with Mucius Scaevola and Brutus as saviour of the republic.

There was, then, a possibility to take up a traditional and well-known theme and adapt it for actual purposes. Moreover it has recently been pointed out by Cecchi and Allegri that in occasion of the festivities for the ascension of Giovanni di Lorenzo de'Medici to the Holy See as pope Leo X. on 23 June 1514 a "Trionfo" was celebrated in Florence with its program centered on the figure of Camillus and his achievements [28].

The iconographical contents of this brilliantly painted but in parts rather baldly preserved pictorial cycle are still being studied [29], but after all I have told you up to now it is clear that for Cosimo the allegories and other allusions must needs be of programmatical nature: the "Triumph of Camillus" after the conquest of Veji (ca 396 B.C.) is certainly allusive to the duke's victory at Montemurlo. Hopefully - and in a very prominent location within the program -, Camillus is shown how he stops the weighing of gold which the Celts and the Romans had agreed upon in order to avoid a sacking of Rome; this episode might be indicative of the duke's hope to eventually liberate himself of the financial burdens he had to carry in relation to the emperor. The traitorous schoolmaster of Falerii is being punished, Camillus is shown while dedicating a sanctuary, various virtues as charity and strength, hope and faith appear, various allegorical representations show "Time Taking Occasion by it's Hair", or "Peace Burning Arms" etc. [30]

Very much in evidence, however, is the zodiacal sign of Capricorn which Cosimo had adopted upon coming into power. It is mentioned by various ancient and modern writers that this zodiacal sign is identical with the one used by Octavianus Augustus, the Roman emperor[31]. It is an indication of no little aspirations that Cosimo decided to employ this sign, since among contemporary

rulers none less than emperor Charles V. used it and, it might be added, still in the 18th century emperor Charles VI. in Vienna (the patron of Fischer von Erlach), also with marked allusions to Augustus [32].

Initially I had mentioned Kantorowicz' work on "The King's Two Bodies". This might be an occasion to note that some of this phenomenon can be discerned also in our case: Cosimo quite evidently has employed a double set of "imprese" or devices. The Capricorne quite clearly was to be read as a symbol for his g o v e r n m e n t and its fortunes. It demonstrated his decision to model this government on ideals offered by Roman Antiquity, and on the figure of Augustus, but it must be said that this zodiacal sign, together with that of Leo, was uncanningly [33] connected with certain crucial events in his career.

His private or personal device, however, was the turtle, originally with a sail, and with the motto FESTINA LENTE, "Eile mit Weile", as we say in Germany, or "more haste - less speed" as my English dictionary has it (but the German version seems to be more to the point). This motto by the way again is based on a classical model: it was supposed to have been one of the favorite sayings of Octavianus Augustus [34]. The desire to take Augustus as a prototype also within this more private realm is quite evident. For those who have eyes to see the turtle is occurring often in Florence, in connection with monuments which were erected or created during Cosimo's reign or after in his name [35].

It might be fitting to recall here that the Medici connections with Augustus had not started with duke Cosimo I. The Elder Cosimo after his death in 1464 had been officially named "Pater Patriae" by the republican government of Florence. As you all will know, this title had first been bestowed on Octavianus

Augustus in the year 2 B.C. by the Roman senate. The classical aspects and the consequences for later antiquity have been masterly explained by Andreas Alföldi [36].

The main other rooms which Cosimo before the arrival of Vasari had adapted for residential and representative purposes were: the house chapel for his pious wife Eleonora of Toledo (built from 1541 on into the southern part of the second floor of the Palazzo Ducale), decorated by the painter Bronzino who here created one of his major works. Contemporary is the Udienza in the Sala de'Cinquecento (the great audience hall) which was designed and never finished by the sculptor Baccio Bandinelli. After 1545 the duchess got a small "scrittoio", a writing-room, the duke himself had a "scrittoio" created for himself in the mezzanino, where he also had his first "fonderia" - and alchemistic or iatrochemical laboratory -, which Vasari later on was to call "bacchanalja" because of its run-down state [37]. We will perhaps later on have some occasion to briefly touch on the argument of Cosimo's scientific efforts.

In 1554, shortly after the completion of this first stage in the redecoration or rather adaptation of the Palazzo "Vecchio", the painter and architect Giorgio Vasari from Arezzo and then author of European renown was assumed into the duke's household [38]. He was to become Cosimo's artistic entrepreneur (manager) and adviser and as such closely followed his patron's fortunes for the rest of both their lives. With the start of Vasari's activities for the duke the precise phenomenon Ragghianti has described in the quotation I have given you initially, is setting in.

There remains to be cleared and explained who it was that had advised Cosimo before Vasari and his new "crowd" stepped in. Was it Paolo Giovio, the erudite historiographer and collector? [39]

Was it the humanist physician Guido Guidi, who from 1543 on gave anatomical lectures in the recently reopened university of Pisa? Or was it Cosimo Bartoli [40], the member of the Florentine Academy, who helped to devise the iconographical programs already then? The rich Florentine State Archives might still be able to disclose valuable information on this problem.

In 1555 Cosimo finally had incorporated Siena and its surroundings into his territory (the decisive stage was reached in September, under the zodiacal sign of Leo !). This was an enormous boost for his reign and it is therefore very understandable that we find in these years new activities in and around the Palazzo Ducale.

As I have said, with Vasari a totally new group of artists and advisers moved in.

Much later (but before 1570) Vasari in his "Ragionamenti" for prince Francesco de'Medici has explained the contents of some of his programs. Moreover we know from his papers [37], that he initially leaned on Cosimo Bartoli for advice [41]. From 1559 on Vincenzo Borghini is gradually taking his place. It seems however that the programs for the state rooms dedicated to Lorenzo il Magnifico, pope Clemens VII., both in the south-east corner of the first floor, and a great part with the adjacent flight of rooms together with the rooms on the floor above are falling under the responsability of Cosimo Bartoli.

Vincenzo Borghini, the prior of the Innocenti hospital, already in 1549 appears as a financial adviser to Vasari. Out of this relation there seems to have grown a solid and sincere friendship between the two men [42].

It is not quite clear how far Vincenzo Borghini was concerned with the state rooms in the Palazzo Ducale. The basic programs

connecting up the two floors are still certainly Bartoli's responsability.

We see, however, Vincenzo Borghini as responsible adviser in the "Salone" (from 1561/63 ff.[43]) and its encomiastic program.

In this occasion I would like to point out that the programs of the representative or state rooms of Cosimo in the Palazzo Ducale clearly were meant to function as his p e r s o n a l or what I would like to define as i n t e r n al legitimation. This effort was n o t directed into the field of foreign politics, it was meant for the Florentines themselves. Therefore we have here the theme of his unforgotten and unforgettable illustrious "precursors" (avoli) of the preceding century and the "liberality" they had shown in their patronage of arts and humanities, this again an augustean theme[44]. All this was interwoven with an intricate web of allusions and allegories which enhanced the greatness of the Medici, but occasionally gives very illuminating insights into the general way of thinking of the 16th century. Again and again Augustus is being alluded to openly or in a more veiled way, f.e. in the Sala di Lorenzo il Magnifico (the founder of the Platonic Academy) the latter is shown amongst his humanist friends, and especially in the Sala di Cosimo il Vecchio with its wellknown paintings showing the patron of artists and architects[45].

Having before given some names of possible advisers I wish to make it quite clear that the duke looked after all the details personally, and that no great liberty was given to Vasari to surprise his sovereign with unapproved thematical and pictorial solutions. In some occasions, especially in the cases where quite recent events were to be shown, Vasari had to do painstaking research. To give you just one example: when in 1558 he had to incorporate a representation of the "Taking of S.Leo"

(an episode in Leo's X. war for the duchy of Urbino) the duke asked Vasari to interview Giulio d'Antonio Ricasoli whose father had played an important role in the episode [46].

Again and again, however, it was tried to incorporate Augustus into the program. Still in 1560 Vasari proposed the theme FELICITAS AVGVSTI, BONITAS TRAIANI for the duke's private writing room [47]. I hope to have made my point.

A new stage was reached in the early 1560ies. In 1562 Cosimo had founded the knightly order of Sto.Stefano in Pisa [48], which was to see to the safeguarding of the Mediterranean shipping lanes against the Ottoman marauders, especially those from Tunisia. This at once brought Tuscany in amongst the naval powers in this region. This fact has of course left its mark in the programmes for the Palazzo Ducale. After Cosimo had recovered from the sudden loss of his wife and two of his sons (in 1564 he then handed most of the responsability over to price Francesco, keeping for himself - characteristically - only the care for foreign relations and especially "fu il mantenere la dignità"[49]) he got Father Egnazio Danti the clerical brother of the sculptor Vincenzo to help him create the Sala delle Carte Geografiche; Danti started to paint maps of the whole known world on panels which were to serve as doors for cupboards which in turn should hold the collections of the duke. This room, whose decoration was later finished by Cosimo's first son and successor Francesco I. and his brother duke Ferdinando I., was also furnished with terrestial and astronomical globes and astronomical instruments which Danti so adeptly had built, but the general motivating theme of i n t e r n a l legitimation was again much in evidence: right across the entrance to this room Cosimo ordered an astronomical clockwork to be installed which had been ordered in the end of the 15th century by Lorenzo il Magnifico with the then famous clockmaker Lorenzo

della Volpaia and which was installed in the Palazzo della Signoria in 1510 only [50].

Another all-important field for the public demonstration of political legitimation were of course the various ephemeral occasions of marriages (entrances of brides and bridegrooms into the city), which offered ample possibilities for creating elaborate pictorial and sculptural programmes. We are starting - thanks to the efforts of Borsook [51] and more recently Scorza [52] - to be rather well informed on the mechanisms of their production. Scorza has shown us how Vincenzo Borghini's research functioned in the occasion of the entrance into Florence of Giovanna d'Austria who in 1565 had married Francesco de'Medici. It was by the way inevitable that Giovanna's father emperor Charles V. was given mention as CAESAR INVICTVS AVGVSTVS [53] in a very prominent place within the general program, which of course did not mean a clashing of mottoes! Other occasions were f.e. in 1584 the marriage of Francesco's daughter Eleonora with a Gonzaga or 1586 that of his daughter Virginia with a d'Este. We especially like to mention in this connection the splendid festivities of 1589 in occasion of the marriage between Christina of Lotharingia and the reigning duke Ferdinando I.[54], brother and successor in 1587 to Francesco. These festivities in Florence were to become something of pace setters for the European courts and can be considered as one of the starting points or origins of what we today tend to consider a typically baroque feature. In this period, however, legitimation was no more a pressing issue, the rank of grand duke had been achieved and therefore royal status for the Medici family.

But let me briefly return to the theme as it still was an issue during the life-time of Cosimo I. It would lead us much too far

astray to describe in detail the scientific interests and activities of the Medici dukes. It seems to have escaped the attention of most scholars that Cosimo and Francesco were very active in this field.

Already early in the 1540ies (1543) Cosimo personally had seen to it that the university of Pisa was reopened, he had famous specialists called there as teachers like the medical authority Guido Guidi whom I already have mentioned (he was Cosimo's personal physician after the death of François Ier in 1547), or the botanist Luca Ghini from Imola, who on the duke's order in 1543 created the university botanical garden at Pisa and from 1545 on also looked after Cosimo's personal plant collection (Giardino dei Semplici) in Florence. The famous anatomist Vesalius also lectured there briefly, on invitation by Cosimo.

I already on another occasion in this country[++]) have tried to give some idea about how in the middle of the 16th century and at the Medici court scientific thought was integrated into neoplatonic and neoaristotelian traditions stemming from the second half of the 15th century. This can be beautifully demonstrated in the case of the "stanzino" - the little room - which Francesco had had built for his collections into the Palazzo Ducale after 1570, again with the active help of Vincenzo Borghini and Giorgio Vasari. The pictorial program was centered on the four elements: earth, water, air and of course fire as the element without which no creation was possible and which as such in the "Ragionamenti" by Vasari is expressly noted as being pointed out by the prince as being the most important element. Fire had been brought down from heaven by Prometheus and of course the prince liked to see himself as a kind of promethean artificer, and accordingly had himself represented in various instances on the wall of that

room which is dedicated to that element [55].

This of course also had to some degree to do with the business of legitimation, but here we are already getting away from immediate cares in that field. In 1570 the coronation of Cosimo took place. Of course this is also true for the employment of Hercules as a symbol for reigning power. We - just as the 16th century sages did - find in Latin literature Augustus described as especially having sought out the most learned persons of his own time [44], or as being interested in the study of the liberal arts. This "topos", this literary and biographical archetype, was of course also followed by Cosimo. I would rather prefer to put emphasis on these directly motivating sources for his activities than try to painstakingly look for the model of his personal style of living in the "Fürstenspiegel" tracts, as occasionally has been suggested.

It would make an interesting study to trace and confront the various classical and more or less contemporary sources for the rather stereotyped literary descriptions of Cosimo's activities in many fields.

At the end of my paper I would like to give you just one of these descriptions, again from the official historiographer of Cosimo's reign, Giambattista Adriani [56]:

"These many cares together with his other burdens of government did not trouble the prince's mind alone, but also how best to do honour to his state and his city with as much effort and circumspection as he could muster, with the ornament of letters and sciences; he knew well that the wellbeing of the soul, the health of the life of men, and good government of this city - not to mention the honour that one gained from it - are to a great part depending upon letters and sciences that are therein contained.

And since those arts are being exercised by most wise and illuminated men, they make those who exercise them and those who know to put them to use appear prominent amongst other people and an ornament for the city they live in. They are the soul of civic government and for the others they have many positive aspects."
So be it also with Tel Aviv - and with Israel in general!

Tel Aviv, 1rst June 1982

Notes:

+) This paper was read on 1.6.82 at Tel Aviv University, in occasion of a Symposion on "The Image of the Ruler" serving as the founding event for the "Israel Association for Medieval and Renaissance Studies."

1) Most recent edition: Ernst H.Kantorowicz, The King's Two Bodies, Princeton Paperback 1981.

2) Carlo Ragghianti, Prosopopea del Vasari, in: Critica d'Arte, anno XLV, n.s., fasc.172-4, p.136.

3) Entry in Florence 1513, 13.Aug.; 1515, 23.Nov. Capitano della Repubblica Fiorentina; 1517 Duca di Urbino; 1518, 28.Jan. marriage with Magdalène d'Auvergne. Dies 1519, 4.May.

4) he had governed the republic from 1512, 1.Sept. on. After 1513, Aug. he was called to Rome and there became "gonfaloniere della chiesa". See. Rudolf von Albertini, Das florentinische Staatsbewußtsein im Übergang von der Republik zum Prinzipat, Bern 1955, p.34 f.

5) Very strikingly so on the medal by Domenico de'Vetri 1534 (Supino 252).

6) Imperial diploma 1530, 28.Okt. "capo della republica" with succession in the male line. cfr. A(rchivio di)S(tato,) F(irenze).- Dipl.Rif.atti pubbl.

7) The title "duca" was conferred in 1532, basing on the constitutional reform of 27 April. This reform oriented itself on the Venetian model (I have to thank Nicolai Rubinstein for having drawn my attention to this fact), and accordingly the title "duca" should not simply be translated with the term "Herzog" (as Rudolf von Albertini, op.cit.,p.199 does), but rather with "Doge". Alessandro's ducal title was by the aquisition of a small dukedom of Penna near Naples, a previous attempt to get him the dukedom of Milan had gone amiss. See also R.v.Albertini. op.cit., p.198. n.4; Rastrelli I, 304 ff.; L.Cantini, Legisl.Tosc.I., p.5-17,

8) Born in 1522 of Johanna van der Gheenst.-Margareta already in occasion of the Barcelona traety had been betrothed to Alessandro; see "Articuli matrimoniales inter nepotis Pontificis et filiam naturalem Caesaris" of 1529,June 23 (British Museum Library, Bergenroth Transscripts of Spanish State Papers IX, f.373; cfr. Roth, Cecil, The Last Florentine Republic, London 1968², p.139); the promise was renewed in occasion of the coronation of Charles V. in Bologna in 1530. The agreement of course was to give the emperor a safeguard for the eventual realization of the terms of the Barcelona treaty, on the part of Clemens VII. Cfr. K.Brandi, Kaiser Karl V., München 1941³, Bd.1, pp.142, 249.

9) On 28 April to 4 May 1536. There is a colourful description of this visit written to Pietro Aretino by Giorgio Vasari, 1536, 28(?).IV. in: Karl Frey, Der Literarische Nachlaß G.V.'s München (Müller) 1923, vol.1, lett. XVII, p.49 f. and lett. XVIII, p.52 f. (this letter is the one dated ut supra).

10) On 31 May 1536. See: Frey, Vasari, lett. XXI, p.65 f. dated 1536, 3.VI. Margareta had already passed through Florence before, on her way to Naples, on 1533,17.IV.

11) He was elected "per capo et primario del governo della ciptà di Firenze et suo dominio et de'magistrati et officii di quelli", ASF.-Senato dei 48, filza 1, cc.118 v- 119 r; R.v.Albertini, op.cit., p.207; Cat."La Corte...",Firenze 1980,

For note 5a) see page 32 !

p.22 (nr. 3.8).

12) Cfr.: Il tesoro di Lorenzo il Magnifico, vol.I. (Le Gemme), ed.Nicole Dacos, Antonio Giuliano, Ulrico Pannuti, Firenze 1972. As I have stated, the loss of this group of objects must have been especially painful since they not only bore the collector's signature of Lorenzo il Magnifico, exponent of the "golden age" of the Medici, but also because they already in the 15th century had been incorporated in a decorative program in the courtyard of the old Medici palace, and therefore were part of what I would tentatively like to call the "numinous" possessions of the family. See: Ursula Wester and Erika Simon in: Jahrbuch der Berliner Museen, n.F. (1965), VII, p.15-91.

13) see: Giambattista Adriani, Historia, ed.Venice 1583 (we cite from that edition), p. 152; cfr.Benedetto Varchi, Storia Fiorentina, Firenze 1838-41 (ed.Arbib), XVI, vol.III, p.325.

14) Adriani, op.cit. III, p.151.

15) Varchi, op.cit. XVI (vol.III), p.324.

16) Diploma of "Ferdinandus de Silva comes de Ciffuentes", Florence 1537, 21.June under reference to the imperial diploma for Alessandro 1530, 28.Oct. ASF.-Tratt.internaz. n.1.a.- The imperial diploma of 1537, 30.Sept. in: ASF.-Trattati internaz. 1.b.

17) The legal title to the fortresses: Promessa del duca Alessandro de'Medici in merito alle fortezze dello stato fiorentino, of 1536, 29.Febr. (Naples). The fortresses were to remain in the hands of the emperor even after an eventual death of Alessandro. ASF.-Misc.Med.filza 960, fasc.21.

18) Against payment of 100.000 Scudi and the promise of help against the German protestants. The restitution was beginning to be effected in June 1543; ASF.-Med. filza 323, c.2 et al. See G.Spini, Lettere di Cosimo I.de'Medici, Firenze 1940,p.70.

19) Adriani, op.cit., III, p.151.

20) Scipione Ammirato, Delle Famiglie Nobili Fiorentine, Florence 1615: "A'Lettori".

21) Another grave episode had happened in 1545 in Paris at the court of François Ier., where the Florentine envoy also had to concede precedence to Ferrara (d'Este) which was an old friend of France; (bishop) Bernardo de'Medici was coldly dismissed from the French court. See G.Spini, op.cit.,p.87 f. - The Lucca incident described by Adriani (see note 19) is dismissed by Cosimo himself as: "novelluccia", "cosa finta" (1545, 30 May). See G.Spini, op.cit., p.88; Adriani, op.cit., III, p.161.
Nevertheless I would like to cite a touching passage from a letter by Cosimo I.to the emperor, of 1540, 15.June (ed. G.Spini, op.cit.,p.52): "Et, doppo Sua maestà, la quale sola come di privato mi ha fatto signore, così che di Signore mi può con una sola parola fare ritornare privato, non conosco nè principe nè signore..."

22) Bernardo Segni, Storie Fiorentine, Firenze 1835, II, p.251.

23) ASF.-Med.filza 10, c.114; cfr. Cecchi-Allegri, Guida Storica del Palazzo Vecchio, Firenze 1980, p.5.

24) G.Richa, Notizie Istoriche..., Firenze 1754-62, vol.II, p.27; cfr.Cecchi-Allegri, op.cit. p.8, p.6; p.399.

25) Kurt W.Forster, Metaphors of Rule, Political Ideology and History in the Portraits of Cosimo I.de'Medici, in: Mitt.d. Kunsthist.Inst., Bd. XV, Florence 1971, p.65 f.; see also W.Chandler Kirwin, Vasari's Tondo of Cosimo I..., ibid. p.105 ff.

26) Checchi-Allegri, Palazzo Vecchio cit., p.40

27) Livius V,49; cfr. Kurt W.Forster, op.cit.,p.73 ff.

28) Landucci, Diario Fiorentino, Firenze 1883, p.345; cfr.Cecchi-Allegri, op.cit. p.44.

29) but see: I.H.Cheney, Francesco Salviati (1510-1563), N.Y.Univ., Ph.D., Fine Arts, voll.4, University Microfilms, Ann Arbor, Mich., 1963.

30) This latter allegory is already present on the verso of the medal of Alessandro de'Medici (1534) by Domenico de'Vetri (Supino 151). For an ill.see Forster cit., p.69; cfr.Cat. "La Corte...", Florence 1980, p.18 (n.1.9).

31) Suetonius, Aug. XCIV.

32) cfr. Franz Matsche, Die Kunst im Dienste der Staatsidee Kaiser Karls VI., Berlin 1981, vol. I., p.276.

33) cfr. Kurt W.Forster op.cit., p.85.

34) Suetonius, Aug. XXIII.

35) A small selection: 1) in the Palazzo Ducale. 1555 f.Sala degli Elementi (Cecchi-Allegri no.17); 1555 f. Sala di Opi (Cecchi-Allegri no.20); 1556 f. Ricetto tra il terazzo di Giunone e la Sala di Ercole (Cecchi-Allegri no.26); 1556 f. Sala di Cosimo I. (Cecchi-Allegri no.30); 1561 f. Sala di Ester (Cecchi-Allegri no.46); 1561 f. Sala di Penelope (Cecchi-Allegri no.47); etc.
2) two obeliscs on Piazza Santa Maria Novella (Giambologna 1608, but the races started in 1562!) are carried by turtles.
3) "Morgante" (=Pietro Barbino, court dwarf of Cosimo I.) riding on a turtle: entrance Boboli gardens, left wing of Pitti palace, by Cioli, etc.

36) Andreas Alföldi, Der Vater des Vaterlandes im Römischen Denken, Darmstadt 1971; it must be mentioned that the epitheton "parens patriae" or "pater patriae" was used for Furius Camillus already in the second half of the second century A.C., cfr.Alföldi, op.cit.,p.113.

37) Frey, Vasari, CCXVI "bachanalja che oggi è diventata (la fonderia)" 1558, 12 May.

38) Vasari is being employed on 10 Jan 1554, but cannot start his activitites because Battista del Tasso is still finishing the construction works. Frey, Vasari, I, p.425. He already already in 1550 had tried to get into the ducal services, on the strength of his newly published artists biographies: Frey, Vasari, CXXXI.

39) but Giovio in a letter of 1545, 11.Sept. erronously calls the Camillus program a Scipio program (cfr.Cheney, op.cit.,II, doc.20, p.649); cfr. Cecchi-Allegri, op.cit., 1980, p.47.

40) see: Girolamo Mancini, Cosimo Bartoli (1503-1572) in: Arch.Stor. Ital. anno LXXVI, vol.II, disp.3-4 del 1918 (a rather superficial treatment of this interesting personality, not even mentioning his advisory status).

41) Frey, Vasari cit.,CCXX, p.410; or: CCXXVI, p. 447

42) Frey, Vasari, CCCLVI, p.645 and passim. Cecchi-Allegri,op. cit., p.248 ff.

43) Frey, Vasari,cit., CCCXCVII, p. 722 and after.

44) Suetonius, Aug. LXXI, LXXXIX.

45) Cecchi-Allegri, op.cit. no.28 (p.128 ff.); see also W.Chandler Kirwin, passim.

46) Frey, Vasari cit., CCLXI of 1558 (st.c.), 22.Jan.

47) Frey, Vasari cit., pp.532-3, CCXCIII, of 1560 (st.c.), 3 March; but cfr. Cecchi-Allegri, op.cit., p.193 (in: no.44).

48) Giambatt.Adriani, op.cit., XVI, p.1178 f.

49) Giambatt.Adriani, op.cit., XXII, p.63.

50) Vasari, Vita di Egnazio Danti, 1568, VIII, pp.633 ff.; cfr.Cecchi-Allegri,op.cit., p.XII, p.310 ad annum.

51) Eve Borsook, Art and Politics at the Medici Court I: The Funeral of Cosimo I de'Medici, in Mitt.KIF, XII, 1965, p.31 f; -.-: Drawings for the Funeral of Cosimo I. de'Medici, Mitt. KIF, XII, Dic.1966, p.366; -.-: Art and Politics at the Medici Court II: The Baptism of Filippo de'Medici in 1577, Mitt.KIF, XIII, Dec.1967, p.95 ff.; -.-: Art and Politics at the Medici Court III: Funeral Decor for Philip II of Spain, in: Mitt.KIF, XIV, June 1969, p.91 f.; -.-: Art and Politics at the Medici Court IV: Funeral Decor for Henry IV of France, in: Mitt.KIF, XIV, Dez. 1969,p.201 and p.248 (Addendum).

52) R.A.Scorza, Borghini and Invenzione, The Florentine Apparato of 1565 in: Journal of the Warburg and Courtauld Institutes, XLIV, 1981, p.57 f.

53) still in situ: INGRESSA AVSPICIIS HANC VRBEM DIISQ(VE) SECVNDIS / CAESARIS INVICTI AVGVSTI PVLCHERRIMA PROLES ... cfr.Cecchi-Allegri, op.cit., p.279 (no.: 11).

54) see: R.Gualterotti, Descrizione del Regale Apparato per le Nozze della Serenissima Madama Cristina di Lorena etc... Florence 1589, and other sources.

++) Nature and Art, Some Epistemological Gleanings from the Medici Exhibitions, Florence 1980; a paper read 23.11.81 at the Hebrew University, Jerusalem.

55) Vasari, Ragionamenti, Arezzo 1762, p.6: "Fermate; molto non ci avete fatto quel del Fuoco, il quale sapete arebbe a esser più alto ?" (question of prince Francesco).

56) Giambatt.Adriani, op.cit. III, p.185-6.

- 5a) and territories around Campli in the Abbruzzo. A.had received those from the Emperor in 1522, 25.Sept. He had to sell them in 1536 to finance his marriage festivities. Nevertheless he remained Duca d'Arschot (or: Aerschot) in Flandres. Cfr. Napoli nel Cinquecento e la Toscana dei Medici, Napoli 1980, p.10 ff.:Gius.Coniglio, I Medici, Fiorentini e il Viceregno.

A SYSTEM FOR THE WONDERS OF CREATION

Art and Science In The 16th Century

Ein System für die Schöpfung

Zusammenfassung

Die Ordnungsprinzipien der "Kunst- und Wunderkammern", wie sie im 16.Jahrhundert entstanden, spiegeln zweifellos die Systematik wider, unter der die Weltschau dieser Zeit stand. Es ist daher legitim, sich in die Ideengeschichte der Wissenschaft dieser Zeit zu vertiefen.

Das 19.Jahrhundert mit seinem Fortschrittsglauben gab der Geschichte der Wissenschaften den positivistischen Anstrich. Seitdem ging man davon aus, daß Wissenschaft - wie geologische Sedimentation - durch niedrige zu höheren Stufen der Errungenschaft aufgestiegen sei. Heute ahnen wir, daß die trügerisch ruhige Landschaft, die eine solche Geschichtsschreibung entworfen hat, Ausprägung und Resultat von einer Serie geistiger Revolutionen und Brüche ist.

Renaissance - dieser Begriff darf lt. Eugenio Garin nur auf kulturelle Sachverhalte angewendet werden, nicht aber z.B. auf das Gebiet der Politik, wo eine wie immer geartete Kontinuität nie unterbrochen wurde. In der Wissenschaftsgeschichte ist also der Begriff "Renaissance" anwendbar und zu überprüfen, wie diese Epoche der Geistesgeschichte sich auf den Wissenschaftsbetrieb seit dem 15.Jahrhundert ausgewirkt hat. Der Begriff "Renaissance" beinhaltet ebenfalls einen starken Aspekt der Kontinuität.

Es wird im Folgenden die Zeit unmittelbar vor dem Auftreten Galileo Galilei's behandelt, welche in der modernen Wissenschaftsgeschichte immer unter dem Aspekt des Vorläufertums bewertet wird. Damit wird man jedoch der damaligen Weltschau nicht gerecht.

Es wird dargelegt, daß das 16.Jahrhundert mit seinem Wissenschaftsbetrieb (Medizin, Botanik, Iatrochemie, Alchemie) sich von dem des 15. Jahrhunderts stark unterscheidet. Stand im 15.Jahrhundert (bis etwa 1540) in Florenz noch der philologische Aspekt im Vordergrund (Suche nach authentischen Quellen und Herstellung von Synopsen mit Erscheinungen der Natur) , so wendet sich das 16.Jahrhundert stärker der Empirik zu, immer jedoch mit dem Bestreben, die Ergebnisse mit den klassischen Quellen in Einklang zu bringen.

Wichtiger Exponent und Förderer der Wissenschaften war im

Florenz des 16.Jahrhunderts Herzog Cosimo der Erste und sein Sohn und Nachfolger Francesco der Erste Medici. Es werden die bekannten Gesandtenberichte zitiert sowie eine Reihe von gelehrten Persönlichkeiten angesprochen, die Cosimo I. an das von ihm wiedergegründete "Studio di Pisa" berufen hat.

Alchemie und Iatrochemie nehmen im Interesse der beiden Herzöge ganz offenbar einen vorrangigen Platz ein, aber auch die Landvermessung, die Astronomie und die Geographie.

Die Nachrichten über den Laborbetrieb in Florenz lassen sehr interessante Fragen über technologische Probleme entstehen.

Im "Stanzino del Principe", das sich Francesco I. durch Vasari im Palazzo Ducale hat einrichten lassen, hat der Ratgeber Vincenzo Borghini ein kosmologisches System entwickelt. Es basiert auf der neoplatonisch-neoaristotelischen Vierheit der Elemente; jedem dieser Elemente ist eine der vier Schrankwände gewidmet. Die Betrachtung beschränkt sich jedoch auf die Wand des Elementes "Feuer", welches in diesem System das kreative Prinzip verkörpert und - wie wir aus anderen Quellen wissen - von dem Prinzen als das wichtigste Element betrachtet wird. Die Vierheit der Elemente ist für die Ordnung der Preziosensammlung, welche in diesem Raum untergeracht wurde, der bestimmende Faktor.

Den Schlüssel für das Programm enthält ein Fresko von Francesco Morandini da Poppi, das in der Mitte des Tonnengewölbes sich befindet. Das Bild zeigt Prometheus, an den Kaukasus geschmiedet, den Fenchelstab mit der vom Wagen des Phoebus gebrochenen flammenden Kohle in der Linken. Vor ihm liegt die Natur, mit einem Säugling an der rechten Brust, einem Einhorn und einer Schlange an der linken. Die Deutung dieser Darstellung ist bisher nicht gelungen, da sie die aus der Antike über das Mittelalter ungebrochenen Topoi zum Verhältnis zwischen "Natur" und "Kunst" auf den Kopf zu stellen scheint. Auch andere Einzelheiten, z.B. der Säugling oder die Rolle des links oben schwebenden Putto, sind bisher noch nicht entschlüsselt worden. Auch der pauschale Hinweis auf hermetische Symbolik kann lediglich zu mehr oder weniger unbefriedigenden Konjekturen führen.

Zum ersten Mal wird hier die "Kore Kosmou" (Nock-Festugiere fragm.XXIII), ein gnostischer Text aus dem 4.Jh.n.Chr., für die Deutung herangezogen. Dieser Text erlaubt es, Prometheus als Vertreter von "Labor" zu interpretieren, der sich mit "Natura" vereinigt, um eine Tochter "inventio" hervorzubringen. In dem

ferner heranzuziehenden fragm. XXV wird auf eine Vielzahl von Lebewesen hingewiesen, die sich an ihren ihnen zugehörigen Ort auf der Erde, in der Luft und im Wasser nach ihrer Schöpfung durch Hermes verteilen.
Die genannten Fragmente erlauben es ferner, den fliegenden Putto als einen Dämon zu identifizieren, einer von jenen, die der Demiurg noch vor dem übrigen Kosmos geschaffen hatte. Diese Dämonen haben in besonderer Weise Teil an der Seele, die die gesamte Schöpfung durchdringt.

In diesem Kontext unterscheidet sich die Rolle der Natur als "compagna" grundsätzlich von ihrer traditionellen als Lehrmeisterin, Vorbild und Quelle für die Kunst. Allerdings ist in diesen Topoi lediglich die bildende Kunst als "Kunst" berücksichtigt, nicht aber die "Kunst" z.B. des empirisch vor dem Feuer hantierenden Alchimisten, des späteren Chemikers.

Am Schluß des Vortrages wird versucht, die Weltschau dieser Zeit und ihre Quellen zu beschreiben. Da das Thema des diesjährigen Treffens der ISRAEL SOCIETY sich mit Aspekten des "Populären" oder "Aristokratischen" befaßte, wird hier abschließend darauf hingewiesen, daß ein ständiges Geben und Nehmen zwischen diesen Ebenen auch in dem Wissenschaftsbetrieb vor der Renaissance zu konstatieren ist, während nach der Revolution der Weltschau durch Galilei gewisse Aspekte auf das populäre Niveau absanken, wo sie zwar ein vom Wissenschaftsbetrieb verachtetes Leben weiterfristen, dennoch in ihrer Popularität immer noch zu ernsten Verlegenheiten führen können (Ravetz).

Angesichts der Unterschiedlichkeit der zahlreichen Aspekte, die in diesen Ausführungen zusammengeführt worden sind, habe ich auf die erläuternden Fußnoten verzichtet. Ich bin gerne bereit, Interessenten Hinweise auf weiterführende Literatur zu geben.

In the beginning I would like to make some explanatory remarks. The history or rather certain philosophical aspects of the history of science have in the last years become more and more pertinent to my field of research, which is the history of collecting. Here I am concerned with the study of early collections, namely the so-called curiosity cabinets or "Wunderkammern" as they came into being in Europe in the period shortly preceding the year 1600 and of course in the beginning of the seventeenth century.
It stands to reason that the systems according to which these collections were organized must have in some ways reflected or reacted to the way the contemporary scientist approached the visible and invisible phenomena of creation.

The approach to the study of history of scientific endeavour seems to have undergone considerable changes or revolutions. This possibly has been a reaction to the actual state and the philosophy of our contemporary science and its outlook on the world - if any. In the Sixties the "sputnik-shock" was felt even here, and the social history of science began to flower. One began to examine the historical conditions under which scientific "advances" were made; this didn't give us recipies but it opened up stunning vista on a field which since the nineteenth century had been tilled by people who were convinced that science was bound to pass from unknowns to knowns, in the process eliminating automatically all offshoot that were proved to be superstitions, errors or worse. I think we are long past such an approach, even if today there might be found here and there leftovers of that mentality - especially within certain teleological systems created in the aftermath of the last century to emancipate the working class. Of course such very superficial, facetious and amateur statements should be bolstered by a more profound examination of this problem; this cannot be done here and so again I have to beg your forbearance, taking into account my enthusiasm for this topic and the pressure I already have been put under as far as available time for presenting this paper is concerned.

Historiography of man's scientific endeavour seems to have started out in the 19th century with a pacated concept of continuity and a positive development or sedimentation from lower to gradually ever higher levels of achievement. Science in this

context represents a positivist development - the "explicandum" is always replaced by the "explicatum". This time is past; it has been realized that in the process of this "gradus ad parnassum" science has destroyed much of its own history and that the deceptively quiet landscape of this history, albeit with all its peaks and valleys, is the result, not of quiet sedimentation, of logical and gradual rise, development or progress, but - to stick to the geological picture - of sudden rifts and faults, of the opening and closing of abysses, of considerable earthquakes and other disturbances.

Eugenio Garin has often enough assured us that the term "Renaissance" is applicable only to cultural phenomena, and that it cannot rightly be applied in other fields - here the flow of history continues undisturbedly. The history of science doubtlessly is the history of such a cultural phenomenon. Renaissance has - since the establishment of this term in the 19th century for certain post-medieval phenomena - been considered as being such a rift or change in the history of European culture, but on the other hand research in all fields of cultural history has always been looking for and pointing out elements of tradition, of continuity; doubtlessly such elements are main constituents for the historical phenomenon of Renaissance. You all know how much the reference to classical traditions has to do with this alleged intellectual or cultural "rebirth" and even the term itself, employed instead of mere "birth" implies such an aspect of continuity.

The actual director of the Florentine museum for the History of Science, Paolo Galluzzi, who was responsible for the exhibition "La Rinascita della Scienza" within the 1980 Medici cycle, in his foreword had to be rather vague about the aspects of rebirth or revolution, as far as science is concerned, in the 15th and 16th centuries, he rather tended to date a revolution of scientific thought into the beginning of the 17th century, which seems to be correct; but under those auspices the exhibition became quite ambiguous, and it was not able to show more than some aspects of science in the 16th century which - according to our own lights - was precursory to the fact. But the mere aspect of being precursory under more intensive scrutiny does not suffice for defining what had happened before Kopernikus' (1473-1543) and Galilei's (1564-1642) or his contemporaries Kepler's (1571-1630) ideas and

discoveries became common stock and began to exert their impact on the way people looked at their world. Those people most certainly lived in a teleological system, none that was in their eyes programmed to end as it did shortly after. It is my firm opinion that in assessing the 16th century we have to be aware that it presents the logical development of something, which in turn would be superseded by something radically different in the 17th century. It is my conviction, then, that in the history of science the term Renaissance signifies tradition, not revolution.

I think at this point that is is a little dangerous to already now try and define an argument on wether certain aspects of scientific endeavour in the period I am speaking about (and which we might call the "pre-revolutionary" period) in the second half of the 16th century could or should be defined "popular" or "aristocratic" - to take up the general theme of this meeting. As far as such aspects are still surviving today, so eloquently lamented by Prof.Diament in the preceding paper, they evidently can indeed be assigned to such levels. Perhaps I should take up this question at the end of this paper.

Let me digress briefly into epistemology. This big and very fashionable word is being used by many and in different ways. Within our context I would like to use it for certain aspects of the science of knowledge or rather: science of terms of knowledge. In the three examples I give you of the use of the term "scientia" perhaps we can see a change of approach or rather: attitude towards the aquisition of knowledge. My first example is Isidorus Hispalensis the great encyclopedist of about 600 A.C. He defines the term as follows: "disciplina a discendo nomine accepit: unde et s c i e n t i a dici potest...quando veris disputationibus aliquid disseritur, disciplina (= scientia) erit. Quando aliquid verisimile atque opinabile tractatur, nomen artis habebit (I,1)." Science, which is derived from the term learning, occupies itself with truth. Everything else, everything that occupies itself with probability and/or matters of opinion, shall be called art .
This rather scarse definition is interesting because it introduces the term "art" which will occupy us a bit later.

St. Thomas Aquinas, around the middle of the 13th century,

in his "Quaestiones Disputatae de Veritate" explains the term "science" (scientia) in another context. Here it is used for a more static phenomenon, a state of knowledge which can be found in man (2,a.1., p.13), a method to reach conclusions, whilst intellect concerns itself with principles (2, a.1.4). The term lacks dynamism, it has not the meaning: strife for knowledge, with which we are used to connect it. Scholastic method of thinking doesn't seem to help us much here.
Renaissance seems to have gone back to Isidorus with a will. In this period his concept of "art" becomes more and more relevant. It describes those capacities and activities that we define as empirism in research. Science becomes something instrumental: the borderlines between "scientia" and "ars" become fluid. If we read in a technical manual which Andreas Libau (Libavius) published in 1597 in Francfort,we find a very common use of the term "ars" which here means technical prowess in manipulating the products of nature, especially by the employment of fire.

The Renaissance of science or-as I now might be pardoned to say - a new approach to old theories or fundamentals began, as you all know, in northern Italy, in the 15th century and in the course of the great church councils that in view of the approaching Ottoman threat tried to repair schism within the Roman Catholic church on one hand and the division between the Byzantine and the Roman Catholic churches on the other. Greek philology assisted the church dignitaries when they tried to find compromises between traditional interpretations of the canonic texts in east and west. Greek was being taught extensively in 15th century Italy; in Florence the munificence of the Medici, starting with Cosimo the Elder, not only helped to give substantial financial contributions to popes and entire councils of the church (his rôle in this field has not yet been studied sufficiently). Cosimo also started and financed a great manuscript hunt in the cloister libraries of central Europe and in Greece, with sensational results.

The consequences of this search for classical texts are now rather well known. The new authorities which in due course were revealed to a learned public, and the better versions of the old, were to swing several generations toward philological research. In Florence Marsilio Ficino (Figline 1433-Careggi 1499) was to become a key figure, with his mastery of classical greek, which

not only allowed him to translate the works of Plato into Latin and tuscan Italian, but also gnostic texts which had reached Florence shortly before Cosimo's death in 1464 and which in their printed version were to become bestsellers for the period up to 1600. Allow me to leave it at that for the time being.

The platonic academy was formed under the munificence of Cosimo's grandson Lorenzo in the Medici villa of Careggi near Florence, and after his death and after the expulsion of his son Piero from Florence in 1494 the local aristocracy went on debating higher issues in the Rucellai gardens. Now on into the 16th century and to our theme.

In the paper I had last year the honour of reading before this meeting I had tried to occupy myself with the figure of duke Cosimo I. de'Medici who rather surprisingly for the contemporaries was raised to power in 1537, a hundred years after the period I have been speaking of before, after the untimely demise of his cousin Alessandro, who was assassinated by a hotheaded relation of both, Lorenzino de'Medici. Apart from his political importance and activities Cosimo seems to have been a universally interested and especially gifted researching scientist.
Up to now his biographers have not included this side of his talents into their descriptions of this formidable figure. This might be explained by the circumstance that his official biographer Giovambatista Cini ("Vita del Serenissimo Signor Cosimo de'Medici...") only in the last, the eighth book, fleetingly mentions Cosimo's prowess as a chemist: "He has amongst others found by experiments in destillations and other medical activities, substances of such great efficacy and put them to use, that because of his liberality people from allover Europe have come to this wellnigh new Aesculapius (!) to liberate themselves from their ailments..."
Aldo Mannucci, the other official biographer, is a little more explicit: "he delighted not only in painting, sculpture and architecture...and introduced bookprinting into Florence...and like a loving father, who has at heart not only the health, but also the dignity of his sons, he furnished his guardaroba with every kind of the rarest and most precious medecines, in order to serve them freely to all citizens and strangers who were in need of them. In these things all his sons also had great ability, but especially the second grand duke Francesco, who has brought himself to such a

degree, that if he was to become equal to his father in many respects, in the knowledge of scientific literature he is by far his superior; he has a singular and perfect knowledge of certain recondite sciences and artifices...Cosimo knew much about the properties of marbles and porphyry...and knew the nature of animals."

The evidence given by the two biographers I just have quoted is beautifully and extensively convalidated by the famous report of the venetian ambassador Vincenzo Fedeli of 1561, describing the scientific activities of the 48 year old Cosimo, and in 1579 by Gussoni, this time concerned with Francesco, Cosimo's first son and successor.

The report on Cosimo mentions extensively Cosimo's interests and activities as a botanist, a iatrochemist and an alchemist in the traditional sense. He gives a good impression of how well the duke's laboratories were organized: "I would like to mention some subjects of interest to him...: he has a profound knowledge especially of medical herbs and spices and his gardens are full of them...he delights in having them experimented with. He takes special care in the fabrication of chemical substances and antidotes with quite evident and beneficial effects against all sharp poisons...The place where such admirable things are being done is very large and is called 'foundery of the Duke of Florence'. Here they handle all kinds of fires, forges, ovens and distilling apparatus. The Duke very frequently goes there and with great personal satisfaction works there. It is remarkable to watch the great order there and to see how many medecines for the human body are being fabricated here."

Gussoni's report of 1579 is even more explicit. He first mentions - important fact for Venetians - that in the Grand Dukes laboratories they succeed in melting down and working rock crystal in the same way as simple glass before the oven. If we can trust the ambassador - and why shouldn't we? - this means that some kind of silicate glass had been made in Florence long before **the nineteenth century.** "Indeed he has some of our best masters from Murano in his pay. These vessels are very fine and beautiful to behold, because of the material they are wrought of and because their artistic forms...

Moreover he has invented a method to imitate Indian porcelain and he succeeds in equalling it in all respects; his porcelain has the same transparency, it is as resistant to fire and shows the same lustre, the same lightness and subtlety, in short: it has the same

properties as the former. The Duke has told me that it took him ten years of exhausting research to find the secret and that he had a man in his pay who daily performes new experiments.

...He has a good knowledge of the good arts, but above all he especially likes to work with distilling apparatus and therewith produces many waters and sublimates for the curing of many maladies ...he also takes pleasure in pyrotechnics, and I have heard from him personally that he knows to construct a projectile that can be caused - after it has left the barrel - to explode where over one desires, only 30 ells away or half way, and wherever it explodes it causes a terrible dying of men ... "

I must cite some more of this text, since it saves me a lot of explaining afterwards: "Moreover he has a more than average taste in paintings, sculpture, cut stones and all kinds of objects from antiquity. He has a place called 'the Casino', comparable to a small arsenale, where in different rooms he has masters working on different things. There he also has his distilling apparatus and other things of high artifice..." The duke spends much of his time there, even doing his government business from there.

With visible gusto the Venetian ambassador then relates how after a formal dinner given him by the Grand Duke, the sovereign took him by the arm and (I cite) "delighted in showing me his precious objects or rather his little rooms to which normally nobody has access, with the rare exception of his own children. There in one of them he keeps all oils and distilled waters which are especially precious because of the method of their fabrication or their rareness in nature. Moreover he keeps there those works of painting, sculpture, miniature painting, rare stones, cameos, medals and such like, brought together with the employment of enormous sums already by his predecessors, a collection which he has enlarged substantially.
Here with great kindness he took personal pains to show me for more than one hour all these objects, taking them out of their containers..."

The Venetian ambassador was honoured by being allowed into the "stanzino" (little room) of Francesco I. and the "tesoretto" which his father Cosimo I. had built into the thick trecento walls

of the Palazzo Vecchio beneath it. A bit further on I will take you there. First however allow me to fill in some of the contours drawn by the two Venetian dignitaries.

In the light of the few well-known sources I have cited it seems astonishing that a more profound general study of science in this period in Florence has never been undertaken; only recently, as an aftermath of the 1980 Medici exhibition, there seems to be a change. The only collection of material I know of is the monumental work of Giovanni Targioni Tozzetti of 1790, which recently has enjoyed a reprint; it is mainly concerned with the proceedings of the Academies of the Lincei in Rome and later the Cimento in Florence.

Following the first report let us briefly consider botany. In 1543 (six years after he came to power) Cosimo had reanimated the Pisan university and had called the eminent botanist Luca Ghini from Imola (1490-1556) to teach botany there; Luca Ghini had immediately founded a plant collection there, to which soon after a museum and a specialized library were attached. In the end of 1545 Cosimo had Luca Ghini look after his own private botanical garden on a piece of ground immediately behind the church of Santissima Annunziata in Florence. We are very well documented on both, especially on the Florentine one, starting with the notary's writ, letters about irrigation channels (water came from the Mugnone river); the plant catalogues, even herbars, are preserved, and their comparison as we hear is being done by Mrs. Tongiorgi Tomasi at Pisa University, certainly an interesting topic for research. Pisa might have had a more general collection for teaching purposes, while the Duke's private gardens in Florence must have been oriented more towards medical application, as their still existing name "giardino dei semplici" (garden of medical herbs - simples) is indicating; but this remains to be seen. Valuable additional information might be gleaned from the papers of the great Ulisse Aldrovandi (University of Bologna, inventories are published), whose connection with the Dukes of Florence is notorious.

A tantalizing problem is the so-called "foundery of the Duke of Florence". It seems to have been shifted around from the "mezzanino" in the Palazzo Vecchio to premises behind the Loggia dei Lanzi, and his son Francesco after his fathers death in 1574 moved the whole works to the "Casino di San Marco", where it is described

or rather mentioned by the second ambassador's report. The craftsmen's workshop seems afterwards to have been brought back to the Uffizi complex, by Ferdinando I., the brother and successor of Francesco(1586). The laboratories remained at San Marco, eventually under the supervision of the interesting person of Antonio de'Medici, who perhaps will occupy us in the future.

One of the key figures at the court of Cosimo I. might have been - at least for a certain period of time - the physician Guido Guidi (or "Vidius" in the latinized version); only recently this remarkable man has become subject of more intensive studies. After having studied anatomy at Pisa the young man - by the way a relation of the painter Domenico Ghirlandajo - joined the court of cardinal Niccolò Ridolfi in Rome. The French king François I. made him his personal physician. He occupied the chair of anatomy at the Collège de France. After the king's death in 1547 Guidi returned to Florence and became Cosimo's personal physician. Until his death in 1569 he has taught anatomy and medicine at Pisa University.
Guidi's friendship with Benvenuto Cellini, the great sculptor-goldsmith who when in Paris stayed at his house, is notorious. In the light of certain medical manuscripts which reached Florence in the 15th century and which by Guido Guidi were translated into Latin - an interesting group which was on view at the Medici exhibition of 1980 - it seems to me that Guidi might have been representative for the 15th century approach to scientific research: i.e. going back to and interpreting the authorities of antiquity, making them accessible by translations.

Cosimo I. was making personal efforts for getting the best anatomists to lecture at the "Studio di Pisa". Vesalius (1514/15-1564) was one of them, but he would not remain longer than 1548. His successor was Gabriele Fallopio or Fallopia (1523-1562) who also was called while lecturing at the university of Padua. His name is still connected to the Fallopian tubes.

I hope that I have made it clear that Cosimo had a stunning range of scientific interests; let me add that the "Mappamondo"-room in the Palazzo Vecchio bears testimony to his geographical interests, the decoration was begun by the famous mathematician and builder of instruments Egnazio Danti, the brother of the sculptor Vincenzo.

Vasari's biographies of the famous painters, sculptors and architects of his times (editions 1550 and 1568) are an eloquent apotheosis of the Duke in his rôle as patron of the arts. Many notices about his scientific prowess can also be gleaned from these pages, and have been.

The scientific inclinations of his first successor the prince Francesco I., seem to point in different directions. The scarse indications I have given above describe his greater specialization and professionality, as compared to his father.

The report of the Venetian ambassador Gussoni (1574) on Francesco I. (four years after Cosimo's death) - I already have cited various passages from it - mentions several technological achievements which would warrant more profound research. I have been very much intrigued by the porcelain story; Medici porcelain, which might be described as a rather successful attempt of imitating islamic porcelain (not chinese !) was very much looked after by contemporary collectors. We know that Ulisse Aldrovandi, the famous Bolognese scientist, repeatedly asked the Duke for just one piece for his collection, and in the famous museum which the Jesuit Athanasius Kircher (1602-1680) had founded in about 1650 in the Collegium Romanum one such piece is especially mentioned as coming from the Medici factories.

Another technological point that might be worth looking into is the report on Francesco melting down rock crystal (i.e. pure quartz) and manufacturing glass from it. This problem has to be locked up to the porcelain question; we are still discussing if the laboratories of that time were able to generate the necessary heat or not, or what tricks were used to make the material fluid even at temperatures which were considerably lower than the 1715 centigrades for working silicate glasses.- And would the furnaces have been able to resist such heat?
A glimpse into the manual of Andreas Libau on chemical techniques seems to give indications for solving this problem.

If we look at vessels like this we indeed might wonder if this extravagant form has been created by employment of the cutting wheel or rather by glass blowing techniques, if we consider the incredibly thin walls of this vessel and think about the waste of material involved; but again, this might contribute to the

high value that was attached to these kinds of objects.

These necessarily very limited glimpses have - I hope - made it abundantly clear that in the second half of the 16th century Florence has been an astonishingly active place as far as chemical and pharmaceutical empirism and research was concerned. It is logical to presume that these interests of prince Francesco de'Medici must have had an influence on the art he commissioned - and in fact I now can invite you to accompany me for a short visit to the "stanzino" or little room which the Venetian ambassador was so eloquent about in his report of 1574. This secret room (which only since its reconstruction by Poggi and Lensi was called "Studiolo", and erroneously so) was never included in any written inventory we possess; it is situated quite near to the big audience hall, the former "Salone de'Cinquecento" .

From documents in the Florentine Archives and from the papers of Giorgio Vasari which came to light only in 1908 in the Rasponi Spinelli archive and later were published by Karl Frey, we gather that work on this room may have begun already in 1569. For the iconographical program Vasari, the entrepreneur, asked for the assistance of his worthy friend the priest Vincenzo Borghini, prior of the Innocenti orphan hospital. Already in the years before Borghini had produced complex humanist programmes for all kinds of occasions, employing his vast humanist erudition in all matters religious, mythological and political. Borghini quickly rose to the call and produced two main exposés, the first evidently written before having had a possibility for visiting the premises, the second as a more detailed project after having visited them.

Borghini quickly elaborated a general line for the program: "This small room now about to be furnished is to serve for storing objects rare and presious because of their material value, or because of their artifice, namely jewels, medals, cut and engraved stones, rock crystal vases, rare inventions and similar things which could not be too voluminous and be kept in special cupboards, everything according to its material and species.
It seems to me that the invention (i.e. the program) must conform with material and quality of the objects which are to be kept here; the final outcome should make the room attractive...and that it should serve as a means of indication ar key to retrace the various

objects. The figures and the paintings on the cupboards should in some way indicate which kinds of object they hold..."

He now comes to the program proper: "...if we consider that these objects are neither all derived from nature nor all from art, but rather contain elements of both, assisting each other; for giving an example: nature furnishes her diamond, the carbuncle (almandine), crystal or similar other things in a crude and unformed material - and art polishes, cuts and squares them...So I have thought that the whole program should be dedicated to n a t u r e and a r t . Therefore on one hand I have planned it to arrange for statues to represent those who were either inventors or first cause or (as the ancients believed) protectors of and responsible for nature's treasures, and on the other hand for paintings which for their part show the variety and artifice of the former: so accordingly in the middle of the vault which forms the "heaven", there should be painted Nature and Prometheus as her companion, the first inventor of precious stones and of rings (as Pliny has it), who according to the abovementioned fable was chained to Mount Caucasus where he suffers great fatigue working intensively to dig up diamonds and other precious stones...And...because Nature in her operations and effects has mainly the four elements as her subjects, which are like body and matter for these things, namely e a r t h and w a t e r , and the two other serve as forming forces, namely a i r and above all f i r e . And since there are four walls to decorate I would put one element on each of them..."
This slide shows the vault, with n a t u r e and P r o m e - t h e u s holding the middle field, to the left we see a representation of the element of f i r e , below of the element of e a r t h , to the right - opposed to the element of fire - the element of w a t e r , above, the element of a i r . The corner areas which are not visible here show the temperaments: f.e. above the beautiful statue of Apollo by Giambologna we find the c h o l - e r i c temperament as a mixture between the influences of the elements of fire and earth ... and so on, always represented by more or less underdressed young ladies. On our slides we find in the angles the various states of matter: fire and air create the state of dryness (above left), air and water that of <u>cold</u>, water and earth that of <u>moisture</u> (below right) and earth and fire that of <u>warmth</u>.

In our case study we concentrate on the element of fire and the wall dedicated to it, an element of which we know that according to the prince's opinion (as we read in Vasari's "Ragionamenti") and according to gnostic theories was amongst the four elements the most creative and most important. Nevertheless we must keep in mind that the overlying system had to fit together all single components, in order to demonstrate, as Borghini has it: "the continuos story" and: "to show the admirable chain of nature".

Let us first listen to Borghini's description of the function of the deities to be shown as statues: "At last for the element of fire I should put Apollo, lord of light and warmth, a beautiful youth, for the colours that exist in connection with light, not only comprising lapislazzuli, but also many other coloured minerals ..." and for the upper right hand niche: "In the other niche I would put Vulcan for strong minerals like steel and iron, where mainly fire is operating, and for many other artifices like clocks, dies for medals, ingenious apparatus for opening and closing, always intending exclusively rare things which incite a certain marvel in the beholder, more common objects should not be put into such a place..."

From how Borghini presents his program we can desume that he reads the walls like open pages, i.e. from left to right, but not - as we will see - in two lines, but rather in fields. We see two rows of paintings strung across the wall, the upper one - between the two niches - are six square ones, below those and below the niches there are eight oval paintings which served to decorate the cupboard-doors. The whole complex had been dismantled in the 1580ies and reconstructed only after 1910 by Giovanni Poggi and Lenzi, after Poggi had had occasion to consult the Borghini papers in the Rasponi Spinelli archives.
Up to now no account has been found on how exactly the paintings were distributed on the walls. Only recently a new document from Borghini's hand has come to light, which has been published by Michael Rinehart in the Janson Festschrift of 1981. This page, covered by Borghini's scribblings, is another interesting information on Borghini's modus operandi, after the studies by Karl Frey and by Mrs. Scorza in the 1981 Warburg Journal. Now it seems quite clear that according to Borghini's and Vasari's plans the subjects of statuary and paintings in the upper file were to be explained

or enriched by classical references in the ovals in the lower files. Moreover our task has been made easier by Rinehart's conclusion that evidently or probably each vertical pair of paintings was done by one artist.

So the new reconstruction differs in several points from the one Lenzi and Poggi had proposed in 1910 amd which was never seriously challenged up to 1980.

We here draw the consequence by reading the wall from left to right in pairs. We have already started with the niche and the statue of A p o l l o . Below that there is an explanatory oval painting showing the scene where Apollo brings his son Asclepius to the centaur Chiron to have him educated there. This painting by Domenico Buti has occasionally been given the title "fonderia medicinale", i.e. "medical distilling works". This title also seems fitting, since the painting is full of iatrochemical allusions. Asclepius had been born by a caesarean operation - Apollo had cut open the dead body of his former lover, the nymph Coronis, whom shortly before he had shot for her infidelity. In the center of the painting we can again barely discern Chiron, as he leads the young half god towards his destination, i.e. to become a great healer and the patron of medicine. They walks towards a great distilling oven in the center of a wide pantheon-like building: a divine profession is to be his. The decidedly symmetrical composition shows on the right hand one of Chiron's helpers, carrying a big vase on his head with a plant that resembles a rosmarine or a passion flower, both highly esteemed by the medical botanists of the time.
I want to emphasize already now that this interpretation to me seems absolutely stringent, given the importance of Asclepius in the gnostic literature which - as we will see - has furnished great part of the **sources** for the Borghini program.
It is quite safe to presume that this cupboard was to receive the most precious results of the prince's iatrochemical efforts.

The painting to the right of the statue of Apollo shows the m a n u f a c t u r e o f w o o l by Mirabello Cavalori, with the production stages of cleaning and carding. In the right foreground wool is being cooked in an enormous cauldron filled with boy's urine. This cooking process is linking the whole subject up to the fire theme, but the painting also refers to the sources of the

Medici riches which indeed had been created two centuries ago in the wool trade.

On the cupboard door beneath we find a very strange story: Mirabello Cavalori shows a woman whose hair is just catching fire from an altar. The story is told by Virgil: after the fall of Troy Aeneas after many meanderings had finally landed in Latium, where his arrival was fortold by the following oracle: "While with hallowed torch the prophet kindles the altars, and at her fathers side stands the maiden Lavinia, she was seen (o horror!) to catch fire in her long tresses, and burn with crackling flame in all her headgear, her queenly hair ablaze, ablaze her jewelled coronal; then wreathed in smoke and yellow glare, she scattered fire throughout the palace..." (Virgil, Aeneid, VII, 71 ff.). The theme does not seem to have an obvious relation to any kind of objects which might have been kept in this cupboard. The fire "leitmotiv" however is quite striking.

Jacopo Coppi is the author of the next painting in the upper file, which shows the fabrication of black powder, with the first known painted portrait of the mythical monk Berthold Schwarz who in 1354 allegedly had made this invention. Schaefer has pointed out that fact recently.
Below, by the same artist, a scene showing the family of Darius before Alexander.

Giovan Maria Butteri is the author of the next painting in the upper file, showing a glass furnace with work in full progress. In the left half of the painting we see a good full length portrait of the Duke examining some glass vessels offered him by one of the craftsmen. The remarkable thing about this painting is that it is technologically absolutely perfect; the kind of oven is amply described by Agricola and Libau as being of the reverberating type. The upper part with its circular holes is the so-called "cooling"-oven. In front of the furnace a workman is reducing glass leftovers to a powder. We remember the silicate glass problem.

Below the glass furnace we have again an Aeneas scene by the same painter. The sixth book of the Aeneis (VI, 8 f.)tells about the landing in Italy and the invention or finding of glass. For making fire the Troians first had to dig up veins of flint or firestone, and again we feel we can identify the Duke in the figure of Aeneas.

Pliny in his Historia Naturalis (XXXVI, 65) has embellished this myth by making this the occasion of the invention of glass: when the Greek did not find enough wood for their fires they put soda stones on, which melting down left glassy lumps.

This rectangular painting in the upper file is the g o l d - s m i t h e r y as painted by Alessandro Fei called "del Barbiere". This craft had a great importance at the Medici court; the painting is full of allusions to factual circumstances. The two goldsmiths at their workbench in the foreground might well be portraits, with the right one working on a crown - we immediately recognize the grandducal crown employed in March 1570 in the Roman coronation ceremony for Cosimo I. In the middle background two craftsmen are casting gold and silver bullion, the melting furnaces in the background are installed in an architecture which clearly recalls that of the Uffizi, a touch which might have pleased Vasari, and which of course is also true for the painting with the fabrication of black powder and the glass blowing scene.

Alessandro Fei has contributed just this one topic. It must be paired with Niccolò Betti's "Looting of a city". Perhaps this topic is to add a slightly moralizing touch, showing the avidity with which man hunts for these precious objects. Perhaps the sacking of Troy is meant ? It might be safely assumed that the cupboard behind this painting held objects similar to those shown in the foreground.

Next the key painting on this wall: the so-called "alchemists laboratory" or "bottegha di lambicchi" (as Borghini calls it in the intermediate sketch published by Michael Rinhehart). This painting found a special applause of Borghini and others who judged it to be a "ribalda cosa".
We are looking into the interior of what must have been a typical well-staffed alchemist laboratory of the time, this also installed in an architecture which might well be that of the Uffizi. Giovanni Stradano or -as he originally was called in his northern homeland - Jan van der Straet shows in the right foreground the Duke himself, stirring some greenish liquid in a pan, but intensely watching a classical slow distilling oven in front of him. This apparatus also holds the artists signature. The centre space is being occupied by a big distilling oven, fresh coal is just being poured into the central funnel or chute. In the left background we see an elderly

scientist writing up a protocol or studying one, behind the central distilling apparatus we can just glimpse an open space which evidently serves as a storage area. One of the key figures in the painting seems to be the venerable old scientist who seems to be talking about the Duke and his operation. Again Schaefer might be right in supposing this to be the portrait of the Flemish scholar and court botanist Joseph Goedenhuyse (Giuseppe Benincasa), who in 1595 was to end his days as head of the Pisan botanical gardens. He certainly was one of the three "philosophers" whom we find apostrophied in letters about alchemy in the Medici archives. In the left part of the painting plant juices are being extracted under high pressure.

Below that, also by Giovanni Stradano, we have in an oval the subject "Ulisse che ha il moly da Minerva", a beautiful subject if we wish to test our student's knowledge in classical lore and iconography. The scene is derived from the tenth book of the Odyssey, where Odysseus comes to the house of Kirke and is given the herb 'moly' by Mercury, on order of Minerva. The plant will help him to free his men from the enchantment which has turned them into pigs, as we see in the background. The amusing subject of course has heavy alchemical and iatrochemical allusions, and here again we can be quite certain about the contents of the cupboard.

The last painting before the niche with the statue of Vulcan in the upper file is Francesco Poppi's "Foundery of Bronzes". The allusions to Medici rule are evident in the crest on the cannon which is just being worked on.
Below, again by Francesco Poppi, we see Alexander the Great giving away his favorite concubine Campaspe to the painter Apelles who - while painting her on the king's orders in the guise of Venus Anadyomene - very understandably fell in love with her. Alexander caused the two to be married. The theme is clearly connected up with the'fire'wall by Borghini, otherwise it would be difficult to do so. Originally the painting should have shown Alexander amidst coins and medals, but in the sketch published by Rinehart it is clearly identified.
Still, in the background there are shown pieces of bronze sculptures which recall contemporary works by Giambologna and Vincenzo Danti.

The last painting on this wall, the one beneath the niche with the statue of Vulcan, show the half-god's forge with cyclops working near it. This topic clearly has the same function as the one beneath

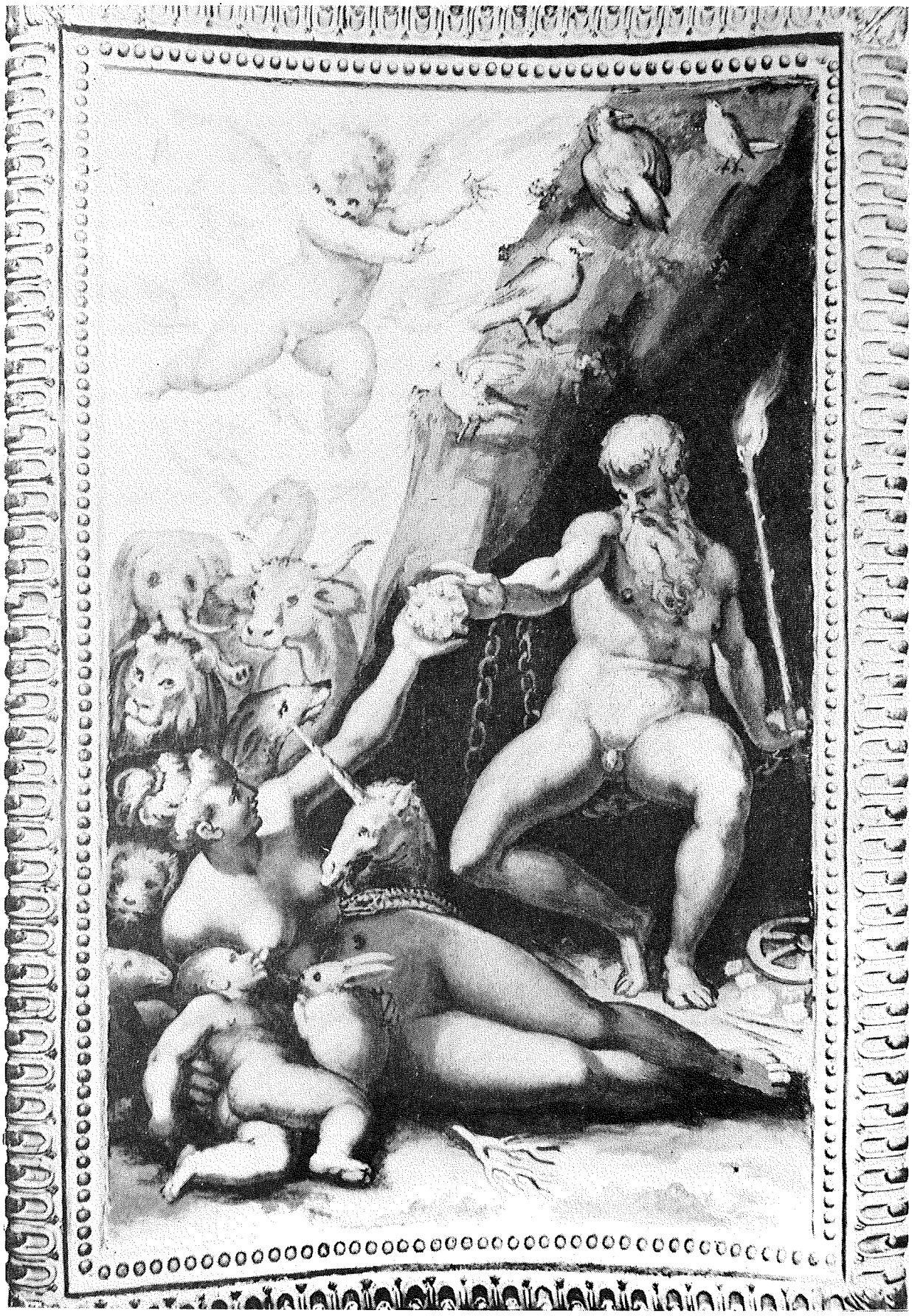
the Apollo niche: enhancing the theme in the light of the leitmotiv given by the statue.

This slide shows again the whole room, and one can have a general impression on how all the other walls are decorated with the same precious paintings which not only show the highest mark of contemporary art but also the imaginative genius of the artistic entrepreneur Giorgio Vasari. We will not try on this occasion to follow up the single subjects within the general frame of the four elements, since the wall dedicated to the element of f i r e clearly is given the most importance within the general scheme, nowhere else the figure of the future grand duke is shown as often as here.

Since its reconstruction in 1910 this ensemble has deeply troubled the minds of the onlookers. I haven't mentioned yet the astounding fact that the room has no windows and this treasure trove of late sixteenth century paintings only came to life on the rare occasions when the prince came to visit them. And more: the ensemble was relatively short lived. Already in 1585 the Duke began to have it dismantled by having the bronzes transferred into a new room in the Uffizi, called the "tribuna", which up to our days was to hold the greatest treasures of the Medici art collections. The paintings were stored away in the Pitti palace.

Let us again raise our eyes up to the vault and its central painting by Morandini. It holds the key to the whole ensemble and at the same moment presents the greatest difficulties for interpretation. As we have already heard Borghini planned to put the 'stanzino' under the general theme of n a t u r e and a r t , and art evidently is personified in the mythical figure of Prometheus. It is quite legitimate to ask for the meaning of this binomial or common place for the end of the 16th century, and what it might have meant for the prince who commissioned such a room, and who was such an eminent scientist, if we can believe the contemporary sources.

Let us first look at the painting itself. Nature in the form of a well-coiffed woman is shown lying at the feet of the great artificer. She is surrounded by different kinds of objects and animals. She suckles a child (boy or girl ?) and a unicorn, a serpent is near, behind her we discern european and foreign animals like lions, oxen, elefants, dromedars. The air is filled with birds, many of them also are nesting on the rocks of Caucasus, a putto is very evident (a demon ?).



Francesco Morandini da Poppi, Nature and Prometheus
Florenz, Palazzo Vecchio, Stanzino del Principe 1570.

At first sight is seems evident that objects and animals around nature are introducing the general theme of the program which then is elaborated on the four walls. In fact animals and objects deriving from the elements of water, earth and air are to be seen. The element of fire is present in the hand of Prometheus, who holds a great staff of fennel, ablaze with the fiery charcoal he had broken from the chariot of the sun. This was one of the reasons why Zeus had him chained to Mount Caucasus. We already mentioned that within gnostic thought fire was the element which was believed to have the power of creation and that therefore it was especially connected up with the creative aspects of "art" in its meaning of empirical prowess.

But there is more to this painting. The relation between n a t u r e (whom Borghini declares to be "compagna") and a r t , as impersonated by Prometheus, is very disturbing. We all are aware of the binomial commonplaces about art and nature which have been running through literature since antiquity, came unbroken through the middle ages and as such had arrived up into Renaissance where they got a fresh impetus in humanist thinking. In all such manifestations art is always second to nature: if it is imitating nature, if it ministers or complements it, if art is based on the experience or study of nature, if art makes use of materials furnished by nature, or if art has its beginnings in nature. Art has even said to ape nature. Here, however, we find nature lying at the feet of the artificer as if serving him.

The second observation to make is about the objects shown as nature's immediate attributes. What has the unicorn to do here, so near to her fertile breast? What of the hare, does the serpent just serve as an indicator for the element of water, together with the coral? What is the substance nature is offering Prometheus? And what is the child, male or female which is suckled by nature?

If for an instant we pause to remember the historical situation in which this work had been commissioned, it is quite legitimate to point out that most of these single features can be connected up to some more or less hermetic symbolism. Without wanting to follow up these promising possibilities for deep interpretation I just want to mention that the serpent not only stands for moisture, but also point to the ourobouros, the alchemists

symbol for Hydrargus or Mercury's potentialities in the alchemists laboratory. The unicorn might be a reference merely to a unicorn deal which the prince just in this period seems to have had under way; the horn of the unicorn amongst other arcane properties was said to be very effective against all sorts of poison. But the symbolism of this might also be extended into christian realms as the northern mage Paracelsus did when he names it as a symbol for Christ, or for the chastity of Adam and Eve, or as it were of nature which is a virgin genetrix, and in alchemy the unicorn might be used to describe substances that are being changed in the course of the adept's operations, or again it might stand for the singular properties of mercury or quicksilver.

All this is very probable, and as I have said, it is quite legitimate to read one or all aspects into this painting. It seems however, that up to now one possible source has escaped research, which might bring us a step further in interpreting the painting.

It is known that in 1460 a certain Leonardo da Pistoia had brought a manuscript titled "pimander" into the hands of the elder Cosimo. This greek text, whose author was believed to be one Hermes Trismegistos, was also called "Tabula Smaragdina"; it had been known in fragmentary form through all middle ages, mainly with the help of compilations and Florilegia by John the Stobean who had flowered in the 4th century A.C., but also from St. Cyrillus and others; these fragments had whetted the appetites of the adepts already long before the 15th century, now at last there was an authentic copy in a good state of preservation. Marsilio Ficino immediately took time off from his translation of Plato's work and started a Latin translation, which however was not yet finished when Cosimo the Elder died in 1464. In 1471 we have the first printing, and after that these texts, which contain 12 Logoi or chapters, were in constant demand; until 1600 they had enjoyed 16 printed editions in many languages.
Contemporary to the establishment of this key text by humanistic research it was realized, probably by the great Ficino himself, that the authorship of Hermes had to be assigned yet to another group of gnostic writings or fragments bearing the name "Asclepios". They were found included in the collectanea of John the Stobean.

The great critical edition of these 4th century texts was done by the father Festugière and the American Nock in 1945-1954, and

for all matters of philology or interpretation of these texts I refer to him and mainly to Reitzenstein. The point which I would like to raise here is, that there are two instances of cosmogonies in this group, one in the first-mentioned "Tabula Smaragdina", the second in the less well known group called "Asklepius". The fragment which is very fittingly called "Kore Kosmou" (daughter of the Kosmos), has been given by the abovementioned authors the number XXIII. Allow me to cite from verse 9 on and while listening look again at the painting before you.

"Nature at first continued to be infertile, until God who reigns over the universe was asked: 'we pray, look upon what already exists and upon what perhaps in the future we will have need of'. God smiled over these words and said: ' Let there be nature'. A female object of great beauty responded to his voice. So God the first father honoured her with the name of nature and ordered her to be fertile...after nature had merged with 'labour'(NB. there we might hazard the guess that Prometheus symbolizes also 'labour' in our painting) she gave birth to a beautiful daughter whom she called 'invention'..."

After that God becomes very busy and creates with his own hands and with the assistance of the element of fire and ether a lot of immaterial beings which are called souls. He then proceeds to use the other two elements (earth and water) to create the signs of the Zodiac in human form and has them partake from the souls he had created before. The rest of this mixture he leaves to the gods and demons to work upon.
Into this picture now steps Horus who uses the upper layer of this broth to create the volatiles or birds; the second layer, which already is starting to solidify, will be the substance for the quadrupeds. The rest, which already has cooled off, is used for the creation of reptiles and such. In the end Horus creates Man. All creation partakes of the soul which God had created from fire and ether, love and necessity will reign over all. Of animals this fragment expressly makes mention of lions, fishes and dolphins.

The fragment XXV (verse 6 f.) speaks about the regions which all creation has to live in. I cite: "Men first are confined to one and the same realm as eagles, doves, swns, falcons, swallows, sparrows, flies, serpents, lions, leopards, wolfes, dogs, hares, as beef and mutton.

...Some animals belong to an ambiguos realm, such as seals, sea serpents (enhydris is the term used), turtles and crocodiles".

After their liberation from this confination each animal seeks out its own region. Man goes for the open spaces and his own houses, eagle flies up into the ether, doves people the air near the earth and falcons fly a bit higher. Swallows go to the places men live in, sparrows fly around fruit trees, swans retire to where they can sing in peace, flies go down to earth, lions and leopards run away to the mountains, wolves into the deserts, the dog follows man's traces, hares run into the bushes, cattle go to their stables and out to graze, sheep also graze, serpents creep into their holes in the earth, the otters, turtles and animals of thesame kind go into waters and rivers.." so far the fragments of Asclepius. Aren't they a nice illustration to the painting and vice versa!

Now that we have presented one possible source for some of the subject matters in Morandini da Poppi's painting we might leave it at that; nevertheless the relation between nature and her child 'invention' (a key term for Renaissance artistic theory: disegno) on one hand, and a r t or the artificer Prometheus on the other remains ambiguous.

This brings me to make some final remarks on the terms "science", "nature" and "art". They have to do very much with the program of the "stanzino" and this program clearly reflects a particular outlook on the wonders of creation, an outlook and a way of thinking that have become utterly strange to us. Nevertheless in order to talk rationally about certain moments in the history of the sciences we must - to my opinion -avoid judging them fromthe high pinnacle of our own achievements (?!) but rather try and penetrate as deeply as possible into the "Zeitgeist" of the period we are observing.

To do this it might help to cast a fleeting glance on another work by Marsilius Ficinus which has had a very decisive impact on this particular pre-galilean historical situation. I mean the three books on how to lead a good and long life which Ficino had dedicated to Lorenzo "il Magnifico", and there especially the third volume "De Vita Cœlitus Comparanda" (how life should be set into comparison or relation with heaven), which in his manuscript is dated 15 Sept 1489 Careggi. This was written, as Ficino

himself informs us,
in the middle of the commentary on Plotinus, and it gives us the gist of the platonic academy of Careggi. Ficino cites expressly the Asklepius fragments as one of his authorities, insists on the principle of one permeating soul of the universe created from fire and ether, of which every other part of creation partakes, from the signs of the zodiac down to the minerals. This gnostic concept has - as we know - also had a crucial importance for the thinking of the northern mage Theophrastus Paracelsus. - In order not to tax your patience any longer, I want to close with some aphorisms on the approach science in the ending 16th century still took when confronting the wonders of creation.

Man up to Kopernikus and Galilei was used to living in a closed system. Macrocosm and microcosm were mirroring each other, they were - as I already mentioned - felt to be permeated by one soul, and in action and reaction showed a well definable correspondence or relation. Astrology, alchemy, iatrochemical efforts, mineralogy and the science of talismans, and medicine until the middle of the 16th century were thought to be part of one system and intimately related to each other. It was the object of scientific empirism to reveal ever more of these high secrets, correlations and interdependencies between heaven, earth and man, if necessary with the employment of magic.

In another occasion I have hazarded a formula: up to the 17th century man was living in a closed, centripetally organized system with a finite number of elements combining in forming a finite number of phenomena within creation. Science's task was - with the help of well-applied fire - to uncover as many of the seemingly infinite correlations between the visible and invisible (excuse the pun) phenomena of creation. Therefor research, "art", empiricism worked on nature, parting from visual and touchable things by trying to change them f.e. by extraction, and thus partake of their inner properties, those which connected them up with a higher sphere, find and use their inherent magic. Such a goal of course cannot be achieved by mere empiricism or artisan's skill. This is why alchemy or iatrochemistry were understood to be an eminently philosophical and meditative activity.

This outlook on the world and its wonders has never died. It has even been able to remain a legitimate pastime long after Kopernikus

and Galilei came and - you will excuse me - took the soul out of our universe; this phrase is no invention of mine. From Galilei on we have the development of what in the 19th century was being apostrophied as "exact sciences" which - I believe - had their culminating point in the middle of last century when in 1846 the periodic table of elements was established. Again a revolution is taking place now, and we are in the middle of it.

Aristocratic? Popular? Certainly science before the 17th century, deeply rooted in tradition as it was, provided - as Ravetz has very correctly stated - comfort and reassurance in the face of the uncertainties which man has always experienced. Certainly development and influence can work both ways: certain magical practices in folk-science of the preceding centuries became quite accepted techniques for scientists at certain periods; on the other hand no downfall was as terrible as science has experienced after 1600; and certainly it may be stated that nearly every art which man knew to exercise before this dramatic change, after it came about was disdainingly flung down from its high chair to continue in its less holy aspects on the level of popular pseudo science. The causes for this deep transformation in human thought will perhaps remain a mystery, but the survival of the old in the new was to present a serious embarassment for established science, and it still does!

Haifa, 1rst June 1983

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