



Iahn Carter Brown Library Brown Aniversity











THE ELEMENTS OF ARCHITECTVRE. Collected by HENRY WOTTON Knight,

002

from the best Authors and Exam-

ples.

LONDON Printed by IOHN BILL. M.DC.XXIV.





THE PREFACE.

Shall not neede (like



the most part of Writers) to celebrate the Subject which I deliuer. In that point I am at ease. For Architecture, can want no commendation, where there are Noble Men, or Noble mindes; I will therefore spend this Preface, rather about those, from whom I have gathered my knowledge; For I am but a gatherer and disposer of other mens



THE PREFACE. Our principall Master is Vitruuius and sof shall often call him; who had this felicitie, that he wrote when the Roman Empire was neere the pitch; Or at least, when Augustus (who fauoured his endeauours) had some meaning (if he were not mista-Tacit. lib.1. ken) to bound the Monarchies This I say was his good happe; For in growing and enlarging times, Artes are commonly drowned in Action: But on the other side, it was in truth an vnhappinesse, to expresse himselfe so ill, especially writing (as he did) in a season of the ablest Pennes; And his obscuritie had this

Annal.



THE PREFACE.

were best practised, and best followed by his owne Countrymen; yet after the reuising and repolishing of good Literature, (which the combustions and tamults of the middle Age had vnciuillized) he mas best, or at least, first pnderstood by strangers: For of the Italians that tooke him in hand, Those that were Gramarians seeme to haue wanted Mathematicall knowledge; and the Mathematicians perhaps wanted Gramer : till both were sufficiently conioyned, in Leon-Batista Alberts the Florentine, whom 7 repute the first learned Architect, beyond the Alpes; But hee studied more indeede to



THE PREFACE.

make himselfe an Author, then to illustrate bis Master. Therefore among his Commenters, 7 must (for my private conceite). yeild the chiefe praise onto the French, in Philander; and to the high Germans, in Gualterus Riuius: who, befides bis notes, bath likewise published the most elaborate translation, that I thinke is extant in any vulgar speech of the world: though not without bemaying, now and then, some defect of Artificiall tearmes in his owne; as I must likewise; For if the Saxon, (our mother tongue) did complaine; as instly (Idoubt) in this point may the Daughter: Languages, for the



THE PREFACE. most part in tearmes of Art and Erudition, retayning their originall pouertie, and rather growing rich and abundant, in complementall phrases and such froth. Touching divers moderne men that have written out of meere pra-Eise, I shall give them their due, vpon occasion.

And now, after this short Cenfure of others, I would faine satiffie an Objection or two, which seeme to lie somewhat heauily vpon my selfe; It will be said that I handle an Art, no way suteable either to my employments, or to my fortune. And so I shall stand charged, both with Intrufion, and with Impertinency.



THEPREFACE.

To the First 7 answere, that though by the ever acknowledged goodnesse of my most deare and gracious Soveralgne; and by his long indulgent toleration of my defects. I have borne abroad some part of his civill feruice; yet when I came home, and was againe resolued into mine owne simplicitie, f found it sitter for my Pen (at least in this first publique aduenture) to deale with these plaine compilements, and tractable Materials; then with the Laberynthes and Mysteries of Courts and States; And lesse presumption for mee, who have long contemplated a famous Re-

publique, to write now of Architecture;

an shreek an ort.

THE PREFACE. tecture; then it was anciently for *Hippodamus the Milessian, to *Aristot. 2. lib.Politi. write of Republiques, who was cap. 6. himselfe but an Architect.

To the Second, I must shrinke vp my shoulders, as I have learn'd abroad, and confesse indeed, that my fortune is very vnable to exemplifie, and actuate my Speculations in this Art, which yet in trueth, made mee the rather even from my very disabilitie, take encouragement to bope; that my present Labour, would find the more fauour with others, since it was vndertaken for no mans fake, lesse then mine owne. And with that costidence, I fel into these thoughts; Of which them



THE PREFACE. be delivered; The one Historical, by description of the principall workes, performed already in good part, by Giorgio Vassari in the lines of Architects: The other Logicall, by casting the rules and cautions of this Art, into some comportable Methode: whereof I have made choice; not onely as the shortest and most Elementall; but indeed as the soundest. For though in practicall knowledges, euery complete example, may beare the credite of a rule; yet peradueture rules should precead, that we may by them, be made sit to iudge of examples: I berefore to the purpose; for 1





OF THE ELEMENTS OF ARCHITECTVRE.

The I. part.



N Archite Eture as in all other Operative Arts, the end must direct the Operation.

The end is to build well. Well building hath three Conditions. Commoditie, Firmenes, and Delight. A common duifion among the Deliucrers of this Art, though I know not



2 The Elements how, some what misplaced by Vitruuius himselfelib. 1. cap. 3. whom I shalbe willinger to follow, as a Master of Proportion, then of Methode.

Now, For the attayning of these Intentions, wee may consider the whole SubieEt, vnder two generall Heads.

The Seate, and the Worke.

Therefore first touching Scituation. The Precepts thereunto belonging, doe either concerne the Totall Poliure, (as I may tearm it) or the Placing of the Parts: wherof the first fort, how socier vhially set downe by Architeets as a piece of their Profession: yet are in truth borrowed, from other Learnings: there being betweene Arts and Sciences, as well as betweene Men, a kinde of good fellowship, and communication of their Principles.

For you shall finde some of them, to

bemeerely Physicall, touching the quality

of Architeaure. litie and temper of the Aire: which being a perpetuall ambient, and ingredient, and the defects thereof, incorrigible in fingle Habitations (which I most intend) doth in those respects, require the more exquisite caution; That it be not too grosse, nor too penetratiue; Not subiect to any foggy noysomnesse, from Fenns or Marshes neere adioyning; nor too Mineral exhalations, from the Soile it selfe. Not vndigested, for want of Sunne, Not vnexercised, for want of Winde: which wereto liue (as it were) in a Lake, or standing Poole of Aire, as Alberti the Florentin ArchiteEt, doth ingeniously compare it.

Some doe rather seeme a little Aftrological, as when they warne vs from Places of malign Inflaence: where Earthquakes, Contagions, Predigious Births, or the like, are frequent without any euident cause: whereof the Consideration is peraduenture not altogether.



vaine: Some are plainely Oeconomical; As that the Seate be well watered, and well fewelled, That it bee not of too fteepie and incommodious Accesse to the trouble both of friends and familie. That it lie not too farre, from some nauigable River or Arme of the Sea, for more ease of prouision and such other Domestique notes.

Some againe may bee faid to bee Optical? Such I meane as concerne the Properties of a well chosen Prospect: which I will call the Royaltie of Sight. For as there is a Lord/hip (as it were) of the Feete, wherein the Master doth much ioy when he walketh about the Line of his owne Possies: So there is a Lord/hip likewise of the Eye which being a raunging, and Imperious, and (I might fay) an vosurping Sence, can indure no narrow circumscription; but must be fedde, both with extent and varietie. Yet on the other fide, I finde



of Architecture. 5 drowne all apprehension of the vttermost Obiests, condemned, by good Authors, as if thereby some part of the pleasure (whereof we speake) did perish. Lastly, I remember a private Caution, which I know not well how to sort, vnlesse I should call it Political. By no meanes, to build too neere a great Neighbour; which were in truth to bee as vnfortunately seated on the earth, as Mercurie is in the Heavens, for the most part, ever in combustion, or obscuritie, vnder brighter beames then his owne.

From these severall Knowledges as I haue said, and perhaps from some o- *Heurnius* ther doe Architects derive their Do Instit: Meetrine about election of Seats: wherin dicin: lib.7. I haue not beene so severe, as a great Scholer of our time, who precisely rescholer of our time, who prec



6

The Elements

would haue the first salutation of the Spring. But such Notes as these, wheresoeuer we finde them in graue or'slight Authors, are to my conceite rather wishes then Precepts; and in that qualitie, I will passe them ouer. Yet I must withall say that in the seating of our selues (which as a kinde of Marriage to a Place). Builders should bee as circumspect as Wooers; lest when all is done that Doome befall vs, which our Master doth lay vpon Mitylene : A Towne in truth (saith hee) finely built, but foolishly planted. And so much touching that, which I termed the Totall Posture.

The next in Order is the placing of the Parts; About which (to leaue as little as I may in my prefent labour, vnto Fancie, which is wilde and irregular) I will propound a Rule of mine owne Collection, vpon which I fell in this maner. I had noted, that all Arte was then in truest perfection, when it

Opidum quidem_ adificatum eleganter fed imprudenter politum.



of Architecture. might bee reduced to some naturall Principle. For what are the most iudicious Artifans but the Miniques of Nature? This led me to contemplate the Fabrique of our owne Bodies, wherein the High ArchiteEt of the world, had displaied such skill, as did stupisie, all humane reason. There I found the Hart as the fountaine of Life placed about the Middle, for the more equall communication of the vitall spirits. The Eyes seated aloft, that they might describe the greater Circle within their view. The Armes proiected on each. side, for ease of reaching. Briefly (not to loose our selues in this sweet speculation) it plainely appeareth, as a Maxime drawne from the Diuine light; That the Place of euery part, is to be determined by the Vse.

So then, from naturall *structure*, to proceed to Artificiall; and in the rudeft things, to preserve some Image of the excellent eft. Let all the principall chambers

chambers of Delight, All Studies and Libraries, be towards the East : For the Morning is a friend to the Muses. All Offices that require heat, as Kitchins, Stillatories, Stoues, roomes for Baking, Brewing, Washing, or the like, would be Meridionall. All that need a coole and fresh temper, as Cellers, Pantries, Butteries, Granaries, to the North. To the same sidelikewise, all that are appointed for gentle Motion, as Galleries, especially in warme Climes, or that otherwise require a steadie and vnuariable light, as Pinacothecia (faith Vitruuius) by which he intendeth, (if I may guesse at his Greeke, as wee must doe often euen at his Latine) certaine Repositories for workes of rarity in Picture or other Arts, by the Italians called Studioli, which at any other Quarter, where the course of the Sunne doth diuersifie the Shadowes, would loose much of their grace. And by this



of Architecture. 9 VJe, any other Part may bee fitly accommodated.

I must here not omit to note that the Ancient Grecians, and the Romanes by their example in their buildings abroad, where the Seat was free, did almost Religiously scituate the Front of their houses, towards the South; perhaps that the Masters Eye, when hec came home, might not be dazeled; or that being illusirated, by the Sunne, it might yeeld the more gracefull Aspect; or some such reason. But from this, the Moderne Italians doe varie; wherof I shall speake more in another place, Let thus much suffice at the present for the Position of the scuerall Members, wherein must beehad as our Author doth often infinuate, and especially lib. 6. cap. 10: a singular regard, to the nature of the Region: Euery Nation, being tyed aboue al Rules what soeuer, to a discretion, of prouiding against their owne Inconueniences : And there-



10 The Elements fore a good Parler in Ægypt would perchance make a good Celler in England.

There now followeth the second Branch of the generall Section touching the Worke.

In the Worke, I will first confider the principall parts, and afterwards the Accessorie, or Ornaments; And in the Principall, first the Preparation of the Materials, and then the Disposition, which is the Forme.

Now, concerning the Materiall part; Although surely, it cannot disgrace an ArchiteEt, which doth so well become a Philosopher, to looke into the properties of Stone and Wood: as that Firre Trees, Cypresses, Cedars, and such other Aereall aspiring Plants, being by a kinde of naturall rigour (which in a Man I would call pride) inflexible downewards are thereby fittest for Posts or Pillars or such vpright vsc; shat



of Architecture.

IL

on the other side, Oake, and the like true hartie Timber being strong in all positions, may bee better trulted in crosse and trauerse worke, for Summers, or guirding and binding beames, as they tearme them. And so likewise to observe of Stone, that some, are better within, and other to beare Weather : Nay, to descend lower euen to examine Sand and Lyme, and Clay (of all which things Vitruuius hath discoursed, without any daintines, & the most of new Writers) I say though the Speculatine part of such knowledge be liberall: yet to redeeme this Profession, and my present paynes, from indignitic; I must heere remember that to choole and sort the materials, for euery part of the Fabrique, is a Dutie more proper to a second Superintendent, ouer all the Vnder Artifans called (as I take it) by our Author, Officinator lib 6. cap. 11. and in that Place expressely distinguished, from the ArchiteEt, whole glory doth



more confist, in the Designement and Idea of the whole Worke, and his truest ambition should be to make the Forme, which is the nobler Part (asit were) triumph ouer the Matter : whereof I cannot but mention by the way, a forreigne Paterne, namely the Church of Santa Giustina in Padoua: In truth a sound piece of good Art, where the Materials being but ordinarie stone, without any garnishment of sculpture, doe yet rauish the Beholder, (and hee knowes not how) by a secret Harmony in the Proportions. And this indeede is that end, at which in some degree, we should ayme euen in the priuatest workes: whereunto though I make haste, yet let me first collect, a few of the least triviall cautions, belonging to the Materiall Provision.

Leon Batista Alberti, is so curious, asto wish all the Timber, cut out of the same Forrest, and al the Stone, out of the same Quarrie.



of ArchiteEture.

12

Philibert de l'Orme the French Architect goes yet somewhat further, and would haue the Lyme made of the very fame Stone, which wee intend to imploy in the Worke; as belike imagining that they will sympathize and ioyne the better, by a kinde of Originall kindred. But such conceits as these seeme somewhat too fine among this Rubbage, though I doe not produce them in sport. For furely the like agreements of nature, may haue oftentimes a difcreet application to Art. Alwayes it must be confessed, that to make Lyme without any great choyce of refuse stuffe, as we commonly do, is an English error, of no small moment in our Buildings. Whereas the Italians at this day, and much more the Ancients did burnetheir firmest stone, and euen fragments of Marble where it was copious, which in time became almost Marble againe, or at least of indisfoluble duritie, as appeareth in the standing Thea-

B 3 ters.

14

ters. I must here not omit, while I am speaking of this part, a certain forme of Bricke described by Daniele Barbaro Patriarch of Aquileia, in the largest Edition of his Commentary vpon Vitruuius. The Figure triangular, euery fide a foot long, and some inch and a halfe thicke, which he doth commend vnto vs for many good conditions : As that they are more commodious in the management, of lesse expence, of fayrer show, adding much beautic & strength to the Murall Angles, where they fall gracefully into an indented Worke : so as I should wonder that wee have not taken them into vse, being propounded by a man of good authoritie in this knowledge; but that all Nations doe start at Nouelties, and arc indeede maried to their owne Moulds. Into this place might aptly fall a doubt, which some haue wel moued; whether the ancient Italians did burne their Bricke or

no; which a passage or two in Vitrusius hath

of Architecture. 15 hath left ambiguous. Surely where the Natural heat is strong enough, to supply the Artificiall, it were but a curious folly to multiply both Labour and Expence. And it is belides very probable, that those Materials with a kindely and temperate heate would proue fairer, smoother, and lesse distorted, then with a violent : Onely, they fuffer two exceptions. First, that by fuch a gentle drying much time will bee lost which might otherwise bee employed in compiling. Next, That they will want a certaine sucking and soaking Thirstinesse, or a fiery appetite to drinke in the Lime, which must knit the Fabrique. But this question may be confined to the South, where there is more Sunne and patience. I will therefore not hinder my course, with this incident scruple, but close that part which I haue now in hand,



16

caution: That sufficient Stuffe and Money bee euer ready before we beginne: For when wee build now a piece, and then another by Fits, the Worke dries and finkes vnequally, whereby the Walles growe full of Chinques, and Crenices; Therefore such pawsings are well reprodued by Palladio, lib. 1. cap. 1. and by all other. And so having gleaned these few remembrances, touching the preparation of the Matter, I may now proceede to the Diffosition thereof, which must forme the Worke. In the Forme, as I did in the Seate, I will first consider the generall Figuration, and then the several Members.

Figures are either fimple or Mixed. The fimple be either (ircular or Angular. And of Circular, either (ompleate, or Deficient, as Ouals, with which kindes I will bee contented, though the Diftribution might bee more curious.



of Architecture, 17 Now the exact (ircle is in truth a Figure, which for our purpose hath many fit and eminent properties; as fitnesse, for Commodity and Receit, being the most capable; fitnesse for strength and duration, being the most vnited in his parts; Fitnesse for beautie and delight, as imitating the celestiall Orbes, and the vniuersall Forme. And it seemes, besides, to have the approbation of Nature, when thee worketh by Instinct, which is her secret Schoole : For birds doe build their nests Spherically: But notwithstanding these Attributes, it is in truth a very vnprofitable Figure in priuate Fabriques, as being of allother the most chargeable, and much roome loft in the bending of the Walles, when it comes to bee diuided : besides an ill distribution of light, except from the Center of the Roofe. So as anciently it was not vsual, saue in their Temples and Amphi-Theaters, which needed no



18

The Elements

Compartitions. The Ouals and other imperfect circular Formes, haue the same exceptions, and lesse benefite of capacity: So as there remaynes to bee considered in this generall survey of Figures, the Angular, and the Mixed of both. Touching the Angular, it may perchance sound somewhat strangely, but it is a true observation, that this Art doth neither loue many Angles nor few. For first, the Triangle which hath the fewest sides and corners, is of all other the most condemned, as being indeed both incapable and infirme (wherof the reason shall be afterwards rendred) and likewise vnresoluable into any other regular Forme then it selfe, in the inward Partitions.

As for Figures of fiue, fix, seuen, or more Angles; They are surely fitter for Militar ArchiteEture, where the Bulworks may be layed out at the Corners, and the sides serue for Curtaines, then for ciuill vsc; though I am not igno-



of Architecture.

19

rant of that famous Piece at Caprarola, belonging to the house of Farnese, cast by Baroccio into 'the forme of a Pentagone, with a Circle inscribed, where the Architest did ingeniously wrestle with divers inconveniences in disposing of the Lights, and in faving the vacuities. But as designes of such nature doe more aymeat Rarity, then Commoditie : so for my part I had rather admire them, then commend them.

These things confidered, we are both by the Precepts and by the Pra-Aise of the best Builders, to resolue vpon *Rectangular Squares*, as a meane betweene too few, and too many Angles; and through the equall inclination of the fides (which make the right Angle) stronger then the *Rhombe*, or *Lo-Jenge*, or any other irregular *Square*. But whether the exact *Quadrat*, or the long *Square* be the better, I finde not well determined, though in mine



20

owne conceit I must preferre the latter, prouided that the Length doe not exceede the Latitude aboue one third part, which would diminish the beauty of the Aspect, as shall appeare when I come to speake of Symmetry and Proportion.

Of mixed Figures, partly Circular, and partly Angular, I shall neede to say nothing; because having handled the simple already, the mixed according to their composition, doe participate of the same respects. Onely against these, there is a proper Objection, that they offend *Uniformity*: Whereof I am therefore opportunely induced to say somewhat, as farre as shal concerne the outward Aspect, which is now in Discourse.

In Architecture, there may seem to be two opposite affectations, Vnifermitie and Varietie, which yet will very well suffer a good recocilement, as we may see in the great Paterne of Nature, to


of Architecture. 21 which I must often resort: For surely there can be no Structure, more vniforme, then our Bodies in the whole Figuration : Each fide, agreeing with the other, both in the number, in the qualitie, and in the measure of the Parts: And yet some are round, as the Armes, some flat, as the Hands, some prominent, and some more retired : So as vpon the Mater, wee see that Diuersitie doth not destroy Vniformitie, and that the Limmes of a noble Fabrique, may bee correspondent enough, though they be various; Prouided alwayes, that we doe not runne into certaine extrauagant Inuentions, whereof I shall speake more largely, when I come to the parting and calting of the whole Worke. We ought likewile to auoyde Enormous heights of fixe or seven Stories, as well as irregular Formes; and the contrary fault of low-diftended Fronos, is as vnseemely: Or againe, when the Face of the Building, is nar-



row and the Flank deepe; To all which extreames, some particular Nations, or Townes, are subject, whose Names may be civilly spared: And so much for the generall Figuration, or Aspect of the Worke.

Now concerning the Parts in Seueraltie. All the parts of euery Fabrique, may be comprised vnder fiue Heads, which Diuision I receiue from Batista Alberti, to doe him right. And they be these.

ignor The Foundation. And had been one

22

The Appertions or Ouertures. The Compartition. And the Couer.

About all which I purpose to gather the principall Cautions, and as I passe along, I will touch also the naturall Reasons of Art, that my discourse may be the lesse Mechanical.

First then concerning the Foundation, which require th the exact est care; For



of ArchiteEture. 22 if that happen to dance, it will marre all the mirth in the House: Therefore, that wee may found our Habitation firmely, we must first examine the Bed of Earth (as I may tearme it,) vpon which we will Build; and then the vnderfillings, or Sabstruction, as the Auncients did call it : For the former, we haue a generall precept in Vitruuius twice precifely repeated by him, as a point indeed of mayne consequence, first lib. 1. cap. 5. And againe more fitly lib.3.cap.3. in these words as Philander doth well correct the vulgar Copies.

Substructionis Fundationes fodiantur (laith he) fi queant inveniri ad solidum, or in solido. By which words I conceiue him to commend vnto vs, not onely, a diligent, but even a icalous examination what the Soile will beare: aduising vs, not to reft vpon any appearing Soliditie, vnlesse the whole Mould through which weecut, have likewise beence solid; But how deepe wee should goe



Vnderdiging,or Hollowing of the Earth.

24 The Elements in this fearch, hee hath no where to my remembrance determined, as perhaps depending more vpon Discretion, then Regularitie, according to the weight of the Worke; yet Andrea Palladio hath fairely aduentured to reduce it into Rule: Allowing for that Cauazione (as he calleth it) a fixt part of the beight of the whole Fabrique, vnles the Cellers be vnder ground, in which cafe hee would haue vs, (as it should feeme) to found somewhat lower.

Some Italians doe prescribe, that when they have chosen the Floore, or Plot, and laid out the Limits of the Worke, wee should first of all Digge Wels and Cesternes, and other vnderconducts and conuciances, for the Suillage of the House, whence may arise a double benefit, for both the Nature of the Mould or Soile, would thereby be fately searched, and moreouer those open vents, will serve to discharge such

Vapours, as hauing otherwise no issue might

of Architecture.

might peraduenture shake the Building. This is enough for the naturall Grounding, which though it bee not a part of the solid Fabrique, yet here was the fittest place to handle it.

25

There followeth the Substruction, or Ground-worke of the whole Edifice, which must sustaine the Walles; and this is a kinde of Artificial foundation, as the other was Natural. About which these are the chiefe Remembrances. First, that the bottome be precisely leuell, where the Italianstherefore commonly lay a platforme of good Bord; Then that the lowest Ledge or Row be meerely of Stone, and the broader the better, closely layd without Morter, which is a generall caution for all parts in Building, that are contiguous to Bord or Timber, because Lime and Wood are infociable, and if any where vnfit confiners, then most especially in the Foundation. Thirdly, that the



double to the infistent Wall; and more or lesse, as the weight of the Fabrique shall require; for as I must againe repeate, Discretion may be freer then Art. Lastly, I finde in some a curious precept, that the Materials below, be layd as they grew in the Quarrie, supposing them belike to haue most strength in their Naturall and Habituall Posture. For as Philippe de l'Orme obserueth, the breaking or yeelding of a stone in this part, but the bredth of the backe of a knife, will make a Cleft of more then half a foot in the Fabrique aloft, So important are Fundamentall errors Among which notes I have fayd nothing of Pallification, or Pyling of the Groundplot, commanded by Uitruuius, when we build vpon a moist or marshy soile, because that were an error in the first choyce. And therefore all Seats that must vse such provision below (as Venice for an eminent example) would

perhaps vpongood enquiry, befound

to

of ArchiteEture. 27 to haue beene at first chosen by the counsell of Nece/sity.

Now the Foundation being searched, and the Substruction layd, wee must next speake of the Wals.

Wals are either entire and continuall, or intermitted; and the Intermi/sions be either Pillars or Pylasters, for here I had rather handle them, then as some others doe, among Ornaments.

The entire Muring is by Writers diuerfly diffinguished: By some, according to the quality of the Materials, as either Stone or Brick, &c.where, by the way, let me note, that to build Wals and greater Workes of Flint, whereof wee want not example in our Iland, & particularly in the Province of Kent, was (as I conceiue) meerly virknown to the Ancients, who observing in that Materiall, a kinde of Metalicall Nature, or at least a Fusibility, seeme to have resolued it into nobler vie; an Art now viterly lost or perchance kept vp by a few Chy-



28

The Elements

micks. Some againe doe not so much confider the quality, as the Position of the layd Materials : As when Bricke or squared stones are laid in their lengthswith fides and heads together, or their points conjoyned like a Networke (for fo Vitruuius doth call it reticulatum opus) of familiar vse (as it should seeme) in his Age, though afterwards growne out of request, euen perhaps for that subtill speculation which hee himselfe toucheth; because so layd, they are more apt in swagging down, to pierce with their points, then in the jacent Posture, and so to creuice the Wall: But to leaue such cares to the meaner Artificers, the more essentiall are thefe.

That the Walles bee most exactly perpendicular to the Ground-worke: for the right Angle (thereon depending) is the true cause of all Stability; both in Artificiall and Naturall posi-



of Architecture. 29 mest, when he stands vprightest. That the massiest and heauiest Materials bee the lowest, as fitter to beare, then to be borne. That the Worke as it riscth, diminish in thicknesse proporcionally, for eale both of weight, and of expence. That certaine courses or Ledges of more strength then the rest, be interlayed like Bones, to suffaine the Fabrique from totall ruine, if the vnder parts should decay. Lastly, that the Angles bee firmely bound, which are the Nerues of the whole Edifice, and therefore are commonly fortified by the Italians, euen in their Brickebuildings, on each fide of the corners, with well squared stone, yeelding both ftrength and grace And so much touching the entire or folid Wall.

The intermissions (as hath beene fayd) are either by Pillars, or Pylasters.

Pillers which we may likewife call Columnes (for the word among Artifi-



30 The Elements diftinguish into Simple & Compounded. But (to tread the beaten and plainess way) there are five Orders of Pillers, according to their dignity and perfo ction, thus marshalled:

The Tuscan. The Dorique. The Ionique. The Corinthian.

And the Compound Order, or as some call it the Roman, others more generally the Italian.

In which fiue Orders I will first consider their Communities, and then their Proprieties.

Their Communities (as farre as I obferue) are principally three. First, they are all Round; for though some conceiue Columna Atticurges mer tioned by Vitruuius, lib.3.cap.3. to haue beene a squared Pillar, yet wee must passe it ouer as irregular, neuer receiued among these Orders, no more then certaine o-



of Architecture. 31 thed, and Vined, and Figured Columnes, which our Author himfelfe condemneth, being in his whole Booke a profeffed enemy to Fancies.

Secondly, they are all Diminished, or Contracted insensibly, more or lesse, according to the proportion of their heights, from one third part of the whole Shaft vpwards, which Philander doth prescribe by his owne precise. measuring of the Ancieut remainders, as the most gracefull Diminution. And here I must take leaue to blame a pra-Aice growne (I know not how) in certaine places too familiar, of making Pillars swell in the middle, as if they were licke of some Tympany, or Dropsie, without any Authentique Paterne or Rule, to my knowledge, and vnseemely to the very iudgement of fight. True it is that in Vitruuius, lib. 3. cap. 2. wee finde these words, De adiectione, que adjoitur in medys Columnis;



The Elements ... 32 tremo libro erit formatio eius; which pafsage, seemeth to haue giuen some coutenance to this error. But of the promise there made, as of diuerse other elsewhere, our Master hath fayled vs, either by slip of memory, or iniury of time, and so wee are left in the darke. Alwayes sure I am, that besides the authority of example which it wanteth, It is likewise contrary to the Originall and Naturall Type, in Trees, which at first was imitated in Pillars, as Vitrunius himselfe obserueth, lib. 5. cap. I. For who euer saw any Cypresse, or Pine, (which are there alledged) small below and aboue, and tumerous in the middle, vnlesse it were some diseased Plant, as Nature (though otherwise the comliest Mistresse) hath now and then her deformities and Irregularities.

Thirdly, they have all their Vnder-Jettings, or Pedistals, in height a third part of the whole Columne, compre-

hending the Base and Capitall; and their

vpper

of Architecture. 33 vpper Adiuncts, as Architraue, Frize, and Cornice, a fourth part of the fayd Pillar; which rule of fingular vse and facility I find fetled by Iacobo Baroccio, and hold him a more credible Author, as a man that most intended this piece, then any that vary from him in those Dimentions.

These are their most considerable Communities and agreements.

Their Proprieties or Distinctions will best appeare by some reasonable dcscription of them all, together with their Architraues, Frizes, and Cornices, as they are vsually handled.

First therefore the *Tuscan* is a plain, massie, rurall Pillar, refembling some sturdy well-limmed Labourer, homely clad, in which kinde of comparisons *Vitruuius* himselfe seemeth to take pleafure, *lib.* 4. cap. 1. The length thereof shall be fix *Diameters*, of the grosself of the Pillar below. Of all proportions, in truth, the most naturall; For our



34

Author tells vs, lib. 3. cap. 1. that the foote of a man is the fixt part of his bodie in ordinary measure, and Man himselfe, according to the faying of Protagoras (which Aristotle doth somewhere vouchsafe to celebrate) is no no arainer genusion uiler: as it were the Prototype of all exact Symmetrie, which we haue had other occasion to touch before: This Columne I have by good warrant called Rurall, Vitru.cap.2.lib.3. And therefore we need not consider his rank among the reft. The distance or Intercolumniation (which word Artificers doe vsually borrow) may bee neere foure of his owne Diameters, because the Materials commonly layd ouer this Pillar, were rather of wood then stone; through the lightnesse whereof the Architraue could not fuffer, though thinnely supported, nor the Columne it selfe being so substantiall. The Contraction aloft shall be

(according to the most received practice)

of Architecture. 35 tice) one fourth part of his thickneffe below. To conclude, (for I intend only as much as shall ferue for a due Distinguishment, and not to delineate every petty member) the Tuscan is of all the rudest Pillar, and his principall Character Simplicity.

The Dorique Order is the grauest that hath beene received into civill vse, preseruing, in comparison of those that follow, a more Masculine Aspect, and litle trimmer then the Tuscan that went before, saue a sober garnishment now and then of Lions beads in the Cornice, and of Triglyphs and Metopes alwayes in the Frize. Sometimes likewise, but rarely, chaneled, and a little slight sculpture about the Hypotrachelion, or Necke vnder the Capitall. The length, seuen Diameters. His ranke or degree, is the lowest by all Congruity, as being more massie then the other three, and confequently abler to support. The Intercolumniation, thrice as



36

much as his thicknesse below. The Contraction aloft, one fift of the same measure. To discerne him, will bee a peece rather of good Heraldry, then of Architesture : For he is best knowne by his place, when he is in company, and by the peculiar ornament of his Frize (before mentioned) when he is alone.

The Ionique Order doth represent a kinde of Feminine flendernesse, yet saith Vitruuius, not like a light Housewife, but in a decent dressing, hath much of the Matrone. The length eight Diameters. In degree as in substantialnesse, next about the Dorique, suftayning the third, and adorning the fecond Story. The Intercolumniation two of his owne Diameters. The Contraction one fixt part. Best knowne by his trimmings, for the bodie of this Columne is perpetually chaneled, like a thicke plighted Gowne. The Capitall dressed on each fide, not much vnlike more Wine Wine Start



of Architecture. 37 thing, which they call the Ioman Voluta. The Cornice indented. The Frize swelling like a pillow; And therefore by Vitrunius, not vnelegantly tearmed Puluinata. These are his best Characters.

The Corintbian, 15 a Columne, laciuiously decked like a Curtezane, and therein much participating (as all Inuentions doe) of the place where they were first borne: Corinthe hauing been without controuersie one of the wantonest Townes in the world. This Order is of nine Diameters. His degree, one Stage aboue the Ionique, and alwaies the highest of the simple Orders. The Intercolumniation two of his Diameters, and a fourth part more, which is of all other the comeliest distance. The Contraction one seuenth Part. In the Cornice both Dentelli and Modiglioni. The Frize, adorned with all kinds Our Artiof Figures and various Compartments them Teeth at Pleasure. The Capitall, cut into the and Carbeau-tonzes.



28

beautifullest lease, that Nature doth yeeld, which surely next the Aconitum Pardalianches (reiected perchance as an ominous Plant) is the Acanthus or Branca Vrsina though Vitruuius doe impute the choice thereof vnto Chance, and wee must be contented to belecue him : In short, As Plainenesse did Charactarizethe Tuscan, so must Delicacie and Varietie the Corinthian Pillar, besides the height of his Ranke.

The laft is the Compounded Order: His name being a briefe of his Nature. For this Pillar is nothing in effect, but a Medlie, or an Amasse of all the precedent Ornaments, making a new kinde, by ftealth, and though the most richly tricked, yet the poorest in this, that he is a borrower of all his Beautic. His length, (that he may have somewhat of his owne) shalbe of ten Diameters. His degree should, no doubt, bee the highest by reasons before yeelded.



of Architecture.

39

But few Palaces Auncient or Moderne exceede the third of the Ciuill Orders. The Intercolamniation, but a Diameter and an halfe, or alwayes somewhat lesse then two. The Contraction of this Pillar must be one eight Part lesse aboue then belowe. To know him will be easie by the verie mixture of his Ornaments, and Cloathing.

And so much touching the fiue Orders of Columnes, which I will conclude with two or three, not impertinent Cautions:

First, that where more of these Orders then one, shalbe set in several Stories or Contignations, theremust bee an exquisite care, to place the Columnes precisely, one ouer another, that so, the folid may answere to the folid, and the vacuities to the vacuities, as well for Beautie, as strength of the Fabrique: And by this Caution the Consequence is plaine, that when we speake of the Intercolumniation or distance which is

Intercolumniation or distance, which is due

40

due to each Order, we meane in a Dorique, Ionicall, Corinthian Porch, or Cloister, or the like of one Contignation, and not in Storied buildings.

Secondly, let the Columnes aboue be a forth part lesse then those below, saith Vitrunius, lib. 5. cap. 1. A strange Precept, in my opinion, and so strange, that peraduenture it were more sutable, euen to his owne Principles, to make them rather a fourth Part greater, For lib. 3. cap.2. where our Master handleth the Contractions of Pillars, wee haue an Optique Rule, that the higher they are, the lesse should be alwayes their diminution aloft, because the Eye it selfe, doth naturally contract all ObieEts more or lesse, according to the Distance; which consideration, may, at first sight, sceme to hauebeene forgotten in the Caution wee haue now giuen; but Vitruuius (the best Interpreter of himselfe) hath in the same

place of his fift Booke, well acquitted his

of Architecture. 4I his memorie by these words : Columna superiores quarta parte minores, quàm inferiores, sant constituendæ; proptered quod, operi ferendo que sunt inferiora, firmiora esse debent; preferring like a wise Mechanick, the naturall Reason, before the Mathematicall, and sensible conceits before abstracted. And yet lib 4.cap.4. he seemeth againe, to affect Subtiltie, allowing pillars the more they are chaneled, to beethemore slender; because while our Eye (faith hee) doth as it were distinctly measure, the eminent and the hollowed Parts, the Totall Obiest appeareth the bigger, and so as much as those excauations, doe subtract, is supplied by a Fallacie of the Sight : But here mee thinks, our Master should likewise haue rather confidered, the naturall Inconvenience; for though Pillars by chaneling, bee feemingly ingrossed to our Sight, yet they are truely weakened in them. selues; and therefore ought perchance

LIFE

in

42

in found realon not to bee the more flender, but the more Corpulent, vnlesse apparances preponder truths, but Contra Magistrum, non est disputandum.

A third Caution shall the that all the proiected or lutting Parts (as they are tearmed) bevery moderate, especially, the Cornices of the lower Orders, for whilest some thinke to giue them, a beautifull and royall Aspect, by their largenesse, they sometimes hinder both the Light within, (whereof I shall fpeake more in due place) and likewise detract much from the viewe of the Front without, as well appeareth in one of the principall Fabriques at Venice, namely the Palace, of the Duke Grimani on the Canal Grande, which by this magnificent errour, is somewhat disgraced : I neede now fay no more concerning Columnes & their AdiunEts, about which Architects make such a noyse in their Bookes, as if the very



of ArchiteEture. and Cornices, and the like, were enough to graduate a Master of th is Art; yet let me before I passe to other matter, preuent a familiar Obiection; It will perchance bee said, that all this Doctrine touching the fiue Orders, were fitter for the Quarries of Asia which yeelded 127 Columnes of 60 Foote high, to the Ephefian Temple, or for Numidia where Marbles abound ; then for the Spirits of England, who must be contented with more ignoble Materials: To which I answere, that this neede not discourage vs: For I haue often at Venice viewed with much plcasure, an Atrium Græcum (we may translate it an Anti porch, after the Greeke manner) raised by Andrea Palladio, vpon eight Columnes of the Compounded Order; The Bases of Stone, without Pedistals, The shafts or Bodies, of meere Brick; three foote and an halfe thicke in the Diameter below, and consequently thirty five foote high, as



himfelfe hath described them in his second Booke; Then which, mine Eye, hath neuer yet beheld any Columnes, more stately of Stone or Marble; For the Bricks, hauing first beene formed in a Circular Mould, and then cutbefore their burning into soure quarters or more, the safterwards ioyne so closely, and the points concenter so exactly, that the Pillars appeare one entire Peece; which short description, I could not omit, that thereby may appeare, how in truth wee want rather Art then stuffe, to satisfie our greatest Fancies.

After Pillars, the next in my diffribution, are Pylasters, mentioned by Vitruuius, lib 5 cap. 1. and scant any where else vnder the name of Parastates, as Philander conceineth, which Grammaticall point (though perchance not very cleere) I am contented to examine no farther. Alwayes, what we meane by the thing it felfe, is plaine

enough

of Architecture. 45 enough in our owne vulgar; Touching which, 1 will briefly collect the most considerable notes.

Pylasters, must not bee too tall and flender, least they resemble Pillars, nor too Dwarfish and grosse, least they imitate the Piles or Peeres of Bridges: Smoothnesse doth not so naturally become them, as a Rusticke Superficies, for they ayme more at State & Srength, then Elegancie. In private Buildings they ought not to be narrower, then one Third, nor broader then two parts of the whole Vacuity, betweene Pylaster and Pylaster; but to those that stand at the Corners, may be allowed a little more Latitude by difcretion, for strength of the Angles : In Theaters and Amphi-theaters, and fuch weighty Workes, Palladio obserueth them, to have beene as broad as the halfe, and now and then as the whole Vacuitie: Heenoteth likewise (and others confent with him) that their



The Elements 46 true Proportion, should bee an exact Square; But for lessening of expence, and inlarging of roome, they are com. monly narrower in Flanke, then in Front: Their principall Grace doth consist in halfe or whole Pillars, applied vnto them; in which case it is well noted by Authors, that the Columnes may bee allowed somewhat aboue their ordinary length, because they leane vnto so good Supporters. And thus much shall sufice touching Pilasters, which is a cheape, & a strong, and a noble kinde of Structure.

Now because they are oftner, both for Beauty and Maiesty, found Arched, then other wise; I am heere orderly led to speake of Arches, and vnder the same head of Vaults: for an Arch is nothing indeed but a contracted Vault, and a Vault is but a dilated Arch: Therefore to h andle this Piece both compendiously, and fundamentally, I will resolue the whole businesse into a few Theoremes. The-

of Architecture.

47

Theoreme 1.

All solid Materials free from impediment, doe descend perpendicularly downewards, because ponderosity is a naturall inclination to the Center of the World, and Nature performeth her motions by the shortest lines.

Theoreme 2.

Brickes moulded in their ordinary ReEtangular forme, if they shall be layd one by another in a leuell row, betweene any Supporters suftayning the two ends, then all the pieces between, will necessarily finke, euen by their owne naturall Grauity, and much more if they suffer any depression by other waight aboue them, because their sides being paralell, they have roome to descend perpendicularly, without impeachment, according to the former Theoreme; Therefore to make them stand, we must either change their Posture. or their Figure, or both.



The Elements Theorme 3.

48

If Brickes moulded, or Stones squared Cuncatim (that is, Wedge wife, broaderaboue then below) shall be layd in a Row levell, with their ends supported, as in the precedent Theoreme, pointing, all to one Center; then none of the pieces betweene can sinke till the Supporters giue way, because they want roome in that Figuration, to descend perpendicularly. But this is yet a weake piece of Structure, becaule the Supporters are subject to much impulsion, especially if the line be long; for which reason this Forme is seldome vsed, but ouer Windowes, or narrowe Doores. Therfore to fortifie the Work as in this third Theoreme wee haue supposed the Figure of all the Materials different from those in the second: So likewise wee must now change the Posture, as will appeare in the Theoreme following.

Theoreme 4. How for the



of Architeaure. 49 Wedge-wise, shall not be disposed leuelly, but in forme of some Arch, or portion of a Circle, pointing all to the same Center: In this case neither the pieces of the fayd Arch, can finke downewards, through want of roome to descend * perpendicularly : Northe Sup- By the first porters or Butments (as they are tear-Theor. med) of the fayd Arch can suffer so much violence, as in the precedent flat Posture, for the roundnesse will alwayes make the Incumbent waight, rather to reft vpon the Supporters, then to shoue them; whence may be drawn an cuident Corolary; that the fafest of all Arches is the Semicircular, and of all which is Vaults the Hemisphere, though not ab. the sole solutely exempted from some naturall prerogative weakenesse, * as Barnardino Baldi Abbot of perpenof Guastalla, in his Commentary vpon lines and Aristotles Mechaniques, doth very well right Anprooue; where let me note by the way, gles. that when any thing is Mathematically demonstrated weake, it is much more



50

Mechanically weake: Errors euer occurring more easily in the management of Grosse Materials, then Lineal Designes.

Theoreme 5.

A

As Semicircular Arches, or Hemifphericall Vaults, being raifed vpon the totall Diameter, bee of all other the roundeft, and con/equently the fecureft, by the precedent Theoreme: So those are the gracefullest, which keeping precisely the same height, shall yet bee distended, one fourteenth part longer then the sayd entire Diameter; which addition of distent will conferre much to their Beauty, and detract but little from their Srength.

This observation I finde in Leon-Batista Alberti; 'But the practice how to preserve the same height, and yet diltend the Armes or ends of the Arch, is in Albert Durers Geometry, who taught the Italians many an excellent Line, of



of Architecture. 51 Vpon these fiue Theoremes, all the skill of Arching and Vaulting is grounded: As for those Arches, which our Artizans call of the third and fourth point; And the Tuscan writers diterzo, and di quarto acuto; because they alwayes concurre in an acute Angle, and doe spring from diuision of the Diameter, into three, foure, or more parts at pleasure; I say, such as these, both for the naturall imbecility of the sharpe Angle it selfe, and likewise for their very Vncomelinesse, ought to bee exiled from judicious eyes, and left to their first inuentors, the Gothes or Lumbards, amongst other Reliques of that barbarous Age.

Thus of my first Partition of the parts of euery Fabrique, into fiue Heads, having gone through the two former, & been incidently carried into this last doctrine touching Arches and Oaults. The next now in order are the Apertions; vnder which tearme I



52

doe comprehend Doores, Windowes, Staire-cases, Chimnies, or other Conducts: In short, all Inlets or Outlets; To which belong two generall Cautions.

First, That they bee as few in number, and as moderate in Dimension, as may possibly confist with other due respects: for in a word, all Openings are Weaknings.

Secondly, That they doe not approach too neere the Angles of the Wals; for it were indeed a molt effentiall Solecisme to weaken that part, which must strengthen all the rest: A precept well recorded, but ill practifed by the Italians themselues, perticularly at Venice, where I haue obserued diverse Pergoli, or Meniana (as Vitrunius sceneth to call them, which are certaine ballised out-standings to fatisfie curiofity of fight) very dangerously set forth, vpon the very point it

Now,

sclfe, of the Murall Angle.

of Architecture.

-53

Now, Albeit I make hafte, to the cafting and comparting of the whole Worke, (being indeede the very Definitiue Summe of this Art, to diltribute víefully and gracefully a well chosen Plot) yet I will first vnder their seuerall Heads, collect briefly some of the choiselonging to these particular Ouertures.

Of Doores and Windowes. Vori

These In lets of Men and of Light, I couple together, because I find their due Dimensions, brought vnder one Rule, by Leone Alberti (a learned Searcher) who from the Schoole of Pythagoras (where it was a fundamentall Maxime, that the Images of all things are latent in Numbers) doth determine the comeliest Proportion, betweene breadths and heights, Reducing Symmetrie to Symphonie, and the harmonie of Sounde, to a kinde of harmonie in Sight, after this manner: The two



principall Confonances, that most rauish the Eare, are by consent of all Nature, the fift, and the Octane; whereof the first rifeth radically, from the proportion, betweene two and three. The other from the double Internalle, bctweene One and Two, or betweene Two and Foure &c. Now if we shall transport these proportions, from Audible to visible Obiects; and apply them as they shall fall fittest (the nature of the Place considered) Namely in some Windowes, and Doores, the Symmetrie of Tmo to Three, in their Breadth and Length; In others the double as aforesaid; There will indubitably result from either, a gracefull and harmonious contentment, to the Eye; Which speculation though it may appeare vnto vulgar Artizans, perhaps too subrile, and too sublime, yet wee must remember, that Vitruuius himselfedoth determinemany things in his profesfion; by Musicall grounds, and much

Legioning 20 commendeth

of Architecture.

commendeth in an Architeet, a Philosophical Spirit; that is, he would have him (as I conceaue it) to be no superficiall, and floating Artificer; but a Diuer into Causes, and into the Mysteries of Proportion; Of the Ornaments, belonging both to Doores and Windowes, I shall speake in other place; But let mee heere adde one obsernation; That our Master (as appeareth by divers passages, and particularly lib. 6. cap. 9) feemes to have beene an extreame Louer of Luminous Roomes; And indeede I must confesse that a Franke Light, can milbecome noe A Edifice whatlocuer, Temples onely excepted; which were anciently darke, as they are likewife at this day in some Proportion. Deuotion more requiring collected then defused Spirits. Yet on Lumenest the other fide we must take heede to make a Houfe (though but for ciuill vse) all Eyes, like Argus; which in Northerne (limes would be too could, In Southerne, too hot : And therefore the

diffusiums sui & alsens.

matter

matter indeede importeth more then a merry comparison. Besides, There is no part of Structure either more expencefull, then Windowes; or more ruinous; not onely for that vulgar reason, as being exposed to all violence of weather; but because confisting of so different and vnsociable pieces, as Wood, Iron, Leade, and Glasse, and those small and weake, they are easily shaken; I must likewise remember one thing, (though it bebut a Grammatical note) touching Doores. Some were Fores,& Some were Value. Those (as the very word may seeme to import) did open outwards, These inwards; And were commonly of two Leaues or Panes, (as we call them) thereby requiring indeed, a lesser Circuit in their vnfoulding; And therefore much in vse among Italians at this day; But I must charge them with an Imperfection, for though they let in as well as the for-




O make a compleate Stairecase, is a curious peece of Architecture : The vulgar Cautions ar e these.

That it haue a very liberall Light, against all Casualtie of Slippes, and Falles.

That the space aboue the Head, bee large and Airy, which the Italians vse to call Vn bel-sfogolo, as it were good Ventilation, because a man doth spend much breath in mounting.

That the Halfe-paces bee well distributed, at competent distances, for reposing on the way.

That to auoyd Encounters, and befides to gratifie the beholder, the whole Staire case have no nigard Latitude, that is, for the principall Ascent, at least ten foot in Royall Buildings.

That the breadth of euery fingle Step or Staire bee neuer lesse then one



foote, nor more then eighteen inches.

58

That they exceede by no meanes halfe a foot in their height or thicknesse; for our Legges doe labour more in Elevation, then in Distention: These I say are familiar remembrances, to which let meadde;

That the fleps bee layd where they joyne Con con tantino di *Jcarpa*; we may translate it somewhat *floaping*, that so the foot may in a fort both ascend and descend together, which though obferued by few, is a secret and delicate deception of the paines in mounting.

Lastly, to reduce this doctrine to fome Naturall, or at least Mathematicall ground, (our Master, as we see, lib.9. cap.2.) borroweth those proportions, that make the sides of a Rectangular Triangle, which the Ancient Schoole did expresses in lowest tearmes, by the numbers of 3.4. and 5. That is, Three for the Perpendicular, from the Stairebead to she ground End for the



of Architecture. 59 Ground-line it selfe, or Recession from the wall; And Fine for the whole Inclination or slopenesse in the ascent, which proportion, faith he, will make Temperatas graduum librationes. Hitherto of Staire-cases which are direct : There are likewise Spirall, or Cockle staires, cither Circular, or Ouall, and fometimes running about a Pillar, sometimes vacant, wherein Palladio, (A man in this point of fingular felicity) was wont to diuide the Diameter, of the first sort into three parts, yeelding one to the Pillar, and two to the Steps; Of the fecond into foure, whereof he gauetwo to the Staires, and two to the Vacus itie, which had all their light from aboue, And this in exact Quals, is a Master-piece.

OF CHIMNIES.

IN the present businesse, Italians (who make very frugall fires, are perchance not the best Counsellers.) Therefore



from them we may better learne, both how to raife faire Mantels within the roomes, and how to difguife gracefully the fhafts of Chimnies abroad (as they vfe) in fundry formes (which I fhall handle in the latter part of my labour) and the reft I will extract from Philippe de l'Orme: In this part of his Worke more diligent, then in any other, or, to doe him right, then any man elfe.

First, hee observeth very soberly, that who in the disposition of any Building will consider the nature of the Region, and the Windes that ordinarily blow, from this, or that Quarter; might so cast the roomes, which shall most need fire; that hee should little feare the incommodity of Smoake, and therefore hee thinkes, that inconvenience, for the most part to proceede from some inconfiderate beginning. Or if the error lay not in the Disposition but in the Structure it selfe; then hee

makes

of Architecture. 61 makes a Logicall enquiry; That either the Winde is too much let in aboue, at the mouth of the Shafte, or the Smoke stifeledbelow; If none of these, Then there is a repulsion of the Fume, by some higher Hill or Fabrique, that shall ouertoppe the Chimney and worke the former effect : If likewise not this, Then he concludes, that the Roome which is infested, must bee necessarily both little and close, so as the smoke cannot issue by a naturall Principle, wanting a succession and supply of new Ayre.

Now, In these cases he suggesteth divers Artificiall remedies, of which I will allow one, a little Description, because it sauoureth of Philosophie, and was touched by Vitruuius himselfe, lib. 1 cap. 6. but by this man ingeniously applied to the present vie: Hee will have vs provide two hollow brasse Balles of reasonable capacitie, with little holes open in both, for reception of



62

The Elements

Water, when the Aire shalbe first sucked out; One of these wee must place with the hole vpwards, vpon an yron Wire, that shall trauerse the Chimney, a little aboue the Mantell, at the ordinary height of the sharpest heate or flames, whereof the water within being rarified, and by rarifaction resolued into Winde, will breake out, and so forcevp the smoke, which otherwise might linger in the Tunnell, by the way, and oftentimes reuert; With the other, (saith he) wee may supply the place of the former, when it is exhausted, orfor a neede blow the Fire in the meane while; Which Inuention I haue interposed for some little intertainement of the Reader; I will conclude with a note from Palladio, who obserueth that the Ancients did warme their Roomes, with certaine secret Pipes that came through the Walles, transporting heate (as I conceiue it) to sundry parts of the House, from one

common

of ArchiteEture.

common Furnace; I am ready to baptize them Caliducts, as well as they are tearmed Venti-ducts, and Aquæ-ducts that conuey Winde and Water; which whether it were a custome or a delicacie, was surely both for thrift, and for vle, far beyond the German Stoues; And I should preferre it likewise be. fore our ownefashion, if the very sight of a fire, did not adde to the Roome a kinde of Reputation, *as old Homer doth ajoutiss & mteach vs in a verse, sufficient to prooue disce istag. that himselfe was not blinde, as some Hom. Epig. would laie to his charge.

Touching Conducts for the Suillage and other necessities of the House, (which how base soeuer in vse, yet for health of the Inhabitants, areas confiderable, and perhaps more then the rest)I finde in our Authors, this Counsell; That Art should imitate Nature, in those ignoble conueyances; and separate them from Sight, (where there wants a running Water) into the

62



64 The Elements most remote, and lowest, and thickest part of the Foundation : with secret vents passing vp through the Walles like a Tunnell to the wilde Aire alost: which all Italian Artizans commend for the discharge of noysome vapours, though else-where to my knowledge little practifed.

Thus having confidered the precedent Appertions, or Ouertures, in feueraltie according to their particular Requifites, I am now come to the casting and Contexture of the whole Worke, comprehended vnder the tearme of Compartition : Into which (being the mainest piece) I cannot enter without a few generall Precautions, as I have done in other Parts.

First therefore, Let no man that intendeth to build, setle his Fancie vpon a draught of the Worke in paper, how exactly socuer measured, or neately set offin perspective; And much lesse vpon a bare Plant thereof



of Architecture. 65 che Schiographia or Ground lines; without a Modell or Type of the whole Structure, and of euery parcell and Partition in Pastboord or Wood.

Next that the laid Modell bee as plaine as may be, without colours or otherbeaucifying, lest the pleasure of the Eye preoccupate the Indgement; which aduife omited by the Italian Architects, I finde in Philippe de l'Orme, and therefore (though France bee not the Theater of best Buildings) it did merit some mention of his name.

Lastly, the bigger that this Type be, it is still the better, not that I will perswade a man to such an enormity, as that Modell made by Antonio Labaco, of -Saint Peters Church in Rome, containing 22. foot in length, 16. in breadth, and 13. in heighth, and costing 4184. crownes : The price in truth of a reasonable Chappell: Yet in a Fabrique of some 40. or 50, thousand pounds charge, I wilh 30. pounds at least layd

out

out before hand in an exact Modell; for a little misery in the Premises, may eafily breed some absurdity of greater charge, in the Conclusion.

Now, after these premonishments, I will come to the Compartition it felfe; By which, the Authors of this Art (as hath beene touched before) doe vnderstand, a gracefull and vsefull distribution, of the whole Ground-plot both for roomes of Office, and of Reception or Entertainement, as farre as the Capacity thereof, and the nature of the Countrey will comport. Which circumstances in the present Subiest, are all of maine confideration, and might yeeld more discourse then an Elementall Rapsodie will permit. Therefore (to anatomize briefly this Definition) the Gracefulnesse (whereof wee speake) will confilt in double Analogie, or correspondencie. First, between the Parts and the Whole, whereby a great Fa-



of Architecture. 67 Lights, great Entrances, great Pillars or Pylasters; In summe, all the Members great. The next betweene the Parts themselues, not only, considering their Breadths, and Lengths, as before, when wee spake of Doores and Windowes; but here likewise enters a third respect of Height, a point (I must confesse) hardly reduceable to any generall precept.

True it is, that the Ancients did determine the Longitude of all Roomes, which were longer then broade, by the double of their Latitude, Vitruuius lib.6.cap.5. And the Heighth by the halfe of the breadth and length fummed together But when the Roome was precifely square, they made the Height half as much more as the Latitude; which Dimensions the moderne ArchiteEts haue taken leaue to varie vpon discretion: Sometimes squaring the Latitude, and then making the Diagoniall or ouerthwart Line, from Angle to Angle, of the square, the measure of the



68

Heighth sometimes more, but seldome lower then the full breadth it selfe; which boldnesse of quitting the old Proportions, some attribute first to Michael Angelo da Buonaroti, perchance vpon the credite he had before gotten, in two other Arts.

The second point is Vsefulnesse, which will confist in a sufficient Number of Roomes, of all forts, and in their apt Coherence, without distraction, without confusion; so as the beholder may not onely call it, Vna Fabrica ben raccolta: as Italians vse to speake of well vnited Workes, but likewise that it may appeare airie and spiritous, and fit for the welcome of cheerefull Guests; a= bout which the principall difficultie will bee in contriuing the Lightes, and Staire-cales, whereof I will touch a note or two: For the first, I obserue that the ancient ArchieteEts were at much ease. For both the Greekes and

Romanes (of whole private dwellings

V.3-

of Architecture.

69

Vitruuius hath left vs some description) had commonly two Cloystered open Courts, one serving for the Womens. side, and the other for the Men : who yet perchance now adayes would take so much seperation vnkindly. Howsoeuer, by this meanes, the reception of light, into the Bodie of the building, wasvery prompt, both from without and from within: which we mult now supplie either by some open Forme of the Fabrique, or among gracefull refuges, by Tarrasing any Storie, which is in danger of darkenesse; or lastly, by perpendicular lights, from the Roofe: of all other the most naturall, as shalbe shewed anon. For the second dificultie: which is casting of the Stayrecases; That being in it selfe no hard point, but onely as they are incombrances of roome for other vie: (which lights were not) I am therefore aptly. moued heere to speake of them. And



70

I haue marked a willingnesse, in the Italian Artifans, to destribute the Kychin, Pantrie, Bakehouse, washing Roomes: and euen the Buttrie likewise, vnder ground;next aboue the Foundation, and sometimes Leuel with the plaine, or Floore of the Cellar : rayfing the first Ascent into the house Fisteene Foote or more for that Ende, which besides the benefit of remouing such Annoyes out of fight, and the gayning of so much more roome aboue, doth allo by elevation of the Front, adde Maiefie to the whole ApeEt. And with such a disposition of the principall Stayre-case, which commonly doth deliuer vs, into the Plaine of the second Storie, there may bee wonders done, with a little roome, whereof I could alleadge braue Examples abroad; and none more Artificiall, and Delicious, then a Houle built by Daniele Barbaro Patriarche of Aquileia before mentioned, among the

memorable Commenters vpon Vitruuius.

But

of Archite Eture.

71

But the Definition (aboue determined) doth call vs to some confideration of our owne Countrie, where though all the other pettie Offices (before rehearsed) may well enough bee so remote, yet by the naturall Hospitalitie of Eng. land, the Buttrie must be more visible; and wee neede perchance for our Raunges, a more spacious and luminous Kitchin, then the forefaid (ompartition will beare; with a more competent neerenesse likewise to the Dyning Roome Or else besides other Inconueniences, perhapes some of the Dishes may straggle by the way; Heere let me note a common defect, that wee haue of a very vsefull Roome, called by the Italians Il Tinello; and familliar, nay almost essentiall, in all their great Familes. It is a Place properly appointed, to conferue the meate that is taken from the Table, till the Waiters eate, which with vs by an olde fashion, is more vnseemely set by, in the meane

while. Now

72

Now touching the distribution of Lodging chambers; I must here take leaue to reprodue a fashion, which I know not how hath preuailed through Italie, though without ancient examples, as farre as I can perceiue by Vitruuius. The thing I meane, is, that they so cast their partitions as when all Doors are open, a man may see through the whole House; which doth necessariely put an intollerable seruitude vpon all the Chambers saue the Inmost, where none can arrive, but through the rest; or else the Walles must be extreame thicke for secret passages And yet this also will not serve the turne, without at least Ibree doores to every Roome: A thing most insufferable, in cold & windie Regions, and euery where noe small weakening to the whole Worke; Therefore with vs that want no cooling, I cannot com-

mend the direct opposition of such Ouertures, being indeede meerely grounded

of Architecture. 73 grounded vpon the fond ambition of displaying to a Stranger all our Furniture at one Sight, which therefore is most maintained by them that meane to harbour but a few; whereby they make onely aduantage of the vanitie, and feldome proue the Inconuenience. There is likewise another defect (as absurdities are seldome solitarie) which will neceffarily follow, vpon fuch a feruile disposing of inward Chambers. That they must bee forced to make as many common great Roomes, as there shalbe feuerall Stories; which (befides that they are vsually darke, a point hardly auoided, running as they doe, through the middle of the whole House) doclikewise deuoure so much Place, that thereby they want other Galleries, and Roomes of Retreate, which I have often confidered among them (I must confesse) with no small wonder; for I observe no Nation in the World, by Nature more private



and referued, then the Italian, and on the other side, in no Habitations lesse prinacie; so as there is a kinde of Conflict, betweene their Dwelling, and their Being: It might heere perchance bee expected, that I should at least describe (which others have done in draughts and designes) diuers Formes of Plants and Partitions, and varieties of Inuentions; But speculatiue Writers (as I am) are not bound, to comprise all particular Cases, within the Latitude of the Subject, which they handle; Generall Lights, and Directions, and pointings at some faults, is sufficient. The rest must be committed to the sagacirie of the ArchiteEt, who will bee often put to diuers ingenious shifts, when hee is to wrestle with scarsitie of Ground. As sometimes * to damme one Roome (though of speciall vse) for the benefit and beautie of all the rest; Another while, to make those fairest, which are most in Sight, and to leave the other Case, or the

The Italians callituna stanza dannata, as when a Buttrie is cast vnder a a stayre-

74



of Architecture. 75 (like a cunning Painter) in shadow, cum multis alys, which it were infinite to pursue. I will therefore close this Part touching Compartition, as cheerefully as I can with a short description of a Feasting or entertayning Roome, after the Ægyptian manner, who seeme (at least till the time of Vitruuius) from the auncient Hebrewes and Phenicians (whence all knowledge did flow) to haue retayned, with other Sciences, in a high degree, also the Principles, and practise of this magnificent Art. For as farre as I may coniecture by our Masters Text, lib. 6. cap.'s. (where as in many other Places he hath tortured his Interpreters) there could no Forme, for fuch a Royall vse, bee comparably imagined, like that of the forefaide Nation, which I shall adventure to explaine.

Let vs conceiue a Floore or Area of goodly length, (For example, at least of 120 foote) with the breadth some-



76

what more then the halfe of the Longitude, whereof the reason shalbc afterwardsrendred. About the two longest sides, and Head of the faid Roome, shall runnean Order of Pillars, which Palladio doth suppose Corinthian (as I fee by his designe) supplying that point out of Greece, becaule we know no Order, proper to Agypt. The fourth fide I wil leaue free for the Entrance: On the foresaid Pillars was laid an Architraue, which Vitruuius mentioneth alone: Palladio addes thereunto (and with reason) both Freeze and Cornice, ouer which went vp a continued Wall, and therein, halfe or three quarter Pillars, auswering directly, to the Order below, but a fourth Part lesse; and betweene these halfe Columnes aboue, the whole Roome was windowed round about. the second second

Now, from the lowest Pillars there was layd ouer a Contignation or Floore,



of Architecture. Head of the Columnes with Tarrace and Pauement, Sub dio (saith our Master) and so indeed hee might safely determine the matter in Egypt, where they feare no Clowds: Therefore Palladio (woleaueth this Tarrace vncouered in themiddle, and ballised about) did perchance construction rightly, though therein discording from others: Alwayes we must vnderstand a sufficient breadth of Pauement, left between the open part and the Windowes, for some delight of Spectators, that might looke downe into the Roome: The Latitude I haue supposed contrary to some former Positions, a little more then the halfe of the length; because the Pillars standing at a competent distance from the outmost Wall, will by interception of the Sight, somewhat in appearance diminish the breadth; In which cases, (as I have touched once or twice before) Discretion may bee more licentious then Art. This is the



The Elements 78 description of an Egyptian roome, for Feastes and other Iollities. About the Walles whereof wee must imagine entire Satues, placed below, and illuminated by the descending Light, from the Tarrace, as likewise from the Windowes betweene the halfe Pillars aboue: So as this Roome had abundant and aduantageous Light; and besides other garnishing, must needes receiue much State by the very heighth of the Roofe, that lay ouer two orders of Columnes: And fo having runne through the foure parts of my first generall Diuision, namely, Foundation, Walles, Appertions, and Compartition ; the House may now haue leaue to put on his Hatte: hauing hitherto beene vncouered it selfe, and consequently vnfit to couer others. Which point though it be the last of this Art in execution, yet it is alwayes in Intention the first, For who would build but for Shelter? Therefore obtayning both the Place, and the

dig-

of ArchiteEture. 79 dignity of a Finall cause, it hath beene diligently handled by diuerse, but by none more learnedly then Bernardino Baldi Abbot of Guastalla (before cited vpon other occasion) who doth fundamentally, and Mathematically demonstrate the firmest Knittings of the vpper Timbers, which make the Roofe. But it hath beene rather my Scope, in these Elements to fetch the ground of all, from Nature her selfe, which indeed is the fimplest mother of Art. Therefore I will now onely deliuer a few of the properest, and (as I may say) of the naturalest confiderations, that belong to this remayning Piece.

There are two extremities to be auoyded in the *Couer*, or *Roofe*: That it be not too *beauy*, nor too *light*. The first, will suffer a vulgar objection of pressing too much the vnder-worke. The other, contayneth a more secret inconuenience; for the *Couer* is not oncly a bare defence, but likewise a kinde



80 The Elements kinde of Band on Ligarure, to the whole Fabrique, and therefore would require fome real onable weight. But of the two extreames, a Houfe Top-beau is the worft. Next there must be a care of Equality, that the Edifice be not pressed on the one fide more then on the other; and here Palladio doth wisely (like a cautelous Artizan) that the inward Walles might beare some good share in the burthen, and the outward be the lesse charged.

Thirdly, the Italians are very precife in giving the Cover a gracefull pendence or flopenesse, dividing the whole breadth into Nine parts; whereof two shalferue for the elevation of the higheft Toppe or Ridge, from the lowest. But in this point the quality of the Region is confiderable : For (as our 72itravius infinuateth) those Climes that feare the falling and lying of much Snow, ought to provide more inclining Pentices : and Comelinesse must yeeld to



of Architecture. 81 These are the vsefullest Cautions which I finde in Authors, touching the last Head of our Diuision, wherewith I will conclude the first Part of my present Trauaile. The second remayneth, concerning Ornaments within, or without the Fabrique: A Piece not so dry as the meere Contemplation of proportions. And therefore I hope therein, somewhat to refresh both the Reader, and my selfe.

A STATE OF A STATE

all and the second

L OF

and the second of the second o

ाठन वर प्रतर कि प्रस्तवर्णहर का स्वयत्र र

supervised to the first second the

i after, to budge any mit a with the

domed. Fer which each is mole

5 wanter one are under altri



82 OF THE ELEMENTS OF ARCHITECTVRF. The II. part.



VERY Mans proper Mansion House and Home, being the Theater of his Hospitality, the Seate of Selfe-fruition, the Comfortablest

part of his owne Life, the Noblest of his Sonnes Inheritance, a kinde of priuate Princedome; Nay, to the Poffeffors thereof, an Epitomie of the whole World: may well deferue by these Attributes, according to the degree of the Master, to be decently and delightfully adorned. For which ende, there are

two Arts attending on ArchiteEture, like two

of Architecture. 82 two of her principall Gentlewomen, to dresse and trimme their Mistresse; PIC-TVRE & SCVLPTVRE: Between whom, before I proceed any further, I wil venture to determine an ancient quarrell about their Precedency, with this Diflinction; that in the garnishing of Fabriques, Sculpture no doubt must haue the preheminence, as being indecde of neerer affinity to Architecture it selfe, and consequently the more naturall, and more sutable Ornament. But on the other side, (to consider these two Arts as I shall doe Philosophically, and not Mechanichally) An excellent Piece of Painting, is to my judgement the more admirable ObieEt, because it comes neere an Artificiall Miracle; to make diuerse distinct Eminences appeare vpon a Flat, by force of Shadowes, and yet the Shadowes themselues not to appeare: which I conceiue to be the vttermost value and vertue of a Painter, and to which very few haue arrived in



84

In these two Arts (as they are appliable to the Subject which I handle) it shall bee fit first to consider how to choose them; and next, how to dispose them. To guide vs in the choyce, wee haue a Rule somewhere (I well remember) in Pliny, and it is a prettie observation: That they doe mutually helpe to censure one another. For Picture is best when it standeth off, as if it were carued; and Sculpture is best when it appeareth so tender, as if it were painted, I meane, when there is such a seeming softnesse in the Limbes, as if not a Chiffell had hewed them out of Stone, or other Materiall, but a Penfill had drawne and stroaked them in Oyle, which the iudicious Poet tooke well to his Fancy.

Excudent aly spirantiamollius æra.

But this generalitie, is not sufficient to make a good *chooser*, without a more particular contraction of his Iudge-



of ArchiteEture.

85

Art, is set beforevs, let the first Caution be, not to aske who made it, least the Fame of the Author doe Captinate the Fancie of the Buyer. For, that excellent Men doe alwaies excellently, is a false Conclusion; whereupon I observe among Italian Artizans three notable Phrases, which well decipher the degrees of their Workes.

They will tell you, that a thing was done (on diligenza, Constudio, and Con Amore; The first, is but a bare and ordinary diligence, The fecond, is a learned diligence; The third, is much more, euen a louing diligence; They meane not with loue to the Bespeaker of the Worke, but with a loue and delight in the Worke it felfe, vpon some speciall Fancie to this, or that Storie; And when all these concurre (perticularly the last) in an eminent Author, Then perchance Titianus Fecit, or islows imples will serve the Turne, without farther Inquisition; Otherwise Artizans haue not



v their growthes and Perf.

(86).

78

onely their growthes and Perfections, but likewise their Vaines and Tymes.

The next Caution must be (to proceede Logically) that in Iudging of the Worke it felte, wee bee not distracted with too many things at once; Therefore first (to beginne with Pieture) we are to observe whether it bee well drawne, (or as more elegant Artizans tearme it) well Defign'd; Then whether it be well Coloured, which bee the two generall Heads; And each of them hath two principall Requisites; For in well Defigning, there must bee Truth and Grace, In well Colouring, Force, and Affection; All other Praises, are but Consequences of these.

Truth (as we Metaphorically take it in this Art) is a Iust and Naturall Proportion, in euery Part of the determined Figure. Grace is a certaine free disposition, in the whole Draught, answerable to that vnaffected franknes of Fashion,

in a liuing Bodie, Man or Woman, which

of ArchiteEture. 85 which doth animate Beautie where it is, and supplie it, where it is not,

Force confisteth, in the Roundings & Raisings of the Worke, according as the Limbes doe more or lesse require it; So as the Beholder, shall spie no sharpenesse in the bordering Lines; As when Taylors cut out a Sute, which Italians doe aptly tearme according to that comparison, Contorni taglienti; Nor any flatnesse within the Bodie of the Figure, which how it is done, we must fetch from a higher Discipline; For the Opticques teach vs. That a plaine, will appeare prominent, and (as it were) embof-Jed, if the Parts farthest from the Axeltree or middle Beame of the Eye, shalbe the most shadowed. Because in all Darknesse, there is a kinde of Deepenesse, But as in the Arte of perswahen, one of the most Fundamentall Precepts is; the concealement of Arte, Soe here likewise, the Sight must be sweetly deceaued, by an insensible passage, from brighter co-



88

lours, to dimmer, which Italian Artizans calle the middle TinEtures; That is, Not as the whites, and yolkes of Egges lic in the Shell, with visible distinction; But as when they are beaten, and blended, in a Di/b: which is the necress comparifon, that I can suddenly conceive.

Lastly, Affection is the Lively Representment, of any passion what soeuer, as if the Figures stood not vpon a Cloth or Boorde, but as if they were acting vpon a Stage; Andheere, I must remember, in truth with much marueile, anote, which I haue receiued, from excellent Artizans, that though Gladnesse, and Griefe, be opposites in Nature; yet they are such Neighbours and Confiners in Arte, that the least touch of a Pensill, will translate a Crying, into a Laughing Face; which Instance, besides diuers other, doth often reduce vnto my memorie, that Ingenious Speculation, of the Cardinall Cusanus extant in his



of Archite Eture. 89 extremes. And thus much of the foure Requisites, and Perfections in Picture.

In Sculpture likewise, the Two first are absolutely necessarie; The third impertinent; For Solide Figures neede no elecation, by force of Lights, or shadowes; Therefore in the Roome of this, wee may put (as hath beene before touched) a kinde of Tendernesse, by the Italians tearmed Morbidezza, wherein the Chissell, I must confesse, hath more glory then the Pensill; that being so hard an Instrument, and working vpon so vnpliant stuffe, can yet leaue Strokes of so gentle appearance.

The Fourth, which is the expressing of Affection (as farre as it doth depend vpon the Activity, and Gesture of the Figure) is as proper to the Carver, as to the Painter; though Colours, no doubt, haue therein the greatest Power; whereupon, perchance, did first grow with vs the Fashion of colouring, even Regall Statues, which I must take leave to call



90 The Elements an English Barbarisme.

Now in these sower Requisites already rehearsed, it is strange to note, that no Artizan, hauing euer beene blamed for excelle in any of the three last; onely Truth (which should seeme the most Innocent) hach suffered some Obiecti. on, and all Ages, have yeelded fome one or two Artificers, so prodigiously exquisite, that they have beene reputed too Naturall, in their Draughts; which will well appeare, by a famous Passage in Quintilian, touching the Characters of the ancient Artizans, falling now so aptly into my memory, that I must needes translate it, as in truth it may well deserue.

The Place which I intend, is extant in the last Chapter saue one of his whole Worke, beginning thus in Latine.

Primi,quorum quidem operanon vetuftatis modo gratia Visenda sunt clari Pictores fuisse dicuntur Dolumentus



The Address of the Ad

of Architecture.

91

The whole Passage, in English standeth thus:

He first Painters of name, whose Workes bee considerable for any thing more then onely Antiquitie, are faid to haue beene Polygnotus, and Aglaophon; whole bare Colourings (hee meanes I thinke in white and blacke) hath euen yet so many followers, that those rude and first Elements, as it were of that, which within a while, became an Arte, are preferred, before the greatest Painters that have beene extant after them, out of a certaine Competition (as I conceiue it) in point of Iudgement. After these, Zeuxes and Parasius not farre distant in age, both about the time of the Peloponesian Warre, (for in Xenophon wee hauc a Dialogue betweene Parahus and Socrates) did adde much to this Aree. Of which the first is faid, to have invented the



92

The second, to have more subtilly examined, the truth of Lines in the Draught; for Zeuxes did make Limbes, bigger then the life; deeming his Figures, thereby the more stately and Maiesticall; & therein (as some thinke) imitating Homer, whom the stoutest forme doth please, euen in Women. On theother side, Parasius did exactly limit al the Proportions so, as they call him the Law-giuer, because in the Images of the Gods and of Heroicall Personages, others have followed his Paternes like a Decree; But Picture did most flourish, about the daies of Phillip and cuen to the Successours of Alexander; yet by fundry habilities; for Protogenes, did excell in Diligence; Pamphilus and Melanthius in due Proportion, Antiphilus in a Franke Facilitie; Theon of Samos, in strength of Fantafie and conceiving of Passions; Apelles, in Invention, and Grace, whereof hee doth himselfe most


of Architecture. 93 tion, that being in other excellent fudies, a principall Man, he was likewise a wondrous Artizan, both in Painting and Sculpture. The like difference we may oblerue among the Statuaries; for the workes of Calon and Fgestas were somewhat stiffe, like the Tuscan manner; Those of Calamis not done with so cold stroakes; And Myron more tender then the former; a diligent Decency in Polycletus aboue others, to whom though the highest prayse bee attributed by the most, yet lest he should goe free from exception, some thinke hee wanted solemnesse; for as he may perchance be layd to haue added a comely dimension to humane shape, somewhat aboue the truth; so on the other fide, hee seemed not to have fully expressed the Maiesty of the Gods: Moreouer, hee is fayd not to have medled willingly with the grauer age, as not aduenturing beyond smooth cheekes : But these vertues that were wanting in Po-



94

lycletus, were supplied by Phidias and Alemenes, yet Phidias was a better Artizan in the representing of Gods, then of Men; and in his workes of Iuorie, beyond all emulation, euen though hee had left nothing behinde him, but his Minerua at Athens, or the Olympian Iupiter in Elis, whose Beautie seemes to haue added somewhat, euen to the receiued Religion; the Maiestie of the Worke, as it were equalling the Deity. To Truth, they affirme Lypppus and Praxiteles, to haue made the neerest approach : for Demetrius is therein reprehended, as rather exceeding then deficient; hauing beene a greater aymer at Likenes, then at Louelines.

This is that witty Censure of the ancient Artizans, which Quintilian hath left vs, where the last Charactar of Demetrius doth require a little Philosophicall examination; How an Artificer, whose end is the imitation of Na-

ture, can bee too naturall; which likewise

man the state of the second of the second second

of Archite Hure.

95

wise in our dayes was either the fault, or (to speake more gently) the too much perfection of Albert Durer, and perhaps also of Michael Angelo da Buos naroti, betweene whom I have heard noted by an ingenious Artizan, a prety nice difference, that the German did too much expresse that which was; and the Italian, that which should be : Which seuere observation of Nature, by the one in her commonest, and by the other in her absolutest Formes, must needs produce in both a kinde of Rigidity, and consequently more naturalnesse then gracefulnesse: This is the cleerest reason, why some exact Symmetrists haue been blamed, for being too true, as neere as I can deliuer my conceit. And fo much touching the choyce of Pieture and Sculpture: The next is, the application of both, to the beautifying of Fabriques.

First therefore touching Picture, there doth occurre a very pertinent



96

doubt, which hath beene passed ouer too flightly, not onely by some Men, but by fome Nations; namely, whether this Ornament can welbecome the Outside of bouses, wherin the Germanes haue made so littlescruple, that their best Townes are the most painted, as Augusta and Norembergh. To determine this question in a word: It is true, that a Story well set out with a good Hand, will euery where take a Indicious eye: But yet withal it is as true, that various colours on the Out-walles of Buildings, haue alwayes in them more Delight then Dignity : Therfore I would there admit no Paintings but in Blacke and White, nor euen in that kinde any Figures (if the roome be capable) vnder Nine or Ten foot high, which will require no ordinary Artizan; because the faults are more visible then in small Designes. In vnfigured paintings the nobleft is, the imitation of Marbles, & of

Architecture it selfe, as Arches, Treezes, Columnes,

of Architecture. Columnes, and the like.

97

Now for the Inside, heere growes another doubt, whether Grotesca (as the Isalians) or Antique worke (as wee call it) should be received, against the expresse authoritie of Vitruuius himselfe, lib.7. cap.5. where Pictura (saith hee) Fit eius, quod est, seu potest esse, excluding by this seuere definition, all Figures composed of different Natures or Sexes; so as a Syrene or a Centaure had beene intolerable in his eye: But in this wee must take leave to depart from our Master, & the rather because he spake out of his owne profession, allowing Painters (who have ever bin as little limited as Poets) a lesse scope in their imaginations, euenthen the grauest Philosophers, who sometimes doe serue themselues of Instances, that have no Existence in Nature; as wee lee in Platoes Amphisbæna, & Aristotles Hirco-Ceruus. And (to settle this point) what was indeede more common and fami-



98

liar among the Romanes themselues, then the Pieture and Statue of Terminus, euen one of their Deities? which yet if we well consider, is but a piece of Grotesca; I am for these reasons vnwilling to impouerish that Art, though I could wish such medlie and motlie Designes, confined onely to the Ornament of Freezes, and Borders, their properest place. As for other Storied Workes. vpon Walles, I doubt our Clime bee too yeelding and moist, for such Garnishment; therefore leaving it to the Dwellers discretion, according to the qualitie of his Seat; I will onely adde a caution or two, about the disposing of Pictures within.

First, that no Roome bee furnished with too many, which in truth were a Surfet of Ornament, vnlesse they bee Galleries, or some peculiar Repository for Rarities of Art.

Next, that the best Pieces be placed

not where there is the least, but where

there

and the second second

of Architecture. 99 there are the fewest lights; therefore not onely Roomes windowed on both ends, which we call through-lighted; but with two or moe Windowes on the same fide, are enemies to this Art; and sure it is, that no Painting can be seene in full Perfection but (as all Nature is illuminated) by a fingle Light.

Thirdly, that in the placing there be fome care alfo taken, how the Painter did ftand in the Working, which an intelligent Eye, will eafily difcouer, and that Pofture is the most naturall; fo as Italian pieces will appeare best in a Roome where the Windowes are high; because they are commonly made to a descending Light, which of all other doth set off mens Faces in their truest Spirit.

Lastly, that they bee as properly bestowed for their quality, as fitly for their grace: that is, chearefull Paintings in Feasting and Banquetting Roomes; Grauer Stories in Galleries, Land-schips, and



(100)

IIO

Boscage, and such Wilde workes in open Tarraces, or in Summer bousses (as we call them) and the like.

And thus much of Picture, which let mee clese with this Note; that though my former Discourse may serue perchance for some reasonable. leading in the choyce of fuch delights; yet let no man hope by such a speculatiue erudition, to difcerne the Masterly and Mysterious touches of Art, but an Artizan himselfe; to whom therefore we must leaue the prerogative, to cenfure the manner and handling, as hee himselfe must likewise leaue some points, perchance of no lesse value to others; as for example, whether the Story be rightly represented, the Figures in true action, the Persons suted to their seuerall qualities, the affections proper and strong, and such like observations.

Now for Sculpture, I must likewste begin with a Controuerste, as before (falling into this Place) or let mee ra-

ther

of Architecture. 101 ther call it a very meere Fancie, strangely taken by Palladis, who having noted in an old Arch or two at Verona, some part of the Materials already cut in fine Formes, and some ronpolished, doth conclude (according to his Logicke) vpon this particular, that the Auncients did leaue the outward Face, of their Marbles or Free-Stone, without any Sculpture, till they were laid, and Cimented, in the bodie of the Building; For which likewise hee findeth a reafon (as many doe now and then very wittily, euen before the thing it selfe be true) that the Materialls being left rough were more managable in the Masons hand, then if they had beene smooth; And that so the sides might bee laide together the more exactly; Which Conceit, once taken hee seemes to haue farther imprinted, by marking in certaine Storied Sculptures, of oulde time how precifely the parts and Lines of the Figures that passe from one Stone



102

to another, doc meete; which hee thinkes could hardly fall out fo right, (forgetting while hespeake of auncient things, the auncient Diligence) vnlesse they had beene cut, after the ioyning of the Materials, But all these Inducements, cannot counteruaile the sole Inconuenience of shaking, and Dishoynting the Commissures with so many Strokes of the (bissell, besides an Incommodious Working on Scaffolds ; especially hauing no testimonie, to confirme it, that I haue yet seene among the records of Art; Nay, it is indeede rather true, that they did square, and Carue, and Polish, their Stone and Marble Workes, euen in the very Caue of the Quarrie, before it was hardened by open Aire; But (to leaue disputation) I will set downe a few Positiue notes, for the placing of Sculpture ; because the chusing hath beene handled before.

That first of all, it bee not too ge-

nerall and abundant, which would make

a

of Archite&ure. 102 a House, looke like a Cabbinet, & in this point, morall Philosophie which tempereth Fancies, is the Superintendent of Art.

That especially, There bee a due moderation of this Ornament in the first approach; where our Authors doe more commend, (Imeane about the Principall Entrance) A Dorique, then a Corinthian garnishment; So as if the great Doore, be Arched, with some braue Head, cut in fine Stone or Marble for the Keie of the Arch, and two Incumbent Figures gracefully leaning vpon it, towards one another, as if they meant to conferre; I should thinke this a sufficient entertainement, for the first Reception, of any Iudicious Sight, which I could wish seconded, with two great standing Statues on each side of a paued way that shall leade vp into the Fabrique, So as the Beholder at the first entrance, may passe his Eye betweene them.



104

gures of white Stone or Marble, bee not coloured in their Concauitie too blacke, For though Contraria inxta fe pefita magis illucefcunt (by an olde Rule) yet it hath beene fubtilly, and indeede truely noted that our Sight, is not well contented, with those sudden departments, from one extreame, to another, Therefore let them haue, rather a Duskifb Tincture, then an absolute blacke.

That fine and delicate Sculptures, be helped with Neerenes, and Groffe with distance; which was well seene in the olde controuersie, betweene Phidias and Alemenes about the Statue of Venus: wherein the First did shew discretion, and saue labour, because the Worke was to bee viewed at good Height, which did drowne the sweete and diligent strokes of his Aduersarie: A famous emulation of two principall Artizans, celebrated cuen by the Greeke Poets.

That in the placing of standing Fi-

gures

of Architecture. 105 gures aloft, wee must set them in a Posture somewhat bowing forward; bebecause(saith our Master, lib. 3. cap. 3. out of a better Art then his owne) the visuall beame of our eye, extended to the Head of the said Figures, being longer then to the Foote, must necessarily make that part appeare farther; so as to reduce it to an erect or vpright postion, there must be allowed a due aduantage of stooping towards vs; which Albert Durer hath exactly taught, in his fore mentioned Geometry. Our Vitruuins calleth this affection in the Eye, a resupination of the Figure: For which word (being in truth his owne, for ought I know) wee are almost as much beholding to him, as for the observation it selfe : And let thus much summarily suffice, touching the choice and vse of these adorning Arts. For to speake of garnishing the Fabrique with a Row of crected Statues, about the Cornice of euery Contignation

or

or Story, were discourse more proper for Athens or Rome, in the time of their true greatnesse, when (as Plinie recordeth of his own Age) there were neere as many carued Images, as living Men; like a noble contention, euen in point of Fertility, betweene Art and Nature; which passage doth not onely argue an infinite abundance, both of Artizans and Materials; but likewile of Magnificent and Majesticall desires, in euery common person of those times; more or lesse according to their Forsunes. And true it is indeed that the Marble Monuments & Memories of well deserving Men, wherewith the very high wayes were strewed on each fide was not a bare and transitory entertainement of the Eye, or onely a gentle deception of Time, to the Trauailer: But had also a secret and strong Influence, euen into the aduancement of the Monarchie, by continuall representa-

tion of vertuous examples; so as in that

of Architecture. 107 that point ART became a piece of State.

Now as I haue before fubordinated *Pieture*, and *Sculpture* to *ArchiteEture*, as their Mistresse, so there are certaine inferiour ARTS likewise subordinate to them: As vnder Pieture, *Mofaique*, vnder Sculpture, *Plastique*; which two, I onely nominate, as the fittest to garnish Fabriques.

Mosaique is a kinde of Painting in Imall Pebbles, Cockles and Shells of Iundry colours; and of late dayes likewise with pieces of Glasse, figured at pleafure; an Ornament in trueth, of much beauty, and long life, but of most vse in pauements and Floorings.

Plastique is not onely vnder Sculpture, but in deed very Sculpture it selfe: but with this difference; that the Plasterer doth make his Figures by Addition, and the *(aruer by Substraction,* whereupon Michael Angelo was wont to say somewhat pleasantly: That Sculp-



108

The Elements

ture was nothing but A purgation of superfluities. For take away from a piece of wood, or stone, all that is superfluous, and the remainder is the intended Figure. Of this Plastique Art, the chiefe vle with vs is in the gracefull fretting of roofes : but the Italians applie it, to the manteling of Chimneys, with great Figures. A cheape piece of Magnificence, and as durable almost within doores, as harder Forms in the weather. And here though it bee a little excursion, I cannot passe vnremembred a gaine, their manner of disguising the shaftes of Chimneys in various fashions, whereof the nobleft is the Pyramidall: beeing in trueth a piece of polite and ciuill discretion, to conuert euen the conduits of soote and smoake, into Ornaments; whereof I have hitherto spo-- ken as farre as may concerne the Bodie of the Building.

Now there are Ornaments also with-



of Architecture. 109 Seruatories of rare Beasles, Birds, and Fishes. Of which ignobler kind of Creatures, Wee ought not (saith our greatest *Master among the sonnes of Nature) * Arist. lib. 1 childifbly to despise the Contemplation; for in all things that are naturali, there is ever something, that is admirable. Of these externall delights, a word or two.

First, I must note a certaine contra- mar 28 rois rietie betweene building and gardening : Daugason For as Fabriques should bee regular, so Gardens should bee irregular, or at least cast into a very wilde Regularitie. To exemplifie my conceit; I haue seene a Garden (for the maner perchance in= comparable) into which the first Acceffe was a high walke like a Tarrace, from whence might beetaken a gene. rall view of the whole Plott below; but rather in a delightfull confusion, then with any plaine distinction of the picces. From this the Beholder descending many steps, was afterwards conueyed againe, by severall mountings and va-

cap.5. ce part. Ansent. Sei mi Sugeoxi-VELY TRISERIOS This we the in. MOTÉRON GODT Thoradev. Er QUOINDIS TISIT



110

The Elements

lings, to various entertainements of his sent, and sight: which I shall not neede to describe (for that were poeticall) let me onely note this, that eucry one of these diuersities, was as if hee had beene Magically transported into a new Garden.

But though other Countreys haue more benefite of Sunne then wee, and thereby more properly tyed to contemplate this delight; yet haue I seene in our owne, a delicate and diligent cu-'riositie, surely without parallel among foreigne Nations : Namely, in the Garden of Sir Henry Fanshaw, at his scat in Ware-Parke, where I wel remember, hee did so precisely examine the tin-Etures, and seasons of his flowres, that in their setting, the inwardest of those which were to come vp at the same time, should be alwayes a little darker then the outmost, and so serve them for a kinde of gentle shadow, like a piece not of Nature, but of Arte : which men-

tion

of Architecture.

III

tion (incident to this place) I haue willingly made of his Name, for the deare friend/bip that was long betweene vs: though I must confesse, with much wrong to his other vertues; which deferue a more solide memoriall, then among these vacant observations. So much of Gardens.

Fountaines are figured, or only plaine Water'd-workes : Of either of which, I will describe a matchlesse patterne.

The first, done by the famous hand of Michael Angele da Buonaroti, in the figure of a sturdie woman, wasbing and winding of linnen clothes; in which Acte, shee Wrings out the water that made the Fountaine; which was a gracefull and naturall conceit in the Artificer, implying this rule; That all designes of this kind, should be proper.

The other doth merite somelarger expressió; There went a long, straight, mossie walke of competent breadth,

greene, and soft vnder foot, listed on both

112

both sides with an Aquæduct of white stone, breast-high, which had a hollow channell on the top, where ranne a prety trickling streame; on the edge whereof, were couched very thicke all along, certaine small pipes of lead, in little holes; so neatly, that they could not be well perceiued, till by the turning of a cocke, they did sprout ouer interchangeably from side to side, aboue mans height, in forme of Arches, without any intersection or meeting aloft, because the pipes were not exactly opposite; so as the Beholder, besides that, which was fluent in the Aqueducts on both hands in his view, did walke as it were, vnder a continuall bowre or Hemisphere of water, without any drop falling on him. An invention for refreshment, surely farre excelling all the Alexandrian delicacies, and Pneumatiques of Hero.

Groues, and artificiall deuices vnder

ground, are of great expence, and little dignitie;

The second of the second second and

of Architecture.

112

dignitie; which for my part I could wish conuerted here into those Crypteria, whereof mention is made among the curious prouisions of Ticho Braghe the Danish Ptolemie, as I may well call him : which were deepe concaues in gardens, where the starres might be obferued euen at noone. For (by the way) to thinke that the brightnesse of the Sunnes body aboue, doth drowne our discerning of the lesser lights, is a popular errour; the sole impediment being that lustre, which by reflection, doth spread about vs, from the face of the Earth; so as the caues before touched, may well conduce, not to a delicious, but to a learned pleasure.

In Auiaries of wire, to keepe Birdes of all forts, the Italians (though no wastfull Nation) doe in some places bestow vast expence; including great scope of ground, varietic of bushes, trees of good height, running waters, and sometimes a Stone annexed, to con-



114

temper the Aire in Winter. So as those Chantereffes, vnlesse they be such as perhaps delight as much in their wing, as in their voice, may liue long, among so good prouisions and roome, before they know that they are prisoners; reducing often to my memory, that conceit of the Romane Stoicke, who in comparison of his owne free contemplations, did thinke diuers great and splendent fortunes of his time, little more then commodious captinities.

Concerning Ponds of pleasure neere the habitation; I will referre my selfe to a graue Author of our owne (though more illustrious by his other * worke) namely Sarisburiens de Piscinâ.

And here I will end the fecond part touching Ornaments, both within, and without the Fabrique.

Now as almost all those, which have delivered the *Elements* of Logicke, doc vsually conclude, with a Chapter tou-

Be Nugis Curisl. Grs.

ching Methode; fo I am heere feized with

of Architecture. 119 Roomes of the Fabrique, which suddenly where it is taketh every Bebolder, by the secret power of Proportion: wherein let mee onely note this, That though the least error or offence that can be committed against fight, is excesse of height; yet that fault is no where of small importance, because it is the greatest offence against the Purse.

Symmetria is the conveniencie that runneth betweene the Parts and the VVbole, whereof I have formerly spoken.

Decor is the keeping of a due Reffeet betweene the Inhabitant, and the Habitation. Whence Palladius did conclude, that the principall Entrance was neuer to be regulated by any certaine Dimensions; but by the dignity of the Master; yet to exceede rather, in the more, then in the lesse, is a marke of Generofity, and may alwayes be excused with some noble Embleme, or Inscripti-



ORy .

1. 21 2

on, as that of the Conte di Beuilacqua, ouer his large Gate at Verona, where perchance had beene committed a little Disproportion.

Patet Ianua: Cor magis.

And heere likewise I must remember our euer memorable Sir Philip Sidney, (whole VVit was in truth the very rule of Congraity) who well knowing that Besilius (as hee had painted the State of his Minde) did rather want some extraordinary Formes to entertaine his Fancie, then roome for Courtiers; was contented to place him in a Star-like Lodge; which otherwise in seuere Iudgement of Art had beene an incommodious Figure.

Distributio is that vsefull Casting of all Roomes for Office, Entertainement, or Pleasure, which I haue handled before at more length, then any other Pieces and and and an and a star

These are the Foure Heads which euery man should runne ouer, before



hcc



of Archite Eure.

hee passe any determinate Censure, vpon the Works that he shal view, wherewith I will close this last part, touching Ornaments. Against which (mcc thinkes) I heare an Obiection, cuen from some well-meaning man; That these delightfull Craftes, may be diuers wayes ill applied in a Land. I must confesse indeede, there may bee a Lascinious, and there may be likewise a superfitious vsc, both of Picture and of Sculpture: To which possibility of misapplication, not onely these Semi-liberall Arts are subject; but cuen the highest perfections, and endowments of Nature. As Beautie in a light woman, Eloquence in a mutinous Man, Resolution in an Assafinate, Prudent obsernation of houres & humours, in a corrupt Courtier, Sharpenesse of wit and argument in a seducing Scholler; and the like. Nay, finally let mee aske, what ART can be more pernicious, then cuen

121

RELIGION it selfe, if it se conuerted

uerted into an Instrument of ART: Therefore, Ab abuti ad non roti, negatur consequentia.

should be reither the control of (control to

Thus having stitched in some fort together, these Animaduersions, touching ArchiteEture, and the Ornaments thereof; I now feele that contemplatiue spirits are as restlesse as a-Etime; for doubting with my felfe, (as all weakenesse is icalous) that I may be thought to have spent my poore obferuation abroad, about nothing but Stone and Timber, and fuch Rubbage; I am thereby led into an immodestie of proclaiming another Worke, which I haue long deuoted to the seruice of my Countrey Namely, A Philofophicall Surney of Education, which is indeed, a second Building, or repairing of Nature, and, as I may tearme it, a kinde of Morall ArchiteEture; whereof fuch

Notes às Paue taken in my foreigne borrou

of Architecture. 123 transcursions or abodes, I hope to vtter without publike offence, though still with the freedome of a plaine Kentiss man. In the meane while I haue let these other Gleanings flie abroad, like the Bird out of the Arke, to discouer what sooting may bee, for that which shall follow.

FINIS.

Errata.

Pag. 6. lin, 8. for as, reade is. Pag. 48. lin. 2. for cuncatim, reade cuncatim. Pag. 77. lin. 6. for (wo, read (who. Pag. 80. lin. 9. for wifely, reade with. Pag. 88. lin. 19. omitted in the Margin the verfes following, touching the coincidence of extreame affections; reprefented by Homer in the perfon of Hectors wife 325 Painters and Poets have alwaics had a kind of congeniality.

ΙΑΙΑΔ. ζ. [•]Ως εἰπῶν ἀλόχοιο φίλης ἐι χέρτιν ἐθηκε, Παῦδ' ἐἰν, ήδ' σ'egs μιν κηκόδεϊ δίξατο κόλπω. Δακρύσεν γελάζαζα. --- That is,

Shee rooke her fonne into her armes, weepingly laughing.













D624 W937e

.

