

LAPIDARY
OR,
THE HISTORY
OF
PRETIUS STONES:

With cautions for the undeceiving of
all those that deal with
Pretious Stones.

By THOMAS NICOLS,
sometimes of *Jesus-Colledge* in
CAMBRIDGE.

Inest sua gratia parvis.

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- 144 NICOLS, THOMAS. A LAPIDARY: OR, THE HISTORY OF PRECIOUS STONES: WITH CAUTIONS FOR THE UNDECEIVING OF ALL THOSE THAT DEAL WITH PRECIOUS STONES

Cambridge; Thomas Buck 1652. 239 pp., leather bound. 5½ × 7½ inches

This is the first book on gems written in English. The first book to "undecieve" the gem expert as to the medical or supernatural efficacy of gemstones. This book was so important in its day that in 1675 a complete translation into German was made. The contents of the book are in two parts; the first dealing quite thoroughly with the general attributes and conditions of gems; the second with particular descriptions of gems. The contents of the book talks of gems growing better near the Equator; salt content in gems causing transparency; hardness as the result of a perfect union of well packed matter; air causing gems to be fiable (divisible); the ruby is the true carbuncle; the making of doublets; a fine amethyst being worth as much as a fine diamond; how to foil back a gem to enhance its beauty.

Thomas Nicols was the son of a physician and a native of Cambridge. He studied for some time at Jesus College, Cambridge.


Scarce First Edition of the First English Lapidary. "An important lapidary is that by Thomas Nicols, sometime of Jesus College Cambridge. . . . A certain amount of confusion has arisen concerning this book owing to the fact that three issues of it appearing during Nicols' lifetime, each bearing a separate title. [See: the Gentleman's Magazine, Dec. 1842, p. 594. Also the Catalogue of the Library of the British Museum and that of the Bodleian Library]. These are as follows: A Lapidary. . . . 1652; Arcula Gemmae. . . . 1653; Gemmarius Fidelis. . . . 1659. All three are identical with the exception of the title pages."—Adams.

Nicols follows DeBoodt closely and quotes him frequently. He also adopted DeBoodt's classification of gems. "Interesting matter about amber and jet, pp. 165-172; the lodestone, pp. 195-207."—Wheeler Gift Cat.: I, 136.

This edition is not in the Duveen or Young Collections. Duveen had a copy of the 2nd English edition of 1653; Dr. Ferguson describes a German translation of 1734, and notes that very little was known about the author. Also that even the first German translation of 1675 has become so rare and was an excellent book that a new German translation was finally published in 1734.—Bibliotheca Chemica, II, p. 138. Partington, History of Chemistry: II, p. 103 Wing: N-1145, Adams, Birth and Development of Geological Sciences, pp. 163-64.

To the Right Worshipfull the
Heads of the *Universitie* of
CAMBRIDGE.

Right Worshipfull;

 Very thing according to its perfection is valuable, and the more glorious the more estimable. It is not the greatnesse of any thing that ought to purchase it esteem; nor must the smalnesse or littlenesse of a vertuous created substance decrease its worth: But great things as joyned with the glorie of their perfection, are so and no otherwise of great and high esteem: and little things are no otherwise valuable, then according to the glorious beauty of their perfection. Here, Right Worshipfull, I present you with things great and small, but with none without their vertues. They are created substances of the most enduring nature, which this our part of the subcelestiall world doth contain: The glory

of those which shall here find beautified with externall grace, will feed your eyes with much pleasure in beholding: and their internall vertues, and the symboles whereby by them are discovered to us the glorious excellency of super-celestiall things, will in the right consideration of them no lesse feed your spirit with delight, then doth their externall beautie and perfection please your eye, when it doth behold their glory. Every one out of their common apprehensions of worth, and out of that mean perception which they have of things dignified above others with beauty and with glory, esteem them valuable: Gemms and Jewells are thus dignified with externall glory, and enricht with internall symbolical vertues. For this cause with those that have but mean and common apprehensions of their worth, they are esteemed. And for their symbolical resemblances of super-celestiall things, amongst the wisest of ancient times they have had upon them an high-estimate of value and of worth. Surely, we live not in the most unknow-
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ing times of the world; nay, never was this part of the world fuller of knowledge then now it is, wherein many are blest with excellent gifts and endowments by which they are enabled to enquire more thoroughly into the nature and causes of things, then ever. Amongst these who know the true nature of things, surely, nor gemms, nor jewells, nor any other vertuous thing shall want their due esteem. Nor with you, Right Worshipfull, I am sure, can that which is truly vertuous want its value.

It is a Philosophick axiome, *Inest sua gratia parvis*; I have here taken the pains to open the small cabinets of this excellencie, that I may discover the true vertues which are contained in many smal things and little creatures. This I have done, first, by a search and diligent enquiry into the causes and natures of Gemms, and into such qualities as may possibly from thence in them arise: Then by partly acquainting *Anselmus Boetius* with the *English* tongue: In the doing of which, I have endeavoured, according to what I
find

find in Scripture, and according to what I find in other Authors, to take away that confusion about the species of gemms, which doth cause them to be hardly and difficultly known of what species and kinds they are. And withall, I have not onely laboured with *Bortins*, but also with divers other *Lapidists*, to shew the true way of discerning fictitious and artificiall stones or gemms, from those that are really and truly the works of nature, that so the fallacies and sophistications of Artists, being clearly and perspicuously manifested and discovered, nature may not be belied in the glory of her own naturall workings and actions.

This is the summe of that pains which I have here taken; which together with my whole endeavours in this kind, Right Worshipfull, with generall good intentions, I dedicate to you, that under your protection it may in the light detect falsehood, and discover truth to many.

Your Worships humble servant,

THO. NICOLS.

To the courteous Reader.


COURTEOUS READER;

THat, that may be thy profit and pleasure I present thee with, though it hath been my labour and pains. I acknowledge it, as mine it is not a labour worthy thy commendations: Nevertheless, as thou reapest profit by it, or conceivest pleasure in it; so commend the pains of him that hath here laboured, and this labour of his painfull endeavours to thy friends.

Farewell.

T. N.

B.


 The Contents of the *Lapidary*,
 or Book of cautions.

In the generall Treatise are

1. *The generall definition of Stones.*
2. *Generall division.*
3. *Manner of their generation.*
4. *Originall of Gemms according to Hermes and Plato.*
5. *The places of their births in generall.*
6. *The causes of perspicuity and diaphanitie.*
7. *The materiall cause of Transparency.*
8. *Cause of the colour in stones.*
9. *The cause of hardnesse.*
10. *Cause of the ponderousnesse of them.*
11. *Of the adulteration, and the way of its discovery.*
12. *The way of making pretious stones in their enclosures appeare fairer and larger then they truly are.*
13. *The use of foyle, tinctures, and bractea.*
14. *To help the softnesse of Gemms.*
15. *To colour Crystall, that it may resemble gemms with colour.*
16. *The manner of taking away the colours of gemms naturally coloured.*
17. *Artificiall stones, the matter of them.*
18. *The way of polishing and engraving pretious stones.*
19. *The faculties of gemms and pretious stones.*
20. *Effects attributed to pretious stones which their natures are not capable of effecting.*

21. *Langius his opinion concerning the generation of gemms and pretious stones.*
22. *Supernaturall effects of stones improperly so called.*
23. *The causes of all effects.*
24. *Rules to discern them.*
25. *Conditions to make effects truly naturall.*

In the Book of Particulars, are contained these things :

1. *The description of the stone in the front of every Chapter.*
2. *The tinctures, soyls, and Bractea by which naturall gemms and pretious stones, that are either diaphanous or throughly transparent, are helpt in their glory, and set out in their lustre.*
3. *The adulterations of pretious stones and gemms.*
4. *The names of them, by which they are diversly known in severall countreys by severall Nations.*
5. *The species of every gemme and pretious stone, accordingly as divers Authours do render the discovery of them, that they may be known.*
6. *The places of the births of every kind and species of gemme and pretious stone.*
7. *The dignities and value of every pretious stone and gemme, according to divers Authours.*
8. *The properties of pretious stones and gemms.*
9. *The Physick uses of them according as divers Authours have delivered them in their severall writings.*

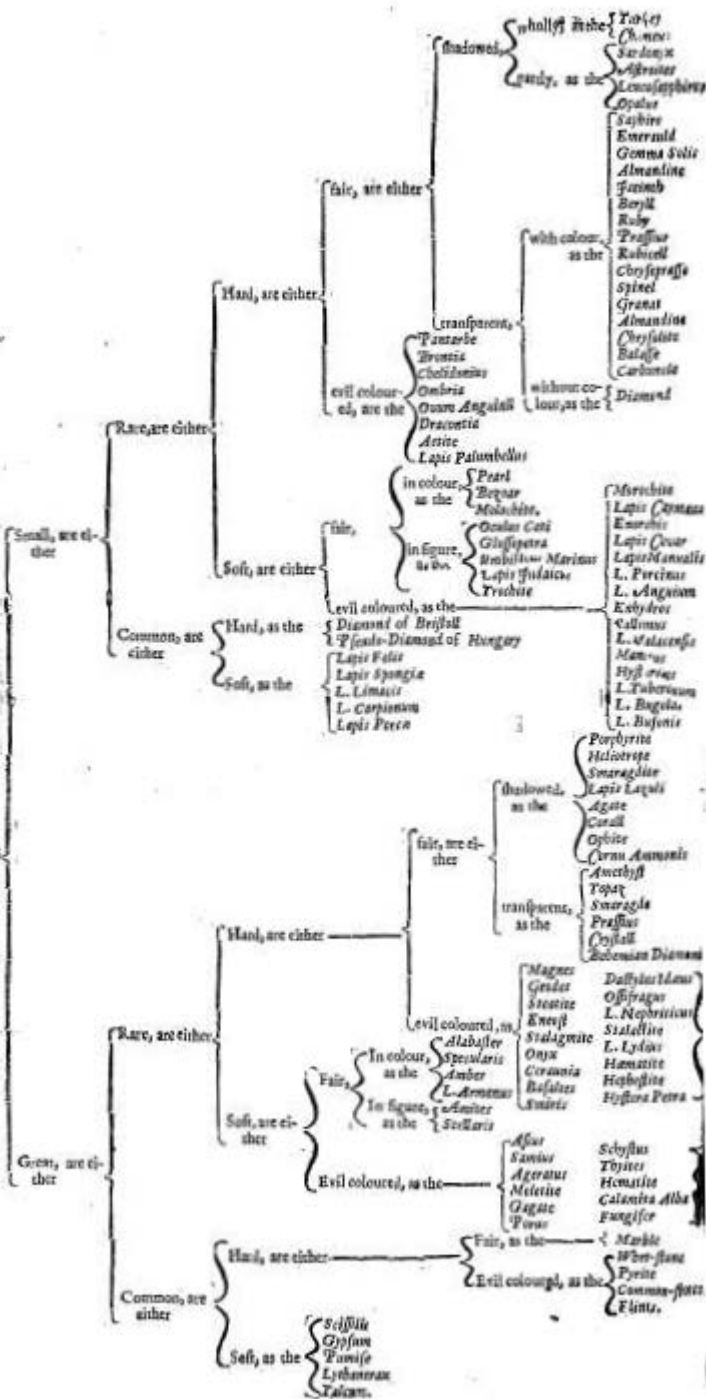


An Admonition or Advertisement to the Reader.

Reader,

IF thou wouldest be free from many superstitions in the use of pretious stones, and undeceive thy self as concerning the strange vertues, powers, and faculties which by divers Authours in the end of every Chapter they are reported and related to be endued withall, though contrary to what their own natures are or can be capable of: First, read the Generall part of this Historie, for in it is a discovery of Satanick subtilties, and of the superstitious use of stones, whereby at unawares many good men have been, and are still ensnared. Take therefore this well-wisht caution to thee for thy security.

STONES are either





*Of Pretious stones or Gemms
in generall.*



Stone is an hard, mixt, inani-^{Definition of}
mate, solid, inductile body, ^{a Stone.}
which cannot be dissolved in
water, concrete by nature of
simple earth, without many al-
terations, as of its chief and most
conspicuous matter. Stones ge-
nerally are solid ornaments ordained of God for
the bedecking of the fabrick of the world. The
celestiall houses have the Corner-stone of heaven
for their support: and here on earth also our sum-
ptuous edifices and glorious temples have their cor-
ner stones, without the which they cannot be up-
held. Stones are the Almighty's blessings, they are
members of the world which do adde perfection to
it, and were these solid members wanting, the
world would be dismembred. They do as it were
poize or ballance the centre of the world, and to the
whole they do equally proportion all its parts. As
the wise disposer of all things had well mixt them
with their fellow creatures, so they made up the
worlds centre: But no sooner are they forced from
this good order, but straight appeareth another Ba-
bel, they do produce confusion. They are no sooner
forced to contradict their own natures in the ascents

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Of pretious stones or Gemms in generall.

of their graduall irregularities to heaven, but straight they do cause their preposterous builders to be smitten in their tongues, to be confounded in their languages, and to be disperst abroad as strange nations, who cannot understand the one the others speech. They are the rock on which the earths tabernacles, domicils, and temples are all founded, firm'd, and steadied; and the firmament of it, and them, of all, is the Rock of heaven, who hath so *laid the foundations of the earth that it shall never be moved.* They (as the opinion of some is) have vegetative souls, or lapidifick spirits infused into them from above, by which they live and draw the likenesse of their substance, their lapidifick juyce, their proper nourishment, for their sustentation, for the preservation of their being, and for their further growth and increase of their own proper substantiall *moles*, masse, or lump. Herbs draw their fructifying juyce from the circumjacent earth by thready roots, thereby to sap their bodies and their branches, that so in their due season they may send forth buds, blossoms, leaves, and fruits; and as these are diversly differenced according to their magnitude, fruits, forms, colours, qualities, and place wherein they grow: so also stones have their severall divisions, according to their magnitude, matter, forms, colours, transparency, opacity, semitransparency, and mixt forms. Other divisions they do admit of in respect of their native soyls, and the things to which they do adhere, and in which they grow. Neverthelesse, there are two generall heads to which all the divisions may be reduced; which are as follow.

Their life according to the opinion of some Authors, what it is.

Of pretious stones or Gemms in generall.

The generall division of stones.

STones are either 1. Common stones; or
2. Stones of esteem.

The Common stones are either very great, bigg, and formlesse lumps; or else they are in very great plenty; The most of these kinds are generally well known. The stones of esteem are very pretious and stones of great value, being commended to us in Holy Writ as the emblems of glory, integritie, and puritie. Of these some are of greater esteem, some of lesse: those of lesse esteem receive their denominations from the creatures in which they are generated; as *Chelidonium* is so called of *chelidon* a swallow; *Lapis Palumbellarum*, and *Alectorius* of the birds in which they are found. *Lapis Perca* from the fish called a perch, in which it is generated. The *Margarite* from the fish in which it is generated: and *Unions* are so called, because they are found *separatim* or single. The *Bezar* from the creature in which it is found. There are some stones of lesse esteem like unto plants, as *Corall* and *Coralline*. Others of a combustibile substance, and easily set on fire, as *Succinum*, and the *Gagate*. Others have a Mathematick form, and are round like an egge, as *ovum Anguinum*, *Geodes*, *Ætites*. Others have a Mathematick angular form, as *CrySTALLUS*, *Basaltes*, *Iris*. And others have a Mathematick hemispherick form as *Ombria*, *Crepandina*.

Those of great esteem are very pretious, and of great value: of which sort are these: The *Ruby*, the *Carbuncle*, so called from their fiery red colour. The *Facinēt*, a transparent stone like a flame of fire. The

Of pretious stones or Gemms in generall.

Chrysolite, a transparent stone of a gold colour. The *Crysoloprasius*, a transparent stone of the splendour of gold with the greenesse of a leek. The *Smaragde* and the *Prasius*, two transparent green stones. The *Saphire* a transparent stone of a sky colour. The *Beryll*, a transparent stone of a sea-green. The *Amethyst*, a transparent stone of a peach-bloom colour. The *Diamond*, a diaphanous gemm. The *Sardius*, *Sardonix*, *Chalcedonie*, and *Leucosaphirus*, which are all precious stones partly transparent. The *Turkey stone*, a gemm void of all transparencie, of a beautifull skie-colour. The *Chamebuia*, the *Agate*, the *Heliotrope*, very fair non-transparent stones.

All which in the manner of their generation differ much from other vegetatives, and from other creatures which are endued with sensitive souls, in the manner of their generation. As for other vegetatives, such as are plants, they are produced by the sowing of seed; which being cast into the ground, first dies, then receiveth a new body, and so groweth in its perfection by degrees, shooting it self forth in a large proportion, and in altitude above the superficies of the earth. As for creatures endued with sensitive souls, they generate by copulation, coition, or mixture of seed: but farre otherwise is the manner of the generation of pretious stones; as in this appeareth.

The manner of the generation of stones.

THESE creatures are generated of an humour which containeth in it self purest terrestriall portions resolved in *minimas partes* by the operation and elaboration of intelligences, as Langius and others think, or by the powerfull working of lapidifick spirits, as appeareth by what Boetius speaketh of their generation, in his book *de naturis Gemmarum in genere*. Being thus generated, they are usually by degrees augmented by the addition of new matter, and by the acquisition of new humour, as will appear in the generation of those stones which have their originall out of an humour called a Radix, or out of a confused matter which is in lieu of a Radix as the Chrystall and Amethyst. Others are generated by elaborations after the same manner, but have their originals in a Theca or Matrix, as the *Rubinus in Palatio*. The Margarites and Unions differ in the manner of their generation, from the generating of other Gemms or pretious stones, for these are generated of the pearly drops of chrystall morning dew, drunk in by the shell-fish called Scallops, and Cheripo: and indurated after the same manner that the Bezar is generated in the beast Bezar, or that stones are generated in the kidneys of men: and as these stones by the addition of new matter, are increased; so likewise the Unions are increast by the new addition of fresh draughts of purest chrystall dew, even by fresh supplies of that purest restorative liquour, taken in as the mornings draughts to serene and chearfull

Generation of
Unions.

dayes. Transparent Diaphanous Gemmes are all generated of a humour which containeth in its self most pure subtile earth, and by reason of its exquisite subtilty, it can by no means hinder the diaphanity of the water. So Anselmus Boetius.

*The use of the
knowledge of
Gemms.*

The knowledge of Gemms is an ornament to Princes; a mean by which Divines are oft-times instructed in the knowledge of spirituall things; for by these, *He that hath the key of David and openeth and no man shutteth*, doth often unlock the intricate sense, hidden meaning, and deep mysteries of the sacred truths of his holy word; for this cause in sacred writ oft times we have many heavenly things emblemized unto us, under the types and figures of Gemms or pretious stones; in this kind we may find very frequent mention made of them both in the old and new Testament, by Moses in the Law, by S^r. John in the Revelation: the depths also of the mysteries of other writers, who under the titles and figures of Gemms have comprehended many excellent allegories, by the true knowledge of pretious stones will easily be found out: so that these blessings which we do enjoy by the true knowledge of them; through the goodnesse of the Almighty, are none of the least blessings which we do receive at his hands. What creatures here on earth, have we, that are endued with so much sinceritie, puritie, claritie and splendour, that are so fit to resemble heavenly things by as these? so great are their sparkling glory, as that we may well compare them to the expanse which divides the upper and the neither waters, and is bespangled with multitudes of glorious

rious twinckling starres. Aaron being clad in his pectorall and guarded with files of these, had on his breast the emblems of puritie, and of glory, of light, of perfection, of truth, of justice. Josephus *lib. 3. Antiq. Judaic. c. 12.* testifieth that the Hebrews, were wont to set the twelve stones of the ephod in their banners, hoping that for this cause God would be more mercifull to them in their warres; and as it were by these twelve stones putting him in mind of their twelve tribes, and imploring his mercie, and craving his help for the deliverance of their tribes out of the hands of their enemies. The knowledge of them will not onely be an ornament to Princes, a mean of knowledge to Divines, and those that are studious of Divinity; but it will be profitable and pleasant to all that desire truly to meditate the wonderfull workings of God in his creatures.

*Originall of Gemms according to
Hermes and Plato.*

Hermes Trismegistus and Plato have determined of the originall of Gemms and of other things after this manner: Both say that there is a certain common virtue and vivifying spirit, infused from heaven and from the starres into the whole world, and every part of it, which some call, *animam mundi*; but Plato *mentem divinam*, which doth perpetually long by its naturall power *novâ formâ vestiri*; and which doth so continually dispose its power in the matter of all things, *ut materiam quan-*

Of pretious stones or Gemms in generall.

quantumvis vilem & putridam, bene tamen dispositam in actum perfectissime etiam formæ reducat. Others say, that as there are varieties of matter in the world, some more pure some lesse pure, some more noble some lesse noble, some more excellent some lesse excellent; so also there are variety of spirits which do inhabite the world, some more glorious, some lesse, some delighting in this colour some in that, some in much transparency, others in opake dark and shady matters; and according to the various matter of their delight, they will form to themselves habitacles or domicils, which shall receive their tincture from themselves, as from their inhabitants; and probably by reason of this opinion of Langius and others concerning the inhabitation of intelligences in precious stones, there may be some ri'tt for those wonderfull faculties and powers that many Authours say Gemms are endued withall, though contrary to what creatures naturally can possibly be capable of. Many are of the like opinion concerning the generation of metals: and there are that say by reason of the great affinity that there is betwixt metallick spirits and Gemms, or betwixt the spirits that inhabite Gemms and the Gemms they inhabite, there is oft or may be made a transmutation of metals into Gemms; *stibium enim & plumbum in Facinthe formam, & minium in formam Smaragdi transmutatur, quod profecto non fieret, nisi magna cognatio spiritus metallici cum Gemmis esset.* So Boetius l. 1. p. 15.

Of the places of the birth of Gemms
in generall.

THe climates fittest for the production of stones of excellent beauty are such, saith Boetius, as do lie nearest the Tropicks; and therefore have the sunne ever neare them. They may be produced in any climate, but the more noble kind of gemms, and pretious stones, are in their excellency plentifully to be found in the Regions of the orientall Indies, and that without doubt, because it lyeth nearest the Tropick, and so hath the sunne ever neare it, *illiúsq; aestu fruuntur, sine quo è terra exhalationes que ad gemmarum nobilium propagationem, & generationem copiosè requiruntur, produci non possunt.* Boetius p. 13.

The causes of Perspicuitie and Diaphanitie in them.

IT is the opinion of learned enquirers into the secrets of nature, that the plenty of chrystall succulencies in the matter of Gemms, are the onely causes of their perspicuity and diaphanitie, as that without which they do suppose there can be no perspicuous or diaphanous bodies at all. But Boetius is of a farre different opinion, as appeareth by this which he saith. l. 1. p. 21. *Hi maxime falluntur, quia non solum aqua, sed & aer diaphanus est, licet atomis sit plenissimus,* that is, These are much deceived; for not onely the water, but also the aire is diaphanous,
D
though

Of pretious stones or Gemms in generall.

though it be full of atomes, and the fire doth much excell them both in diaphanitie; hence he saith *copia aquæ non est diaphanitatis causa, sed aliud quiddam*, to wit, the exact union of the earth, resolved in *minimas particulas*, and so plainly and exquisitely continued, that the body constituted of it, can by no means be discerned to have any pores or atomes in it. Continuities alone he saith is the cause of all diaphanitie, and that because the sight can in no wise be terminated in it, unlesse it hath some contingent accident in its averse part from the light or sunne; as some shadow, which so hindereth this part from being enlightened by the circumferent light, that the contingent or accidentall obscuritie cannot but be perceived; this may be experienced in a looking-glasse. Flaws, cracks, or fissures in glasse or chry-stalls, do much hinder their perspicuitie and diaphanitie, whether they be internall or externall; because they having every one their distinct superficies, do every one of them cause a divers reflection of the light, which diversitie of reflections procureth a certain kind of confusion, by which the diaphanitie of the body, otherwise diaphanous, is hindred.

The Materiall cause of transparencie.

THe materiall cause of this transparencie in gemms, is a species of salt, which is a transparent terrestriall matter diluted with water, which transparent salinous substance, doth by its acrimony penetrate, pierce, & cut the earth into most exquisite, subtil, smallest portions. Thus it doth make the
earth

Of pretious stones or Gemms in generall.

earth fit for diaphanitie, and worketh out the water, which is as it were its *vehiculum*, and at the same time by degrees uniting it self to these exquisite portions of earth, it doth grow together with them into a diaphanous gemme. So Boetius.

Those gemms which do contain most salinous matter in them, are softer and more diaphanous, then other gemms, as the *Cryfall*, *Beryll*, *Iris*, *Citrinus*, and the like.

The hardest gemms have least salt in them, and are lesse diaphanous, as the *Diamond*, *qui plus micat quàm transparent.*

The cause of the colour in pretious stones.

AS there are divers opinions concerning the diaphanity of gemms, so there are likewise concerning the tincture and colour of gemms, as will appear by what followeth. The colour which may be perceived in gemms, is either diaphanous, I mean transparent, or an opaque, obscure, and shadowed colour. This doth receive in the light, and not again transmit it; the other doth again transmit (saith Boetius) or send forth the light that it doth receive in: but absolute or perfect diaphanity and transparencie, admitteth of no colour at all: for wheresoever there is but any tincture of colour, the transparencie or diaphanitie must needs be imperfect, because the light seemeth to be affected and altered by the colour, and therefore cannot be terminated in its own proper colour, or rather perspicuity of the gemm, but is terminated in some strange, opaque, dark colour. *Ansel. Boet. l. 1. 23.*

Of precious stones or Gemms in generall.

In gemms or pretious stones there is to be found a reall colour, and an apparent colour. The reall colour alwayes remains though the light be absent. The diversitie of apparent colours do remain no longer then whilest the light is present.

In perfectly transparent or perspicuous gemms or stones, colours have their originall from the refraction or reflection of the light, which diversity of reflection in Crystals, is caused by the multiplicite of their superficies. This will appear in a triangular, or an hexagonall Crystal, which is absolutely diaphanous, hath no colour at all in it, and receiveth the light *rectis lineis*, and doth again transmit it *rectis lineis*; yet by reason of the refraction and reflection of the light upon the multiplicite of superficies, it doth represent to our view various colours: This we find true by experience, saith Boetius, *Licet intellectus id non capiat*, therefore *a sensu recedendum non est*, that is, though we can give no reason why pure, simple, unmixt light, in a diaphanous exactly transparent body, deprived of all colour, and the least tincture of any colour, should yet notwithstanding beget divers colours.

There are divers opinions concerning the originalls of the colours in gemms, stones, earths, trees, plants, and flowers. Some think the *species salis* to be the *cansa coloris*, and will have the *salem armoniacum nature*, which is very plentiful in mineralls, metall, and in the earth, to produce the various colours in plants, flowers, gemms, and stones, and in all other things. And that which they call *salem armoniacum nature*, est *sal quoddam spirituale vivificum, quod vino subtilima-*

sublimato junctum illo prius ascendit. This is thought by some to be the *primum movens* in the generation of things; and the conserving balsame of every thing, and that which doth adorn them with the beauty of their various colours. The plenty of this salt which is found in every thing, and may be extracted out of every thing, doth cause this opinion concerning the colours in gemms and stones. Another reason which is given for this, is this: because it being collected and distilled, doth of it self produce all kinds of colours. Some are of opinion that the various exhalations are the cause of colours. Others say that they are produced by the various commixtion of the elements, and by their concoction. Others, that *Colores à primis qualitatibus in materiam derivantur.* Others say that all colours do arise from the various commixtion of the two extreme colours, that is, of white and black, *lucis & umbra*, as appeareth in the *iris* or rainbow, wherein out of light and darknesse mixt, various colours do arise. Boetius is of opinion that these are no causes of colours in things; but that all colours are certain extrinsecall ornaments given of God to the creatures for distinction, and that they are produced out of their own proper seminary, out of which also he thinketh that their extrinsecall form ariseth. And that *sal armoniacum* which Quercetan calleth *balsammum natura*, he saith is their *vehiculum*.

Various opinions concerning the originall of colours in things.

For the most part all those stones and gemms which have a peculiar and proper form, have a *feminarium & principium coloris in materia ex qua formantur.* Boetius. p. 25. l. 1.

Of pretious stones or Gemms in generall.

Various of colours are produced by the mixture of colours.

Boetius de naturis gemmarum in genere.

The stones which have no determined form or figure he saith have their tinctures from exhalations as their remote cause, and from the minerall spirits, and Sal Armoniack as their propinque and nearest cause. The *primarii colores*, or especiall colours which arise not from the commixtion of other colours are these.

White, black, blue or skie colour, yellow, red, *miniatius color*, or vermilion or fiery red. Almost all kinds of colours are caused by the various mixture of these colours. But in their own originalls they are not mixt with others. Boetius.

By the Mixture of white and black is produced the colour of ashes; the more white there is, the more bright the colour is; the lesse, the more obscure.

Mix skie colour and yellow and it will produce a green colour.

Mix red and skie colour and you will have a violet colour.

Mix a miniated colour or a fierie red, and a red together, and you will have a purple colour.

Mix a white and a red and you will have a rose colour.

Mix a white and skie colour and you will have a milkie colour.

Mix a miniated colour, or a fierie red and yellow red together with a white, and you shall have a *belvus* or *gilvus*, that is, a carnation or flesh colour.

Mix yellow and green and you will have an orange or straw colour.

Mix a miniated colour, or a simple red, or a vermilion, and a yellow, and a red, and a white together,

Of pretious stones or Gemms in generall.

ther, and you will have an orange colour, straw colour, or a wax colour.

Mix white and orange, or straw colour, and you will have a pale colour.

Mix vermilion and yellow and you will have a yelk colour.

Mix green yellow and white, and you will have a box colour, or pale colour.

Mix red yellow and vermilion, and you will have a saffron or gold colour, or a brown or swarth colour, or a puke colour, sad ruffet or tawney, according to the various proportion of every colour.

Thus have we seen the various judgements of divers Authours, concerning the originall of divers colours, in gemms or pretious stones, and in plants and other creatures: some imputing the originall of the varietie of beauty in colour to the *balsamum nature*, or to the *Sal armoniacum* contained in the substantiall matter of all things: others making minc-rall exhalations the cause of colours in them: others the elaboration of the first qualities upon the matter of their substance. Some imputing it to the various commixtion of two extremities, to wit of black and white, of darknesse and light; But how can this be, seeing darknesse is no colour, but a privation of colour; and a very forgetfulnesse of all those colours which by light we may discover; for in its presence we are deprived of the remarkable views of those visible qualities of various colours, by which we do on earth distinguish things. Then as for light we see that it is guilty of no tincture in it self, and by how much it hath more or lesse of colour

Of pretious stones or Gemms in generall.

lour accidentall, so much it doth fall short of the perfection of its light. Light and darknesse are at continuall strife, the presence of the one causeth the absence of the other. No sooner did that blessed Spirit of light move upon the face of the waters of the great deep, but straight darknesse affrighted with the all-awfull presence of its glory fled away. No sooner doth the sunne arise to runne its course, gloriously setting forth from under its pavilion, but straight the amazed shades of darkeſt nights flee all away. No sooner doth the Sunne of Righteousnesse begin to dart his beams of glory into the horrid darknesse of mans sinfull heart, but straight this powerfull word, moving on the surface of this centre, begets a new creation, and sets up there a glory, by which through the qualities of earthly colours we may discover the excellency, of heavenly vertues. But the darknesse of the heart all amazed at this sudden powerfull motion in this centre, straight forsakes its station, and fearfully fleeing leaves its habitation to the light. If then there be such a distance betwixt light and darknesse, that nothing may interpose for agreement, how shall we think they should ever joyn by mixture in substantiall matters to produce varietie of colours. Since therefore there can be no agreement betwixt these two extremes, to make for the effecting of such distinguishing qualities as are colours; then if from them they do proceed, they must be the sad effects of their contrary operations: sad I say, because light being oppressed by darknesse wains; and which is our grief, darknesse can nothing be impayred, there being

being nothing worse then it. As it is darknesse it cannot be impayred, but as it is darknesse extended, it may be, and is, and shall be coarctated.

The cause of hardnesse in gemms.

THe *durities* and hardnesse in gemms is caused by the exact and perfect union of their pure well compacted matter, which is freed of its moisture by the power of heat, exhaling or extracting it; or of cold, compelling it by compression. Aire maketh gemms friable, and subject to be broken with every touch: water doth possesse them with a *mollities*, softnesse and thinnesse of texture, and a tendernesse of parts,

The hardest of all other gemms is the *Adamant*, then the *Topaz*, then the orientall *Chryssolite*; next the *Saphire*, *Granate*, *Facinth*, then the *Smiris*, then the *Fasper*, *Achate*, *Basaltes*.

The softest of all other gemms is the *Opalus*.

Perpicuitie in gemms is a signe of their excellent union, and of the well compactednesse of their matter; and from their well compactednesse and exquisite union proceedeth their *durities* or hardnesse, which hardnesse doth beget in all stones a fitnessse for politure, and an irresistibile power against fire; As doth appear by the *Adamant*, which because of its hardnesse can scarce be injured by the power of the fiercest fire; and for this cause it may be used symbolically as a signification of constancy. The Bohemian *Granate* by reason of its exquisite *durities* doth likewise suffer little injury by fire.

*Of pretious stones or Gemms in generall.**The cause of the ponderousnesse of Gemms.*

AS hardnesse in gemms is said to proceed from their exact union, so likewise this is some cause of their heavinesse & weightinesse: for those gemms which are not well compacted and united, are light, porous, and full of levitie. Another cause of the ponderositie of gemms, is a Mercuriall substance which is contained in them; of these sorts of gemms are all those that do consist of a mineral matter. And for this cause factitious gemms which are made of metalls, are heavier then any naturall gemms.

Of the adulteration of Gemms, and their discoverie.

ANy throughly transparent tintured gemm what ever, may be adulterated by two Sappires, or with two Crystalls, having a foyle betwixt them. But such duplicated gemms, which are tintured either with a foyle of Mastick, or with other coloured foyles in their intermediate space, are thus ordinarily and usually discerned by Jewellers: They will take the gemm and put it upon their thumb nail, and then direct their sight betwixt the plain of the gemm and of their nail, and if the upper part of the gemm be white, and no colour be added (which lying hid under the sides of the *cista* can there be perceived) then the upper part of the gemm will plainly appear white as it is, and so it will discover it self to be an adulterated gemm in stead of the naturall one. This is a very easie way to discover factitious

tious gemms from naturall ones. But those factitious gemms which consist of many angles fitted for this purpose, by various sections, hollowings, and excavations, cannot so easily be perceived, because the reflections from the angles, do give tincture from the soyl in every part of the superficies of the gemm. Another kind of ingenious fraud there is, by which gemms are adulterated, and that is when as cunning Artists do excavate a gemm, as a white Saphire, or a Crystall, in the lower part of it with a very small *foramen*, and then infuse into it a drop of some transparent liquour, which being artificially done, will very excellently diffuse its colour through the bodie of the whole gemm: Thus the idea's of true Rubies, Saphires, Smaragdes are produc'd. There is another kind of way of subtill fraud in gemms, when as cunning sophisticatours do macerate gemms in coloured or tintured waters, or so tincture them in fire, or by any other means, that the tincture or colour may enter the body of the gemm. These frauds can no otherwise be discovered, but by taking the gemms out of their *cists*, enclosures, or settings, and to taking a naked view of them with full sight. As for other gemms which are dissembled with tintured glasse, these for the most part seem to have a *pellicula* or little film in their superficies, as if they were anointed with oyl, which is never to be found in true gemms. There are factitious gemms made of Crystall, and of flints, and lead, which will be harder then the common glasse, and transparent as Crystal; in the making of which, to tincture them, cunning artists are wont to adde metalls to it, or tinctures, or

colours of metall, and thus they being committed to the fire, by the operation of the heat upon them, will be produced a gemme scarcely to be discerned from the true gemm, save onely by the atomes in the middle of their bodie, and by those small *bulle* which are often caused in them by the unequal working of the fire upon their matter, or by the extreme vehemencie of its heat. Of these kinds of factitious gemms there are some so perfect, and free from the small *bulle* and atomes, as that they can no wayes be discerned from the true gemms but by the use of the file; for these may be filed, the true ones cannot, except onely the Topaz and Smaragde: and by their gravitie, weight, and ponderosity; for these factitious stones are much heavier then the true, as consisting of lead and metall, which are very ponderous and weighty: and by their pining, dead, fading look, which if they be long beheld, do afford no pleasure to the eye by feeding it; whereas in true gemms there is alwayes a lively splendour, which by reason of the reflection of the severall tables or sides of the superficies, gives it self forth with the more sparkling delight. Another way of adulteration of gemms there is, very subtil, and more excellent then any of the former, which is this, Cunning Chymists will make a lapidifick water of mineralls, and then poure of it into waxen forms, which forms they will immerge for some time in an indurative water, and thus produce a gemm not unlike to the true. *Vide Anselm. Boetium lib. 1. c. de adulter. gem.*

Use of the file
in the triall of
gemms.

The

The way of making pretious stones in their enclosures appear fairer and larger then they truly are.

There are other subtil frauds about gemms, by which Jewellers can make them seem much larger then they are: As if the inferiour part of the gemm which is included in the *cistna* or setting, doth consist of many superficies, they will render the gemm greater to sight then really and truly it is, by reason of their manifold reflections. Again, if there be any intermediate aire betwixt the superficies of the gemm, and its *bractea* or foyl, it will according to its proportion, render the gemm greater then otherwise it is; if it be much, it will render it much bigger, because (saith Boetius) here the aire doth *subire vices corporis, ac gemmas tanto crassiores, quanto ipse est, videri facit*. Again, if pure untinctured glassè or Crystall, without any glutinosity, be placed in such an intermediate space, it will even as the intermediate aire, render the gemm much greater then it is. If also colour be added in the conjunction of stones, with a *lacryma* or *guttula*, or a drop of mastick, it will do the same: or if the glassè or Crystall be tinctured or coloured with the colour of the gemm, it will not onely render it greater, but with more tincture also.

Of pretious stones or Gemms in generall.

Of the foyle tinctures or bractea.

Use of foyle
tinctures and
bractea.

THe use of foyle tinctures and *bractea* are to administer beauty to the gemme; for this purpose Jewellers are wont to illine or anoint the *inferior superficies* of the gemm with a perspicuous colour; at other times to place under them a *bractea* or foyle; or a splendent tincture, which is made after this manner. Take one *guttula* or grain of mastick upon the point of an iron, heat it in the fire till it begin to melt, then separate the dark obscure part of it from its perspicuous part, by the pressure of your finger; then cast away that, and use this. To adde beauty and lustre of tincture to stones, some are wont to use this penetrating water.

Aqua gemmas penetrans.

Aqua gemmas penetrans fit ex Terebinthina & aqua vite, quibus adde colorem ex metallis extractum, dissolvatur in aqua urine stillatitia, & color perspicuus extrahatur per alembicum, & sic fit color. In this water macerate your crystall for some hours, and if the water be first warmed, the crystall will because of its softnesse easily receive in the tincture. For the making of this water to produce a red colour, *crocus Martis* must be used: to produce a green colour, *arugo*: to produce a skie colour, *Luna*, *Sal armoniack*, and *aqua fortis*: to produce a blue colour *arugo*, and *lapis lazuli*. Boetius p. 32.

To help the softnesse of gemms.

THe *mollities* of gemms, or their softnesse, which is contracted by continuance of time, may be thus helpt. Make a *cista*, or a setting of paste made of fine floure, then infold the gemm in two or three papers, and then cover it over with its papers on every side, in the setting of paste, with *crocus Martis*; then close up the setting with paste, and set it into an oven with bread, and so let it stand for six houres after the bread is drawn, and it will recover its pristine *durities*, or hardnesse. For the colouring of crystall Baptista Porta doth advise this.

To colour crystall that it may resemble gemms with colour.

R. *Partes stibii sex, auripigmenti partes quatuor, arsenici & crystalli partes tres, sulphuris partes tres, tutie partes duas, fiat pulvis tenuissimus ac olla indatur, suspende in hoc frustulam crystalli, vel in aeneis pilis inclusam, vel nudam immerge in hoc pulvere, & ita opponantur igni ut quaternis vel quinis horis excandescent, sed sine follium statu, nè liquefiant, vel in partes dissoliant:* you may at your pleasure take a little bit out and put it in again, till it doth answer your expectation: in taking this from the fire, you must beware of over sudden cooling of it, lest it cleave and break. If you would have the colour of a *Facinth*, you must remove them sooner from the fire: if a purple colour you must let them remain longer on the fire.

The

The manner of taking away the colours of
gemms naturally coloured.

THe Jewellers have also wayes to take away the colours of gemms naturally coloured; as of the *Amethyst*, *Granate*, and *Topaz*. and this they can do, either wholly or in part, wholly, by illining or anointing it over with *creta*, or chalk, and then committing it to the fire; In part, by anointing onely that part from which you would take the tincture or colour, and then exposing it to the fire; so you may make a gemm partly a *Diamond*, or partly a *Saphire*: or of a *Ruby*, partly a *Ruby*, and partly a *Diamond*.

For the making of factitious gemms with their perfect tincture, Artists are wont to do this; they will calcine *silices* and *topatius* even as crystall; then they will adde a colour, and so make *pastam ad gemmas*: thus for the making of a *Smaragde*, they will calcine *silices* and *topatius*, and for the colour adde *minium* and also *verdegreace*, and so make a paste for a *Smaragde*. And for a *Facinth* they will adde *cerusse* and *crocus Martis*: for a *Chrysolite*, *minium* and *cerusse*. For a *Saphire*, *Zaphura*, or *Lapis lazuli*, or else *Sal Armoniacum* and *Argentum*: and for a *Diamond*, *Stannum*: for a *Ruby* in like manner. Boetius l. 1. p. 33.

Artificiall stones.

ARtifiers are wont to make artificiaall marbles after this manner, R. *gypsum*, *calcem*, *salem*, *sanguinem*

sanguinem bovinum, pulverem lapidum, frustulas marmorum vel Faspidum, cum aceto, vino, cervisia vel lacte, vel ejus sero misce bene, & in pulvem redigantur, ut in mensam vel in columnas fundi possint. The various colour being added, this substance must be agitated and stirred up and down with a rod, that the veins may the better be disposed for a marble or statue; and when this is throughly dry *cum smegmate vel oleo*, it will receive an excellent politure.

Foyls and Braçtea.

BESIDES this tincturing of the substance of the gemm, there is an use of foyls and *braçtea*, which Jewellers have for the setting off of the beauty of diaphanous and transparent stones; and the use of these is very necessary; for whatsoever diaphanous gemms are included in their *cystis*, or settings and enclosures of gold, as in rings or ouches, they send forth no rayes, or splendour, unless they have under them a *braçtea*, leaf, or foyl, which may *instar speculi* repercusse and reverberate the light, and by this means delight the eye with rayes and sparklings. For this purpose it is that *braçtea* and metallick foyls were invented, which together with the repercussion of the light which they make, do also augment the tincture of the gemm; and by their various colours, by which for this purpose they are tinctured, they do quicken and revive the fading diluted colour of the gemm. These *braçtea* or foyls, are made either *ex foliis aris, auri, vel argenti*; then they are wont to prepare these by hanging them in
 F threads,

Of pretious stones, or Gemms in generall.

threads in a furnace made for the same purpose; that so they may be tintured with the vapour of that which being burned in the lower part of the furnace, doth ascend for that purpose; thus for a green foyl they are wont to burn green feathers in the lower part of the furnace, which by their vapour will tincture the foyl with a green colour: for to tincture the foyl with a blue colour, they are wont to burn blue feathers: for an emerauld colour, they are wont to burn the leaves of box after the same manner: and for a Ruby colour scarlet wool, or scarlet flocks. So. Baptista Porta *lib. 6. Mag. Nat.*

*The way of polishing and engraving
pretious stones.*

THe engraving and polishing of pretious stones, doth require, that it may be aptly done, a fitness, and preparednesse in the stones; for this purpose, a *Fasper*, *Agate*, or *Marble* may be fitted by a whetstone or grindstone, on which they are first to be whetted or ground, and then that they may be brought into a more exact form, they must be rubbed or ground with the grosse powder of a *Smiris* upon an *orbem stanneum*, after which they do give them a splendour by polishing them *cretâ tenuissimâ* or *Argillâ*, that is, with *terrâ Tripolitanaâ*.

The Diamond alone because of its hardnesse can onely by its own powder be formed by grinding. Which powder is also used for the more speedy excavating

cavating and forming of other gemms by grinding them with it: for this purpose, there must be a little orb of iron which may easily be turned up and down, which iron orb by its swift motion and continuall rotation or turning, doth forceably rub the powder of the Smiris or Diamond against the gemm for the engraving of it, and so doth by litle and litle excavate it. Marbles and other stones may by this iron or steel orb, alone without either of the powders, be without fear and danger of breaking excavated; but gemmes cannot. Boetius *lib. 1. pag. 35, 36.*

A stone for hardnesse next to the Diamond is the Smiris, the powder of which is used as the powder of the Diamond in the forming and fitting of stones for politure and engraving; which being formed and polished, may be thus engraven, either with letters or forms. Cover the polished stone with *Sevo* or with thin wax, then take an iron pencill and engrave in the wax, even to the very stone, what letters or forms you please, which being done, poure *aqua stygia*, or *aqua regia*, or *aqua fortis*, into those places where by engraving you have taken away the wax with your pencil, thus let the stone rest for a day, and the *aqua stygia* by eating into the stone will engrave that part of the stone from whence the wax was taken away, and the rest of the gemme which is covered with the wax vwill remain vwhole and untoucht.

Faculties of Gemms.

SOME there are that do deny gemms the proper grace of their naturall faculties, but surely this possession doth dispossesse them of their intellectuall guide of reason, or else by the onely elementary constitution they would have been informed, that such pure matter could not be without their vertues, nor these forms more then others want their *vires*; since that there are virtuall forms, reason by experience every day confirmed doth convince us: Nor this elementary union sympathizingly concurring to beget a glorious beaurty, be without its *quinta qualitas*, the result of the union of its elements wonderfully altered and diversly *inter se mixtorum*. Surely men of such opinions never dream'd of *gratia parvis*; but we know that God hath given every thing its proper grace: for *Inest sua gratia parvis*, *Inest sua gloria gemmis*, and *Inest sua singulis propria virtus*. Now as these who do denie the elements *inter se mixtis*, their peculiar qualities, and their essence or *quinta qualitas*, which doth arise of their coalescencie, as the result of the union of their matter, do *à scopo nimis aberrare*: so on the other side those do keep at no lesse a distance from the truth, who do attribute to gemms that are naturall things, powers supernaturall or above nature, as will appear in what follows.

Effects

*Effects attributed to pretious stones, which
their nature is not capable of
effecting.*

SOME do impute such *vires* to produce such effects to them, as these creatures cannot possibly be capable of: It is impossible that by the power of the naturall faculties, or elementary qualities of gemms or pretious stones, any man should be made to walk or be invisible; though Albertus Magnus and other Lapidists do attribute such a faculty as this to the stone called *Ophthalmius*. And as impossible it is that any stone should be so prevalent, by the power of any vertues which naturally it can be capable of, as to obscure the Sunne, or darken his beams, which facultie Plinie and others do attribute to the *Heliotrope*, of which they say, that if you put it into water in a vessel opposed to the Sunne, it will *mutare fulgorem solis accedentem percussu sanguineo*, and for this cause they call it *ἡλίου σκίασμα*, that is, *solis versionem*. But such have been the errors of the great searhers out of the secrets of nature, as that they have attributed to inanimate creatures which are of the lowest orders of all natures productions, powers supernaturall, and *vires* which their natures are not capable of knowing, and therefore they cannot possibly produce such effects as they report of them: Such as are the making of men eloquent, or making of men poore; or the making of men acceptable, or to be favoured, or rich, or fortunate, or safe, or secure. Yet are the strange transportations of some

Ophthalmius lapis.

Heliotrope.

Extraordinary effects of gemms.

men even at this day such, as that they will not let to affirm these things to be true in their experience, affirming that to be done by the naturall faculties of precious stones, in making men either favoured or accepted, or to be invisible, or to be suddenly enricht, which being contrary to the workings of God with men, must necessarily be the work of the devil, to delude, and ensnare, and enthrall men by.

Strange things are reported of Lapidists concerning the vertues of gemms, and of their strange changes upon severall occasions: Of the Diamond which the high priest wore in the breast-plate of Judgement upon the Ephod, when he went into the *sanctum Sanctorum*, it is said, That if the Jews had sinned against God, the Diamond would turn black.

Of an Emerald Lapidists say, That it doth discover adultery, and that where it accidentally meeteth with such persons, it doth suffer very strange changes and alterations.

Of the Turkey-stone they say, That it doth participate with all its masters dangers, perils, and evils; and that it doth receive his injuries, and the harm of his blows, falls, and contusions into it self. But those that think that any gemms or pretious stones are sensible of injuries, or affected with strange alterations, by a naturall discord which is betwixt them and unclean persons, think much amiss: for all gemms are materiall, mixt, naturall things, and therefore by their own proper qualities they can effect nothing else but naturall things: now to the effecting of all naturall things, whether the thing be effected by a gemm,
or

Of pretious stones or Gemms in generall.

or by any other thing, it is necessary that there should be a connexion, or some kind of knitting of its cause with the effect; but in the discovering of sinne by gemms, or in the gemms receiving its matters injuries into it self, there can be no such probable connexion of the cause with the effect found: therefore such admirable effects cannot truly be said to be the naturall effects of gemms. Neverthelessse, though gemms as being materiall mixt bodies, cannot by their own proper power and faculties produce such admirable and supernaturall things, as that we may say that they are truly and absolutely causes of such effects; yet they may be said to be continent causes, if we grant that which some affirm, namely, that oft-times they are the habitacles of *damones* and intelligences, which Johannes Langius in his epistles calleth *syderum & orbium motores*: and if we grant that gemms are habitacles for these, we need not doubt but these are those occult properties, which do produce so many strange effects as are imputed either to the interposition, wearing, or carrying of gemms, to the deluding of the senses of men in the right understanding of the truth of the nature of gemms and pretious stones.

Langius his opinion of the generating of gemms.

THese intelligences, *symplices*, or *motores orbium*, inhabiting under this concave orb of the Moon, and cooperating *athereo syderum calore & spiritu*, do (saith Johannes Langius, *epistolis medicinalibus*) with-
out:

out a *semen*, both by sea and land produce various effigies in rocks, *in Conchylis*; and likewise they do oft in their sporting frolicks, transform by the power of their own elaborations, sticks, boughs, trees, and plants, into stones; and by a like admired *Metamorphosis*, they do procreate many strange births, some of them to be admired for their originall, others for their shape. These are those that do possesse men with the strange effects of gemms, as if they were the true causes of such effects; when indeed they are the unespied, and secret productions of the hidden workings of these intelligences. Though Cardan, Albertus, Rueus and others do affirm that gemms are the causes of such effects, yet their affirmation in this kind must not be received as truth, because there is no kind of affinity, similitude, or proportion at all betwixt this kind of complexion, or betwixt this cause and this effect: for the effects of this kind are oft times more perfect then the cause. And yet the axiome is, *perfectionem effectus contineri in causa*. But it cannot truly be so spoken of gemms and pretious stones, the effects of which, by Lapidists are said to be, the making of men rich and eloquent, to preserve men from thunder and lightning, from plagues and diseases, to move dreams, to procure sleep, to foretell things to come, to make men wise, to strengthen memory, to procure honours, to hinder fascinations and witchcrafts, to hinder slothfulness, to put courage into men, to keep men chaste, to increase friendship, to hinder difference and dissention; and to make men invisible, as is feigned by the Poet concerning Gyges ring, and affirmed

Extraordinary effects of gemms.

affirmed by Albertus and others concerning the *ophthalmius lapis*, and many other strange things there are affirmed of them, and ascribed to them, which are contrary to the nature of gemms, and which they as they are materiall, mixt, inanimate bodies neither know nor can effect, by the proprieties and faculties of their own constitutions: because they being naturall causes, can produce none other but naturall effects, such as are all the ordinary effects of gemms: that is, such effects as flow from their elementary matter, from their temper, form, and essence, such as are the operations of hot and cold, and of all the first qualities, and all such accidents as do arise from the commixtion of the first qualities: such as are hardnesse, heavinesse, thicknesse, colour, and tast. These all are the naturall faculties of gemms, and these are the known effects of the union of their matter, and of the operation of the first qualities one upon another.

Supernaturall effects of stones.

THERE may no doubt supernaturall effects be wrought by gemms, and stones, but not such as can properly be said to be the effects of gemms or stones, or of which gemms or stones can be truly and absolutely said to be the causes, but onely instrumentall causes. Such effects as these are wrought either by the power of God, or of the devil. What the strange effects wrought by stones in the power of Satan are, will appeare by the survey of the extraordinary effects of gemms and pretious stones before mentioned. G The

Of pretious stones or Gemms in generall.

The supernaturall effects of stones ascribed to God in holy writ, are such as the Lord God produced in the wilderness to manifest his power, and to make his name great in the sight of his people Israel; such was his bringing water out of the rock by the stroke of Moses rod upon it, Deut. 32. 13. The rock here was the instrument by which this supernaturall effect was wrought, but not the cause of the effect of the flowing forth of water for the quenching of the thirst of Israel, for in truth none other effectually efficient cause there was of this effect, but onely Gods holy Spirit working in and by the rock, as by its instrument, conduit, or emissary, that so it might wonderfully send forth waters of its own springing up, as from a fountain to refresh the drought of Israel in a dry and barren wilderness.

That we may not be mistaken in the effects of creatures, it is necessary that these things should be known.

1. **W**HAT are the causes of effects.
2. How to judge of these causes, whether they be true or false, whether they be supernaturall or naturall causes, divine or diabolick causes.
3. How many kinds of effects from all causes may be found in the whole Universe.

The causes of all effects.

I. The causes of all effects are either supernaturall or naturall; they are such causes as are either truly and absolutely causes, or causes falsely so called; or else they are manifest divine causes, or diabolick seeming divine causes: all which may be comprehended under the two first heads of supernaturall and naturall causes.

II. That we may judge of these causes whether they be supernaturall or naturall, divine or diabolick, true or false: these following rules must be observed.

Rules.

Supernaturall causes they may be taken to be,

1. If it be manifest that the effect doth never follow the cause, or that it followeth it by accident.

2. If wise understanding judicious men, who have the use and experience of things, do upon the supposition of ordinary effects, deny that which is thought to be the cause, to be truly the cause.

3. If by comparing the thing with other causes which are known, the manner of applying of it be very different, involved, and intricate.

4. If the thing have no affinity with its effect, as here, when *Arbor dicitur producere bovem.*

5. If the cause doth produce the effect *separatim*, and without any conjunction of other causes, which have in them a power of producing.

6. If the cause doth produce an effect to some

end to which properly the effect doth not belong.

7. If such an effect from such a cause do never again happen, notwithstanding the remaining or existing of some or of all the same conditions.

Rules è regione.

Naturall causes they are taken to be,

1. If it be manifest that the effect doth really follow the cause, and not by accident.

2. If prudent pious men do upon the suppositions of ordinary effects according to their experience, in the use of things, not deny that which is taken to be the cause, to be truly the cause.

3. If the thing effected by such a cause, being compared with known causes, doth not in its manner of applying differ, or is not involved, or intricate.

4. If the cause have affinity with its effect, that is, if it do produce such an effect as is meet for such a cause to produce.

5. If the cause doth produce the effect not *separatim*, but by the conjunction of other ordinary causes, which are endued with power and do usually joyn together for the producing of such or such an effect.

6. If the cause doth produce an effect for the same end to which properly the effect doth belong.

7. If that the same conditions existing, the same cause doth produce the same effects.

Whether

Whether the cause be Divine or Diabolick,
true or false, it will thus appear.

WHAT ever things there are that are truly called natural, if they undergo or suffer an impulsion into various and divers parts, indeterminately and confusedly, they cannot be said to be otherwise moved, then by an extrinsick power of impulsion; which power if it be not open and manifest, must of necessity have an occult and secret spirituall mover, which can be none other but either God or the devil, either good or bad angels.

Upon these grounds it may be concluded, that the motion of the ring in which the Turkey-stone is set, by the pulsation of which (it being hung by a thread perpendicularly in the midst of a glasse) against the sides of the glasse, the houres are spontaneously indicated; it may (I say) be concluded, that if this pulsation by which the houres are indicated or shewed, be not caused by the motion of the hand of the person that holds the string, to which the ring is fastened (*quod puto*, saith Boetius,) then that this motion hath its perfection from the power and help of the devil.

Gemms and pretious stones are onely naturall causes of their effects, and for this cause the effects of them can be onely naturall, and such as are alwayes reall effects, and never intentionall; and materiall effects and seldome spirituall (*viz.*) then onely when such effects are effected by some mean or other, which may more truly be determined to be a cause then the gemm it self.

Of pretious stones or Gemms in generall.

What we have determined concerning the *Turchoyse*, the same (upon the same ground) we may determine and conclude concerning those gemms, which are said to work strange effects by the power of celestiall figures engraven on them: for all such celestiall figures are nothing else but fictitious and imaginary things, and no reall entities at all; and therefore cannot be capable of any power to do any such strange effects: neither have such figures, or can they have, any conveniencie or agreement at all with things here below, for the producing of any effects in them, or by them.

Whether the cause of this or that effect be the true cause of it or no, will appear by these things.

Rules.

1. If the cause be such as doth in no kind repugne or contradict the effect. Such causes as these are all those that have in themselves the perfection of the effect, either virtually or formally.

2. If the cause do act within the certain limits or bounds *alicujus spatii*, together with all such things as are necessary to produce such an effect. And the effect doth upon this working of the cause, without any prejudices to the contrary, or interceding impediments, follow in its determined time, according as the cause within the determined bounds of its space is applyed, to produce this or that effect sooner or later.

3. If

3. If the cause applyed have alwayes the same power and force, and be free from all superstition, and every suspection thereof.

4. If that the cause being taken away, the effect (notwithstanding all other things and circumstances remain) doth not, or cannot follow.

III. That we may not be mistaken in the effects of creatures, it is necessary to be known, How many kinds of effects from all causes may be found in the whole universe.

Such effects as are to be found in the world are these:

First, Effects which are in their perfection above all the power of naturall causes: For example sake, 1. No naturall cause can separate the heat from the fire; nor can any naturall cause make fire to burn without heat. 2. It is above the power of a naturall cause to make a man invisible: no naturall cause can effect this, because man is an opaque or an obscure body, and such a body as hath no perspicuity or transparency at all in it: and therefore it cannot possibly be, that it should be made inconspicuous or disapparent without some present impediment. *Boet.*

Secondly, Effects which do not exceed the power of naturall causes, but yet are above the mean which naturall causes do use, to produce such effects according to the prescript rule, and order of nature. Such an effect is this which followeth: The Saviour of the world was born of the Virgin Mary, as it is naturall for a man to be born of a woman: but here, the mean and manner of begetting, and of conception is supernaturall, and above all the power of naturall

rall causes: for here the conception and manner of begetting was altogether without the coition and congression of man, which effect could be no otherwise caused then by a supernaturall power; namely by the power of God, who did wonderfully effect the conception and birth of Christ in the wombe of the Virgin, by the power of his Holy Spirit. These two first kinds of effects which have been and may be found in the world, Boetius (*l. 1. p. 45.*) saith, cannot possibly be brought to passe, but by the power of God, or of the devil, God permitting.

Thirdly, Effects which do not exceed the power of naturall causes, but yet the causes applyed for the producing of these effects do not keep the ordinary mean for the producing of them. Such an effect is this of Chymistry, when as by chymicall art gold is made of silver: And such an effect is this which is so oft practised in natures orchards and gardens; where when as nature by her own work doth produce the severall species of fruits from their own proper and peculiar originalls; art doth as it were force and violate her to contradict her law, rule, and order, by insitions and inoculations: and by this means we may oft times see the fruitfullest and best trees, bearing fruits of other stocks then their own.

Fourthly, Effects which do depend upon naturall causes, which observe and keep the ordinary mean which are to be applyed for the producing of such and such effects. Such an effect as this it is, when as the rain is generated by the ascending up of vapours; and when ice is dissolved into water by the power of the heat of the Sunne; and when man is generated of

Of pretious stones or Gemms in generall.

of man and woman, which is natures ordinary way for generation.

These are the effects which are found in the world, the fourth and last kind of which are purely naturall; which that they may be really so, they do require divers conditions.

Conditions to make effects truly naturall.

1. That an effect may be truly naturall, it is required, that there should be some subject present, which may receive the effect from its efficient cause.

2. It is required, that there should be a certain latitude or distance betwixt the efficient cause, and the subject out of which the effect is to be produced, beyond which distance or limit, the effect cannot at all be produced; this will appear by this solary example. The sunne whilest it hath its residence in *Tropico Australi*, or in the Tropick of *Capricorn*, cannot so warm the regions and countreys that are situate about the Artick pole, as it doth warm them when it hath its residence in the Tropick of *Cancer*.

3. That an effect may be naturall, it is required, that the efficient cause or immediate agent be not hindred in its action upon its subject, and penetration of its subject, by some other interposing or intermeduating body.

4. It is required, that there should be a full space betwixt the cause and the effect, that is, *spatium continuum & conjunctum*, that so naturall things may *in se mutuò agere*, and thus obtain their perfection.

5. That an effect may be naturall it is required, that



that

Of pretious stones or Gemms in generall.

that the medium or mean which is betwixt the cause and the subject, be aptly and fitly disposed to receive the vertue of the agent or efficient, for else it is impossible, notwithstanding the concurrency of all other things together, that any naturall effects should uniuersally follow.

This for the present as concerning the nature and vertues of gemms and pretious stones in generall. It followeth that we should make progresse in our inquiries and discoveries of every gemme and pretious stone in particular.

Of the division of Gemms.

IN the former treatise we have spoken concerning the causes, natures, and effects of gemms in generall. In what followeth, we shall according to Anselmus Boetius shew how they are divided, and how particularly distinguished according to their severall *species*. The division which he maketh of gemms or stones is this.

Division of stones or gemms.

Stones or gemms are either 1. Small. or, 2. Great.

Small ones are either 1. Rare. or, 2. Common.

The Rare and excellent ones are either 1. Hard. or, 2. Soft.

1. The small hard ones are either 1. Fair. or, 2. of an evil Colour.

The Fair ones, are either 1. wholly shaddowed as the *Turky stone*, and the *Chameus*. or, 2. partly shaddowed, as the *Sardonyx*, the *Astroites*, the *Leucosapphirus*, and the *Opalus*.

Again, the Fair ones are transparent either 1. with Colour. or, 2. without Colour.

1. The Fair ones transparent with Colour are the *Facinth*, *Beryll*, *Ruby*, *Prassius*, *Rubicell*, *Chryso-prassus*, *Spinell*, *Granat*, *Amandine*, *Chrysolite*, *Ballasse*, *Carbuncle*, *Saphire*, *Emerauld*, *Gemma Solis*, *Almandine*.

2. Fair ones transparent without Colour are *Diamonds*.

Of the division of Gems.

The small hard stones, which are rare and precious though of an evil Colour, are these, the *Pantarbe*, *Brontia*, *Umbria*, *Dracontia*, *Ætite*, *Lapis palm-bellus*, *Chelidonium*, and the *Snake-stone*, or *Egge*.

Secondly, The precious, small, rare and soft stones are either 1. Fair. or, 2. of an evil Colour.

1. Fair, first in Colour, as the *Pearl*, *Bezoar*, *Molochite*.

2. In Figure, as the *Oculus Cati*, *Gloßopetra*, *Umbilicus Maritimus*, *Lapis Judaicus* and the *Trochite*.

Secondly, The small, rare and soft stones of an evil Colour, are the *Morochibus*, and the *Lapis Caymans*, *Enorchis*, *Lapis Ceyar*, *Lapis Manualis*, *Lapis Renalis*, *Lapis Porcinus*, *Lapis Anguinum*, *Enhydros*, *Gallimus*, *Lapis Malacensis*, *Lapis Manatus*, *Lapis Hystericus*, *Lapis Tuberonum*, *Lapis Bugolda*, and the *Toad-stone*.

The small common stones are either 1. Hard. or, 2. Soft.

Hard first, as the *Bristol diamonds*, or the *Pseudo-diamond* of Hungary.

Or Soft secondly, as the *Lapis fellis*, *Oculi Cancri*, *Lapis Spongiae*, *Lapis Limacis*, *Lapis Carpionum*, and *Lapis Percæ*.

The Great stones are likewise 1. either Rare, Hard, Fair and shadowed. or, 2. Rare, Hard, Fair and transparent.

1. Of the first kind are the *Porphyrite*, *Heliotrope*, *Smaragdite*, *Lapis Lazuli*, *Agate*, *Corall*, *Ophyte*, *Cornu Ammonis*.

2. Of the other kind are the *Amethyst*, *Topaz*, and the

the *Smaragdo-prasius*, which do all partake of tincture or colour; and the *Cryſtall*, and the *Bohemian Diamond*, which are diaphanous without colour.

Again, the rare hard ſtones are, 1. Some of them of an evil colour, as the *Steatite*, *Eneoft*, *Stalagmite*, *Onyx*, *Ceraunia*, *Baſaltes*, *Smiris*, *Daëtylus Ideus*, *Oſſifragus*, *Stalactite*, *Lydius*, *Lapis Nephriticus*, *Bloudſtone*, *Geodes*, *Loadſtone*, *Hepheſtite*, *Hysterapetra*.

2. Again, of the great and rare ſtones, ſome are 1. ſoft, and fair (1. either in colour, 2. or figure,) or 2. ſoft and evil coloured.

In colour, firſt, as the *Specularis*, *Alabaſter*, *Amber*, *Lapis Armenus*.

In figure, ſecondly, as *Amites*, and *Stellaris*.

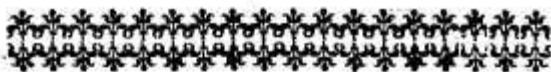
Thoſe that are ſoft and evil coloured, are the *Aſius*, *Samius*, *Ageratus*, *Melitites*, *Gagate*, *Porus*, *Schyſtus*, *Thyites*, *Amiantus*, *Galaëctites*, *Magargenteus*, *Hematite*, *Phrygius*, *Calamita Alba*, *Fungifer*.

Again, there are common great ſtones which are 1. either hard, fair, and beautifull; or, 2. hard, and evil coloured.

Firſt, the hard, fair, and beautifull ſtones of magnitude are the *Marble*. Secondly, common, hard, evil coloured ſtones, are the *Whetſtone*, *Pyrite*, the common ſtone, the *Flint*.

Soft ſtones of magnitude are *Gypſum*, *Pumice*, *Lythanthrax*, *Talcum*, *Sciſſilis*.

This is the generall diviſion of gemms and ſtones, according to Boëtius. Now of ſtones in particular, and of their generall ſpecies.



The first part of the Lapidarie.
Of Gemms in particular.

Of diaphanous and whole transparent Gemms.

CHAP. I.

Of the Diamond.

*Description
 of the stone.*



The true *Diamond* is a hard, diaphanous, perfectly transparent stone, which doth sparkle forth its glorie much like the twinkling of a glorious starre.

The true *Diamond* is the hardest of all other stones, without colour, like unto pure water transparent: and if it have any yellownesse or blacknesse, it is a fault in it. This property it hath, that it will snatch colour and apply it and unite it to it self; and thus will it cast forth at a great distance its lively shining rayes, so that no other jewell can sparkle as it will. By this excellent emission of its rayes or beams, or by this generous sparkling forth of its glory, do the most judicious Jewellers distinguish the true *Diamond*, from those of bastard kinds.

Of its tincture or foyl.

The tincture, foyl, or colour for a true *Diamond* is thus made: R. pure mastick and a small quan-

quantitie of ivory, burnt black, and finely powdred; mix it according to art, then distend a small portion of it, and fitly dispose of it for your soyl or tincture.

Of the adulteration of the Diamond.

A True *Diamond* may be adulterated or counterfeited with a *Saphire*, or with an orientall *Ame-thyist*, or with a *Topaze*, or with a *Chrysolite*, and by all stones that are hard and transparent, and which may be deprived of colour. The colour of those gemms which are fit for this use, may by the heat of fire be thus taken away: *R. calx viva*, and the filings of steel; bury the stone in them, or in either of them, then overwhelm them wth a fire at some distance frō them, that the stone by degrees may grow hot; then increase the fire, and the colour will vanish. Jewellers and judicious artists well know in what space of time, by the continuance of this great heat, any such excellent gemms may be deprived of all their colour; which colour of the gemm, so soon as they do conceive it is vanisht by the power of the heat, then do they extinguish the fire by degrees, till there be no more heat left. And if by this first operation it be not perfectly deprived of all its colour, then the same work must again be begun; and carried on as before by severall degrees of heat: and if need be, it may be iterated: ever observing this, that as it must be heated by a graduall increase of the fire, so likewise by a graduall decrease of the heat the fire must be extinguisht: for the over-sudden heating or *over-sudden cooling* of the stone may cause a crack

Caution.

in

in it, and so rob the stone of the glory of its beautie and value, and the artist of his hopes by frustrating him of his endeavours.

Anselmus Boetius saith, that he saw a *Topaz* in this manner changed, (which is better then an other stone for this purpose because of its hardnesse) and it was in weight seven *Ceratia*, that is, twenty eight grains, which was valued at three hundred Florens, or Crowns.

Of the names of it.

In Hebrew יהלום *jahalom*, that is, *Adamas*: as Exod. 28. 18. it is the third stone of the second row of stones that was set in the Ephod. *Adamas* cometh of the verb *δραμαζω*, that is, *domo*, to tame; hence by the exposition of S. Hierome *adamas* doth signifie *indomitum*. And well may it so do, for neither fire nor iron can destroy its glory, or lessen its vertue. In Arabick it is called *Hagar subedbig*, and *Almaz*. In Dutch *ein Dhemuth*, *Demanth*, and *Adamant-stein*, and *Adamant*. In Italian and Spanish *Diamante*. In French *Diamant*. Of the natives where it is found *Iraa*. In the Malayan language it is called *itam*.

The kinds of it.

There are seven kinds of *Diamonds*.

1. An Indian one, which hath some affinitie with Crystall. This is turbinated into an edge with a smoothnesse of six sides, and it is sometimes found in the bignesse of a silberd; but this is not found growing in gold.

2. An

2. An Arabian one: this also doth not grow in gold: this is somewhat lesse, but like unto the former. Neither of these (saith Pliny) can be hurt by anvile and hammer, because of their irresistibility, for being smote they flie away unhurt. Plin. cap. 4. lib. ult.

3. A Chencrean one, which is found in the big-
ness of Millet seed.

4. A Macedonian one, which is found in gold like unto a Cucumer seed.

5. A Cyprian one, enclining to an aerie colour, very efficacious in Physick.

6. The sixth is called *Sideritis*, from the splendor of steel: it is of greater weight then the rest, but unlike in nature: This may be broken like the Cyprian one, and cut with an other *Diamond*. Of these we may reade in Plinie. Plin. lib. 37. cap. 4.

7. The seventh kind are either round or six-cornered. Of these some are harder then others, and some softer. These have their names from the places in which they are found: hence some of them are called Bohemian ones, some Armenian ones, some English, Scottish, and Hungarian *Diamonds*. Of these kinds the cornered ones are the softest, and not much better then Crystall: The round ones are like unto flints, but farre harder, and these have the splendour of the orientall ones: But these, as saith Boetius, can no wise be taken for the true ones, because they do not receive into themselves the tincture. To these we may referre the Cyprian ones, and Macedonian ones.

The orientall ones are distinguished from the place where they are found.

Of the places where they are found.

The places in which they are found are these.

In *Bisnager* a Province of the East *Indies* there are two or three rocks which bring forth *Diamonds*, sometimes exceeding the weight of two drachmes a scruple and eight grains.

In *Decan* a Province of *India* there is another rock which is called *The old Rock*: the *Diamonds* which are here found are called *Diamonds of the old Rock*: they are small, but very good, naturally polish'd, and of great price.

In *Tanian* in *Malacca* there is a rock which bringeth forth *Diamonds*, which are also called *Diamonds of the old Rock*: these are small, but of great esteem, and more ponderous then the others.

Monardus writeth, that he saw *Diamonds* in *Bisnager* that weigh'd 140 *ceratia*, and every *ceratium* is foure grains. The greater ones are found in the lower part of the rock, the smaller ones in the upper part of the rock: when the upper part of the mine is exhausted, after two years, new *Diamonds* are brought forth and perfected, so saith Boetius. These are never found in *Cryſtall*, as *Plinie* thought.

Of the properties, qualities, and faculties
of the *Diamond*.

A True *Diamond* is so farre from being hurt by being in the fire some dayes, that it will grow better for it, and the more fair. *Plinie* saith, that a true *Diamond* cannot be hurt by the force of hammer
and

and anvil: other *Diamonds* experience teacheth us may be brought into broken pieces, and into a fine impalpable powder, by the frequent strokes of an hammer.

The Ancients have had a very high esteem of this stone, insomuch as they have thought it to be endued with divine vertues; and such, as that if it were but worn included in a ring, or carried about a body neare his heart, it could asswage the fury of his enemies, and expell vain fears from his heart, preserve from swooning, drive away the vanity of dreams, and the terrours of the night, and frustrate all the malignant contagious power of poysons. It is reported of it that it is endued with such a faculty, as that if it be in place with a *Load-stone*, it bindeth up all its power, and hindereth all its attractive vertue.

If a true *Diamond* be put upon the head of a woman without her knowledge, it will make her in her sleep, if she be faithfull to her husband, to cast her self into his embraces; but if she be an adulteresse, to turn away from him. It hath been by the Ancients esteemed powerfull for the driving away of *Lemures*, *Incubos*, and *Succubos*; and for the hindring of contentions, and to beget in men courage, magnanimitie, and stout-heartednesse, as appeareth by Serapius, and by Evaces in his Lapidary. Rulandus, Cardanus, Garcias have all written very much concerning these vertues, to which Authours I referre the courteous Readers for their further satisfaction, till better opportunities shall give me leave to make a further discovery of what may be spoken concerning it.

Andreas Bacon,
c. 15. de
Nat. gemmar.

Serapius, l.
agrc. c. bagar.
Subcl. 161g.

Of the dignities and value of it.

Exod. 28. 18.

IT is of esteem for that it hath been of sacred use; what was the sacred use of it may be read in the book of Exodus, where we find it to be one of those excellent stones which was to have a place in one of those foure rows of ouches of gold set in their severall orders upon the breast-plate of Judgement, upon the Ephod of the High-priest. It is of esteem for its own irresistible hardnesse, and for the puritie of its perfect glory, in which it doth excell all other gemms of price, and stones of worth.

A well polisht *Diamond* without fault, of the weight of a pepper-corn, is worth ten Florens or Crowns, Boetius pag. 63. If a pointed *Diamond* be fitly fastened in any convenient thing that a man may hold it withall, he may not onely cut glasse with it, but also penetrate arms with it, as saith the same Authour.

Statius lib. 1.
Hesiod. l. 1.
Horat. 1. 6.
3. carm.

There is a proverbiall use of it, which is taken from its hardnesse, and applyed either to animate or inanimate things: of this use we may read in Statius, Hesiod, and Horace. A main use of it there is in the way of Symboles and Emblems: for by it is figured innocencie, constancie, and fortitude.

The forms into which most commonly it is cut, is a Tablet, which consisteth of one plain upper Table, and foure latterall Tables, two of which are wont to be longer then the other two, that they may make the just proportion of the upper Table; and such a Tablet as this, Boetius saith, is of form most perfect: a *Diamond* thus cut weighing one *Ceratium*

or

or foure grains, is worth fiftie Ducats or Crowns.
Boetius pag. 64.

They are also cut in Pyramidall forms, with Quadrangles, but these are of lesse value then the Tablets. The smallest of these best *Diamonds* are valued at very high prices, the biggest are of infinite value.

Cardanus in his book *de subtilitatibus*, maketh mention of a *Diamond* that is at Antwerp, which wanteth one scruple of the weight of an ounce, and is valued at the worth of an hundred and fifty thousand Crowns.

*Cardan. de
subtil. lib. 7.
pag. 345.*

The shivers and dust of a good, perfect, true *Diamond* are of admirable vertue, and of very great worth, esteem and value: for by their hardnesse they do divide all gemms: in the engravings of all other gemms they are not onely profitable but necessarie; for what-ever pretious stones have an excellent hardnesse joyned with their glorie, puritie, and beautie, they will want the help of these, or they will not easily be either cut, graven, or polisht.

C H A P. II.

Of the Carbuncle or Ruby.

Description
of the stone.

THe *Carbuncle* is a pretious stone or gemme, which for its innate glory containeth within it self the resemblance of a flame of fire.

The true *Carbuncle* or *Ruby* is a transparent Jewell of the colour of pure vermilion or crimson; by how much the more fiery it doth appear in its extremity, so much the better it is; if it have any yellowness in it, it is of the kinds of *Granates*, or *Hya-cinths*: from its excellent flame it is distinguished from other gemms which have like representations and resemblances; a *Carbuncle* is nothing else but a great *Rubine*, and a great *Rubine* is thought worthy of the name of a *Carbuncle*; if a *Rubine* be found so bigge as that it may weigh twenty *Ceratia*, that is a drachme and a scruple, then may it worthily be called by the name of a *Carbuncle*. Ludovicus Vartomannus a Romane, reporteth that the king of Pege a city in India, had a *Carbuncle* of so great a magnitude and splendour, that by the clear light of it, he might in a dark place be seen, even as if the room or place had been illustrated by the sunne beams.

Of its tincture or soyl.

THis though it be a very glorious stone and of excellent beauty, yet a soyl is used to it, as to all other gemms of transparency & perspicuity. The soyl is either made of tinctured Mastick, or of a dyed

dyed vitreous substance, or else a red gold foyle is used about it.

Of its Adulteration.

IT may be adulterated by a *Rubine* of a very dilute redness, by putting a red gold foyle tincture, or colour under it, or by putting some splendent glasse dyed with a red colour under it; And thus without diligent caution it may be taken for a true jewell, and the rather because all are helpt with a foyle. Another way of its adulteration is by a white *Saphire*, or a *Crystall*, or a *Topaz*, or an ordinary *Diamond*, with a red gold foyle placed under it, in its enclosing, either in ouch or ring. Another way they have of adulterating of it, and that is, by glewing two fair *Crystals* together with a little mastick tinctured with a red or crimson colour: In this manner I have seen two pieces of *Crystall* so glewed together, as that they being once set with a foyle, they could hardly be discerned from a true *Ruby*.

The adulteration of this gemm may be thus discovered, First by the want of sparkling and sending forth of lively rayes. Then by bringing the gemm to the triall of the file. A true *Rubie* will endure the file; but a factitious stone, or a soft counterfeited adulterated stone will not. Another way of discerning the falshood will be this: take the jewell you suspect, and direct your eye from the verge or margin of its inclosure, through the gemm unto the opposite side of its enclosure; and if it consist of two-parts with a tinctured foyle betwixt, you will
easily

easily perceive the upper part to be void of colour, from whence you may gather that it doth receive its glory from the soyl. Such Artificiall angles and corners will jewellers cut and excavate in the bottome of soft transparent stones (as I have seen) that by the manifold reflection of these lower *superficies*, into every part of the uppermost *superficies* of the jewell, a skilfull jeweller shall hardly perceive their craft.

There is an adulteration of the *Ruby* with boiled orpement, but these are fit for nothing else but statues, of this mention is made in *Baptista Porta* in his *Magia. lib. de gem.*

Of its Names.

IN Hebrew בִּרְקִיָּה *Barakath*, that is, *Carbunculus*, vel *Pyropus*, the Hebrew word cometh of the verb בָּרַךְ *barak*, which signifieth *fulgurare*, and indeed this stone doth cast forth the glory of its splendour and its sparklings like lightning. Of the Greeks it is called ἀσβεστος from the splendour which it hath in its self like unto a fire-coal: hence also in Latine it is called *Carbunculus*: it is also called *Pyropus*, from the Greek word πῦρ which signifieth fire, and *Apyrausta*, quod ignem sentire non videatur. In Latine, *Carbunculus*. In Germane, *ein Rubyn*. In Italian, *Un Rubino*, *Carbunculo*. In French, *escar boucle*. In Spanish, *el carvoncol piedra*. In English, *Carbuncle*.

The

The kinds of it.

Here are divers kinds of it as the *Rubine*, *Granat*, *Almandine*, *Red Hyacinth*, which all are to be ihewed in order as followeth.

Of the places wherein they are found.

The best of these are found in the Isleland called Zeilan, some small ones are found in *Coria*, *Calecut*, *Cambaya*, *Bispager*; there are excellent ones found in the River *Pegu*, the inhabitants there try them with their mouths and tongues: the colder and harder they are, the better they are; they grow in a certain stony *matrix* of a rosie colour, which if it be transparent is called *Balassium Rubinum*; for Hoc est, Palatinum. the most part it is found in the same mine where the *Saphire* is found: and according to the varietie of its nourishment it is found of a mixt colour.

Boetius saith that Rodolphus the second the Emperour had one of the bignesse of a small hens egg. Anstet. Dicitur. p. 72.

Of its properties.

This gemm which Aristotle calleth *Gnomonem*, *Sigillum*, and *Gemmarum regulam*, if it be great and very excellent, it doth emulate the bright shining of a flame of fire. It is of so great lustre and of so excellent a splendour, that S. Epiphanius saith of it that if it be worn, whatever garments it be covered withall it cannot be hid; this speaketh Andreas Baccius of S. Epiphanius in his book *de natura gemmarum*,

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rum,

rum, in the chapter of the *Carbuncle*. It is reported of it by Baccius, Boetius, and others, that if it be worn in an *Amulet*, or drunk, it is good against poison, and against the plague, and to drive away sadnesse, evil thoughts, terrible dreams, and evil spirits. It is also said of it, that it cheareth the mind, and keepeth the body in safety, and that if any danger be towards it, it will grow black and obscure, and that being past, return to its former colour again.

Of its value and dignity.

THIS is a gemme that in former times hath been esteemed of very great worth and value for its sacred use, in that it was commanded of God to be set in the ouches of the Breastplate of Judgment, as Exod. 28. 17. If it weigh two scruples which is the greatest, (for seldome any of the excellent ones are found of greater magnitude then a filberd) because of its gratefull colour with which it feedeth the sight; and because of those glorious beams which it seemeth to dart forth of it self, it is esteemed of as great worth as the most excellent *Diamond*. If it be found in the weight of four *Ceratia*, that is, of sixteen grains, it is of the same value with a *Diamond* which weigheth so many *Ceratia*.

The round ones which are of no exact form, are of the least value.

Those that are so big that they may be brought into Tablets, are of the greatest value; according to the value and worth of the best *Diamonds*, so are these to be esteemed and valued, if of equall proportion and weight.

CHAP.

CHAP. III.

Of the *Balassius* or *Palatius*.

THe *Balasse* or *Palatius* is a stone of a more dilute redness and fieryness than the *Carbuncle*: it is a stone which Martinus Rulandus saith flameth with a purple or rose colour. *Description of the stone.*

It is called *Balassius* or rather *Palatius*, because it is the matrix, domicile, or palace in which the *Carbuncle* or true *Ruby* is begotten, and resideth, it is of a much paler and a more dilute colour than the true *Ruby*, but of sufficient splendour, and very gratefull to the eye. It is often found in veins of *Sapphire*, by the ceruleous tincture of which, its redness is diluted and tempered. As concerning the manner of the formation, and nutrition, and augmentation of precious stones, Baccius thus speaketh. Every gemm, saith he, hath a matrix formed out of some stone or other, in which matrix, by the distilling of a certain nutritive juice it is nourished, even as is the infant *sanguine materno*, in the mothers womb; after this manner is the *Carbuncle* or *Rubine* generated, nourished, and augmented in the gemm *Palatius* as in its matrix.

Ælianus in lib. 8. de hist. animal. saith, that one of these stones was the gratefull reward that a stork presented Heraclis withall for curing her fractured thigh: The Stork flying in a dark night by a place where one of these stones lay flaming like a lamp, took it up and brought it to the woman Heraclis and cast it into her bosome as a token of the ac-

knowledge of that favour which it had received from her in the cure of its harm.

The foys of it.

THe foys that are used for the help of this, are such as must have respect to the diluted colour wherewith it is tinctured. The adulterations of this stone are like those of the *Ruby*.

The place.

THe place in which it is found is the same with those.

The kinds of it.

THere are divers kinds of it, some as perfect as *Rubies*, and there are some of them called *Rubies* of the old rock, but they have the colour of *Rubasses*. Some of these stones are enclining to the colour of a *Hyacinth*, and it is not yet determined whether they be *Spinels* or no: expert jewellers do not take them for *Spinels*, but for *Rubasses*, or *Rubicels*, or *Hyacinths*, yet some of them are so good, as that they are compared to *Spinels*, and sold for them.

Of its vertues and properties.

THe *Balassius* or *Pallatius*, is supposed to be of like vertue with the true *Rubie*, but of a more remisse power. Boetius reporteth of it, that it doth restrain fury, wrath, and lust. Rulandus reporteth this of it, as a wonderfull thing; that if the four corners of a house, arbor, or vineyard be covered with this stone, it will preserve it from lightning, tempests, and worms.

Of its worth and value.

IT is of much lesse value then the *Ruby*. Linshortanus saith, that one of the weight of one *Ceratium*, or of four grains, is worth ten ducats.

A *Spinel* of the old rock, of the weight of one *Ceratium*, or four grains, cut into a tablet, is worth half so much as a *Diamond* of the same weight: if in its own glory and rosie lustre it be found, and free from blemishes.

CHAP. IV.

Of the Rubaces and Rubacells.

IT is doubted whether the *Rubaces* and *Rubacells* belong to the *Spinels* or *Hyacinths*, for they seem to have a mixt colour of both. The *Bohemian Granats* are very like, and they are tried by the fire whether they be *Granats* or no. They will endure the fire without any losse of colour, and with little or no harm; but the other will loose their colour, and so change, that you shall not know whether they be *Granats* or no, and for the most part they have in their extremities a yellowish colour with them.

Their value.

If they be without any fault, they are not above half so much in value as the *Balasses*.

CHAP. V.

Of Granats.

THe *Granats* are kinds of *Carbuncles*: It is a pellucide, red, pretious gemm, like unto the flowers of *Pomegranats*, of a rosie colour, somewhat darker and more obscure then a *Carbuncle*. Boetius saith that it looketh like a flame of fire, or like unto pure vermilion.

Its tincture or foyl.

The foyls for the help of these, by which they are made quick, vivid, and lively, are small reddish
bractea,

bractea, or silver foyle tinctured with a crimson, which being substrated, and fitly and aptly placed in the inclosure under the gemme, stirre up in it a certain chearfull discovery of lustre.

Of its adulteration.

Impostours have many frauds and deceits for the adulterating of this gemme; which frauds and deceits in the adulteration, together with the great difference of its severall *species*, make this gemme, saith Andreas Baccius, of greater difficultie then any other to be known. So will impostours adulterate this gemme with their *bractea* and crimson foyle, as that it is not an easie thing to discover a true *Granate* from their spurious *Rubine*. They have a way also of calcining *Orpment* with a slow fire in any convenient vessel, or a vessel called *Carafetta*, till such time as the vessel seemeth to be covered with certain red drops, like *Rubies*.

Of its names.

It is called in Hebrew רִבִּינ , *Adem*, that is, *Rubinus*, as Ezek. 28. 13. the Hebrew word רִבִּי *Puk*, is also taken sometimes for the *Rubine*: but that which for the most part Interpreters do interpret it to be, is *Stibium*, or *gemma Antimonii*, which indeed in colour hath some resemblance with the *Rubine*. In Latine it is called *Granatus*, *Rubinus*, and *Granatus*. In Dutch *Granatin*, and *ein Granat*. In English a *Granate* or *Rubine*. In Italian *Rubino de Rocha*, and *Granato*.

Of

Of it kinds.

There are three kinds of it; the best of which is tintured with the excellent rednes of a *Pomegranate* flower. The second hath a rednesse enclining to the colour of a *Facinth*. The third kind is red, tending to a violet colour, which by the Italians is esteemed the most perfect of all others, and hence they call it *Rubinum de Rocha*.

Plinius history concerning the Ethiopians ways of recovering the glory of these stones.

Plinie relateth of the Ethiopians that they have a way of quickning obscure and dull *Rubines*, so as that they will make them to discover their splendour and nitour for fourteen moneths together, even like a flaming coal; and that is by macerating of them for fourteen dayes in vineger: But by this means, though their glory be increas'd for a time, they are made softer, and more subject to a brittle and fragile condition.

The places where they are found.

They are brought from *India*, *Calecut*, *Cananor*, *Cambaia*, from *Balaguar*, and from *Ethiopia*, and *Behemia*.

Of its properties.

S. Hieroms opinion concerning this is, that it doth illuminate the heart to contemplate true and divine things. Its declining from glory to obscuritie, doth prognosticate some misfortune; as appeareth by this which Andreas Baccius speaketh of a *Rubine* of his enclosed in a gold ring. On the fifth of December 1600, he was travelling with his wife Catharina Adelmania

Andr. Baccius, cap. 6. de nat. Gem.

Historic.

delmania to *Studgard*, and in his travell he observed his *Rubine* to change its glory into obscuritie, whereupon he told his wife, and prognosticated that evil thereupon would ensue either to himself, or her, which accordingly did: for not many dayes after his wife was taken with a mortall disease, and died: after which he saith his *Rubine* of its own accord did again recover its former lustre, glory, beauty, and splendour.

The value, dignitie, and worth of them.

The *Bohemian* ones are worth twenty shillings a piece: and if they be found bigger then ordinary, the price of them is increas'd.

It is reported of Rodolphus the Emperour, that he had one of the bignesse of a silberd.

The best orientall ones of the weight of foure grains, are worth two crowns; and by how many times soever they are found to be double in weight, so many times double will their value and worth amount, and raise their price; as if they weigh eight grains, they are worth foure crowns, and so proportionably according to their greater weight, great will be the increase of their value and worth, but with this proviso, that their colour for their glory, be alwayes the perfect colour of a *Rubine*: for it is the pure excellencie of its colour and tincture that determineth its price.

The *Rubine de la' Rocha*, is of the same price with the *Spinels*.

CHAP. VI.

Of the *Almandine*.Description
of the stone.

THe *Almandine* is betwixt a *Granate* and a *Rubine*: so that the *Rubines* seem to be tintured with a more black colour, they are of lesse value then *Rubines*, and of lesse esteem, and of lesse vertues. In times past they were called *Alabandicks*.

They are of the value of orientall *Granats*.

These are those stones that Pliny calleth *Troezemii*. They are red, with divers colours severed with white spots. This jewell is known to very few, and therefore scarce of any price.

CHAP. VII.

Of the *Hyacinth*.Description
of the stone.

THe *Facinth* or *Hyacinth* is a stone (as saith Boetius and Rulandus) which is red, with a certain yellowesse, or *rufescit in auro*, that is, it is red in a yellow. It doth resemble a flame of fire, and may be referred to the kinds of *Carbuncles*. This appeareth to be a true discovery of the perfect *Facinth*, by this testimonie of holy Writ, which describing the breast-plates of the Locusts or horsemen which destroyed the third part of men, doth in plain terms say, that their breast-plates were of fire, of *Facinth*, of brimstone, which in colour are all one and the same. Rev. 9. 17. Plinie saith that these are seldome found bigger then a pease. Boetius saith that he saw one a great deal bigger, of a very excellent lustre.

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Wurtzung in his second table of his generall practise, saith, that the *Facinth* is a pretious stone of a light violet colour, and this he saith from Plinie, who maketh the *Facinth* to be like the *Amethyst*.

Of its soyl or tincture.

The soyl or tincture of this may be either of leaf gold, or silver fitly tinctured, and aptly placed to commend its lustre.

Of its adulteration.

Impostours do adulterate it by a kind of glasse made of lead; but this will be easily known upon triall with a true *Facinth*: for it will be softer and lighter then the true jewel is. But of so low a price are ordinary *Facinths*, that very few will attempt the adulterating of this jewel.

Of its names.

It is called in Hebrew *הבלר* *Techeleth*, as Exod. 26. 36. it doth appeare, where the hangings for the doore of the tent, are commanded to be made of the colour of a *Hyacinth*, as there it doth appeare by the translation of the Hebrew word *Techeleth*, *Hyacinthinum*. In Greek this stone is called *ιακινθισ*, in Latine *Hyacinthus*, in English both *Hyacinth* and *Facinth*, in Dutch *ein Hyacinth*, and *ein brennender Facinth*; in French *Facinth la' belle*.

Of its kinds.

Albertus Magnus maketh two kinds of it, one
L 2 kind

kind which doth *albescere in flavo*, or which is white in a yellow; the other kind which doth *aqueescere in rubeo*, or appeareth waterish in a red.

Boetius speaketh of these kinds of it :

1. There are some that flame like fire, or are like in colour to crimson, or to naturall Vermilion, these the French jewellers call *Facinôte la' belle*. These they esteem the best, and they may be referred to the kinds of *Carbuncles*.

2. Such as are like to *Stibium*, with a yellow red colour.

3. Others which are like unto *Amber*, so that they can hardly be distinguish'd from it, but by their hardnesse. Such an one Anselmus Boetius saith he had. These are of no great value, by reason of the atomes which they do contain, and the multiplicite of small bodies which are in them, which do hinder their transparencie and diaphanitie. One of these Cardanus saith he was wont to wear about him, to the intent of procuring sleep; to which purpose he saith it did seem somewhat to conferre, but not much. This hath been by some taken for the *Amber*: but Boetius saith, that he thinketh these rather to be the *Lyncurium* of the Ancients, then *Succinum* or *Amber*: for saith he, it is scarce credible that the Ancients should take *Succinum*, a thing so subject to the injuries of the fire, by reason of its softnesse, for a pretious stone.

4. There is a fourth kind which have no rednesse at all in them, which are like to white pellucid *Amber*, and these are of least value.

Those stones which Plinie called the *Hyacinth*, are in these dayes taken for kinds of *Amethysts*; as now
also

also the *Amethyst* of the Ancients is called a *Granate*.
 Martinus Rulandus maketh five kinds of it :

1. *Hyacinthus qui in auro rufescit.*
2. *Hyacinthus aurei coloris.*
3. *Hyacinthus ad Electri colorem declinans.*
4. *Hyacinthus scaber.* and
5. *Hyacinthus adulterinus, factitius, tincturâ adhibita.*

Of the places where they are found.

They are found in *Ethiopia, India, Arabia.* The *Arabs* make three kinds of it; as 1. *Rubri coloris.*
 2. *Citrini coloris.* 3. *Antimonii coloris.*

The worst of the kinds is found in the river *Isera*, which is upon the confines of *Silesia*, and *Bohemia.*

The best and most excellent ones are brought from *Cananor, Calecut, and Cambaia.*

Of its properties.

It is of a cold and dry nature, saith Renodeus, in *lib. de re Medica.* Cardanus in his book *de lapidibus pretiosis*, saith, that it is endued with a power and facultie of procuring sleep, of chearing the heart, of driving away plagues, of securing from thunder, and of increasing riches, honour, and wisdom, &c. being worn in a ring on the finger, or about the neck as an amulet.

The last kinds are of no great value.

Of the dignities and value.

The first, second, and third of these kinds of *Fa-*
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cinths are of great value, worth, and dignity; because they have been of sacred use, as appeareth by the twenty eighth chapter of Exodus, and because many things by them are discovered to us in holy writ, as appeareth in the book of the Revelations, chap. 9. and chap. 21.

The fourth kind, by reason of the many atomes and small bodies which they do contain, though they be big enough for sculpture and engraving, yet are of little value, and will scarce quit the cost of engraving; whereas the glory and lustre of the other, together with the sacred use which hath been made of them, make them of great value, high price, and much worth.

CHAP. VIII.

Of the Amethyst.

*Description
of the stone.*

THe *Amethyst* is a gemm of a peach-bloom colour: which pleasing delightfull colour, proceedeth from a mixture of red and blew, which is a dilute dark colour. Pliny sporting in his naturall History about this stone, saith that it doth draw nigh to the colour of wine, but it durst not tast it, that is, it taketh but very little of it: for before it doth thoroughly relish it, its glory doth end in a very delightfull pleasing sparkling violet colour: the most excellent of them have in them a glorious fiery brightnesse, which doth most excellently and pleasingly dart its self forth (as I have observed in one which I was once master of) through the transparent cloud of a skie colour; from the mixture
of

of its redness, brightness, or fiery splendour with this skie colour, ariseth all the glorious delight of its pleasing tincture.

Of its soyl or tincture.

Its soyl is a soyl of mastick, or a silver soyl dilutely tinctured, and then fitly substrate under the gemm, in either ouch or ring.

Of its adulteration.

The excellent *Amethysts* are of very high value, and of great worth and dignity, comparable to orientall *Diamonds* of the same proportion, weight, or bignesse, and therefore no doubt need to be made of it, but that impostours will very much study and labour to counterfeit and adulterate this stone. Some will adulterate it with a violet colour mixt with mastick, or with a soyl thus tinctured, & placed betwixt two Crystals, or betwixt two of any other transparent, perspicuous, diaphanous stones.

Of its names.

In Hebrew אַבְרָמֶה *Ablamah*, as Exod. 28. 19. It is called *Ablamah*, of אַבְרָמֶה *somniare*, because it is said *inducere somnia gestantibus*, as Rabbi Aben Ezra doth write of it: and in the Caldean tongue *Enegla*. In Greek εὐφροσύνη, *quasi ebrietatem arceret*, as if it had a power and faculty of driving away drunkenness. In Latine, it is called *Amethystus*. In English, *Amethyst*. In Dutch, *ein Amethyst*. Divers other names it hath from the places in which it is found.

of

Of its kinds.

There are divers kinds of it: the best of which, are those that have a rosie colour shining in a purple. These are glorious as a *Carbuncle*, in respect of their beauty, and of their excellent hardnesse, and because they being thus hard, may be converted into a *Diamond* of the greatest value, and as truly worth esteem, and high price, being of equall bignesse, as the best orientall *Diamond* in the whole world.

Anselmus Boetius saith, that he saw one of these orientall *Amethysts* so converted into an excellent *Diamond*, as that it being set in a gold ring it was comparable without any difference, to a *Diamond* which he saw that was sold for 18000 *Aureos* or crowns: it being of the same bignesse and form, and after the same manner enclosed in a gold ring. The waters (which it hath that are very like to those of the *Diamond*) as the jewellers call them, which it doth cast forth of it self in pleasing rayes and glorious sparkles, maketh this stone to be of so great value, and of so incomparable esteem and worth, as is the best orientall *Diamond* of the same bignesse, weight and form.

The way that jewellers have to whiten these excellent gems, is the same with that of the *Sapphire*.

1. The best kind is called an Indian one.
2. Kind the Indians call *Socodion*.
3. Kind which is more dilute, is called *Sapinor* and *Paranitor*.
4. Kind is of the colour of wine.
5. Kind have some vicinity with *Cryball*, some of

of which are called *Pederatas*, others *Anterotas*.

Martinus Rulandus reckoneth six kinds of *Amet-hyfts*.

1. One kind which is found in the mine of *Unde-hen-stein*, and is called in Dutch, *ein Misnifcher Amethyft, der in bergen bricht*.

2. A *Misnian*, one which is found in the river of *Misnia* neare *Stolpen*, and in the river *Trebifa* neare *Mifen*.

3. Bohemian ones, which are found in the mountains of Bohemia.

4. A fourth kind which descendeth to the form of *Cryftall*.

5. A kind which is distinguished with *Cryftall* lines.

6. And a sixth kind of a *Quadrangular* and *Sexangular* form.

Of the places where it is found.

It is found in *India*, *Arabia*, *Armenia*, *Aethiopia*, in *Galatia*, *Thaso*, and *Cyprus*. The orientall ones are the best of all others.

There are alfo *Amethyfts* found in *Germany*, in *Bohemia*, in *Misnia*, alfo in *Wolkenstein*, and *Hohenstein* very fair ones, but foft like *Cryftall*; and therefore not of fo great worth, value, and esteem as the others which are orientall ones.

Of its properties.

It is reported to be good to drive away ebricty, which the etymologic of the *Greek* word *αιθουρα* doth alfo seem to import. Aristotle faith of it, that

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it being applyed to the navell, or worn about the navell, it will hinder the ascension of vapours: the reason of it he giveth to be this, viz. That it draweth the vapours to it self and doth then discusse them.

Andreas Baccius in his eleventh chapter *de Natura gemmarum* saith, that it sharpeneth the wit, and diminisheth sleep; and that it is also thought good for the resisting of poyson. With those that have a vicinity with *Crystall*, the Turkish women are wont to adorn themselves, they being first polished at Venice, and brought thence to them to Constantinople.

Of its dignity, worth and value.

It is of great esteem and dignity. First, because it hath been of sacred use; This was one of the stones of the breast-plate of Judgement, as appeareth Exod. chap. 28.

Secondly, as in the book of the Revelations, some of the glory of the foundations of the walls of the new Jerusalem is discovered to us by it, Rev. 21.

Thirdly, as it is of excellent glory and beauty in it self, and so very delightfull to the eye.

The orientall ones, if they be hard without clouds and blemishes, though they weigh but four grains a peice, they are worth many pounds a peice; and as oft as these are double in weight, so oft is their price to be doubled: others are not so valuable.

The best are worth as much as the best orientall *Diamond* of the same weight.

CHAP. IX.

Of the Margarites and Unions,
or Pearl.

THe *Margarite* or *Union* is nothing else but the excellent geniture of a shell-fish called *Margaritifer*, congealed into a very fair, transparent, diaphanous, beautifull stone, which is the *partus* and birth of this fish. *Description of the stone*

As concerning their originall and conception, there is some difference amongst Authours, as betwixt Pliny and Anselmus Boetius, and betwixt them and Cardanus.

Pliny saith that they are conceived in oysters of a certain maritime dew which these fish (and so likewise Scallops) do at time of the yeare much thirst after: and according as the heavens are more cloudy or clear in the time of their taking in of this dew, so they are generated, more fair, or more obscure, as may be read in his book, where he speaketh of the nature of those Pearls which are called *Unions*, and of the shell-fish in which they are found, as *lib. 9. c. 28*. But this opinion of Pliny concerning their conception, is by Anselmus Boetius thought not to be consentaneous to the truth, for saith he, I have taken out of these shell-fish many *Margarites*, and they are generated in the body of the creature, of the same humour of which the shell is formed, which viscuous humour is expelled sometimes, not alwayes, for the fabrick of another shell: for when ever this little creature is sick or ill, and hath not

strength enough to belch up, or to expell this humour which sticketh in its body, it becometh the rudiments or beginnings of *Margarites*; to which, new humour being often added and assimilated into the nature of *Margarites*, of this new addition of humour, by concretion and congelation, is begotten a new film or skinne to the first rudiments of *Margarites*, of which at length by further additions of humour, is generated an *Union* or *Pearl*: even as stones are generated in the gall, or bladder of a man, and after the same manner that the Bezar stone is generated in the Indian Goat.

Cardanus *lib. 7. de lapidibus* saith, it is a fabulous thing that *Pearls* should be generated of the dew of heaven, seeing that the shell-fishes in which they are conceived, have their residence in the very bottome of the depths of the sea. That which is reported of them that they are soft in the waters, and grow hard like Corall as soon as they are taken out of it, is not true, saith Boetius *p. 84.*

Of its Adulteration.

Unions are so much the more esteemed, because they cannot easily be adulterated. There are factitious jewels made of double glasse which being set in gold, jewellers cannot discern from *Pearl*, except they take them out.

Some will adulterate them with the powder of the shell of the *Margarite*; and others with chalk covered over with leaves of silver, and then anointed with the white of an egg.

Some adulterate them with the powder of *Margarites*,

garites, mixt with the white of an egge, and dried, and then polished, but these will easily be discovered from the true by the weight and colour.

Of its Names.

The Union is in Hebrew called *שני* as Job 28. 28. and so the word *Gabish* is interpreted by Rabbi Levi Gerson. It is also taken for *Margarita*. *מרגריט* is by some taken for *Margarita*, but in the Proverbs it is interpreted by Junius, *Carbunculus*, as Proverbs 8. 11. If they be great, they are called *Unions*, because they are then found single in a shell. If they be small, they are called *Margarites*, many of which may be found in one shell together. In Greek, they are called *μαργαριτες*, *μαργαριτες* & *αίραυδης*. In Latine, the great Pearls are called *Uniones*, and *Margarita simpliciter*: Lucian calleth the Pearle, *Lapis Erythreus*: Arrianus, *Lapis Indicus*: Statius, *Erythreus lapillus*: Virgil, *bacca & bacca Conchea*: Pliny, *Unio*: Cicero, *Margarita*: S. Jerome, *Granum Maris Rubri*: and others call it *Perla*. The Germans call it *Perlin*. In Italian, *Perle*. In Arabick and Persian, *Lula*. The Indians call them *Moti*. In Malavar it is called *Mutu*. The Lusitanians call it *Aliofar*, which in Arabick soundeth as much as *de Lulfar*, that is, *portus in mare Persico*, where the most excellent Pearls are generated.

Of the kinds of Pearl.

The kinds of Pearl are no otherwise distinguished, but either first from their greatnesse, or littlenesse; that is, either as they are *Unions*, or as they are

Margarits, or seed *Pearl*: or secondly, as they are of excellent beauty, purity, and glory, or cloudy, reddish, and so lesse beautifull.

The Places.

The best are found in the Persian Gulf, betwixt the island of *Ormus* and the *Bassoram*, that is, about *Baroyn*, *Catyfa*, *Fulfa*, and *Camaron*, and are thence brought into the Island of *Ormus*. For the excellent beauty of these it may very well be said of them, that

*If all the world were but one ring,
Ormus should the Union bring.*

They are also found betwixt the Promontory of *Comorin* and the island of *Zeilan*, but these are not to be compared with the Persian ones. There are of them in the island of *Taprobane*, now called *Sumatra*. Betwixt the greater *Favan* and *India* there are very many. In *Palane* and *Caralco* a Promontory of *India*, there are many, but very small. In *Borneo* and *Ainon* here are great ones. The Occidentall ones are of a milkish colour, and of a silver-like splendour, and therefore not so commendable as the Orientall ones. It is reported by some, that by how much in the more deep seas the shell-fish reside, so much the lesse *Margarits* they do produce.

The Indians call the lighter, candid, or splendid shel-fish *Cheripo*, which is a kind of Oyster, of which they do make spoons and little cups. These little fishes do generate excellent *Margarites* or seed *Pearl*. There are others which they call *Chanquo*, the shells
of

of these are the mother of *Pearl*: These generate not so fair *pearl* as the other; because their shells are very smooth and fair within; they are used to adorn tables and other things with them. These are brought to *Bengala* for bracelets and other uses. The custome there was, to have the virgins arms adorned with bracelets of this kind, lest they should be corrupted.

They are also found in many places of *Europe*; As in *Scotland* and *Ireland* there have been very excellent ones found in *Scallops*, and common oysters; And in *Silesia*, *Frisia*, and *Bohemia*.

About the Promontory of *Comorin*, they are found of the weight of an hundred grains of wheat. And neare the Iland of *Borneo* in the weight of 160 corns of wheat, though not so fair as the other.

It is reported of *Cleopatra* Queen of *Egypt*, that she drank one dissolved at a supper, of which draught she boasted, that she had a more costly supper then ever *Antonius* had: The value of which draught must then amount (according to the computation of *Budeus*) to an hundred and fifty thousand *aureos*; Thus much did one supper of *Antonius* stand in, as *Plinie*, *lib. 9 c. 35.* and *Macrob. 3. Saturnal. c. 27.* The same *Budeus* doth commemorate an *Union* of the bignesse of a silberd, which was bought in *France* for three thousand *aureos*, and another for foure thousand.

Of its properties.

Solinus c. 56. Serap. lib. aggreg. c. Hager. Albaloz, say

say that these stones are cold and dry in the second degree; and that they are good against Syncofes, and cardiacall passions, that they do comfort the spirits, stop fluxes of bloud, cure Licneries, and Diarrheas, and that they are good for the sight: The same say Cardanus, Rulandus, and Baccius in their books *de Gemmis*.

Of their dignitie and value.

They are of great worth for their sacred use. S. Augustine in his explication of the Psalmes, speaking of the twelve stones mentioned in the book of the Revelations (Revel. 21. 21.) and of the gates of the New Jerusalem which were every one of one pearl, saith, that the twelve Apostles are signified by the twelve stones, and Christ, the spotlesse lambe, by the pearls.

Their own glory, beauty, and excellencie amount their worth: If they be of the weight of foure grains a piece, fair, and round, they are worth three crowns a piece, Boetius p. 88. So according to their bignesse, weight, roundnesse, and fairnesse, their price is raised, doubled, and trebled.

CHAP. X,

Of the Saphire.

THE Saphire is a transparent stone, of a sky-colour, pretious, and very delightfull to the eye. Description of the stone.
 The herb *Pilosella* or *Moufe-ear* in its flower, and the herb *Scorpides* in its flower, have some resemblance of its beauty. Cardanus maketh this stone to be the fifth in order of the most noble gemms, in his book *de subtilitatibus*; where he likewise saith, that it is a stone of an excellent hardnesse, of a ceruleous colour, and if not dilute or vitious, very pleasing to the eye; in so much as he saith, that nothing doth so much recreate the sight, as the *Smaragde* and the *Saphire*. Card. de lap. lib. 7.

Of its foyle or tincture.

The foyle for this is either a silver foyle tinctured for this purpose; or thin glasse or *ichthyocolla*, that is, yscing-glasse, brought into the form of a very thin foyle, and then being tinctured accordingly, it is placed in the enclosure under this gemme to set off its beauty.

Of its adulteration.

Impostours are wont to adulterate it with two *Bohemian Diamonds*, and a thin sky-coloured glasse betwixt them: and sometimes after this manner;

R. two drachms of *Zaphura*, or of *lapis Lazuli*, put it to a pound of the glassie substance which is

N

made

made of *Crystall* and *Flint-stones*; and they being molten together in a strong calcining pot, stirre them well with an iron hook; then take out a little of this molten substance, and see whether it doth not want more of the *Zaphura* or *lapidis Lazuli*; or whether there be any need to adde more of the glasse substance: If there be no need of either of them, but that it hath its perfect colour, then let it be set into a fornace of fire for six houres, and afterwards take forth the masse, and let it be well polisht; and if this lump be well ordered, this factitious gemme will hardly be distinguisht from a true *Saphire*. But these factitious gemms are usually full of little bubbles and atoms, by reason of the inequality of the fire working upon the matter; and thus may they be distinguisht from the true *Saphires*.

Of its names.

The *Saphire* is known almost to all nations by this one name *Sapphirus*. In Hebrew it is called יָסָפִיר, as Exod. 28. 18. and not onely in Hebrew, but in Greek Σαπφίρος, and in Latine it is called *Sapphirus*; in English *Saphire*; and in Germane *ein Saphire*; in Italian *Zaffiro*; in French *Sapphyr*; in Spanish *el Zafir* *pedrá pretiosa*; in Indian language and Arabick *Nilaa*; and from the place where it groweth *Podia*. *Marbodeus* doth call it *Syrrites*.

Of its kinds.

There are foure kinds of *Saphires* spoken of by some

some writers. The first of which is the best. Of all others of the kinds this doth onely truly deserve the name of a *Saphire* to distinguish this from all other *Saphires* it is called *Sapphirus caruleus*: Dionysius Afer calleth it for this purpose *Cyaneus Sapphirus*, as saith Wurtzung, in 2, tab. of his generall practise of Physick. The best *Saphire* Andreas Baccius (*lib. de nat. gem. c. 7.*) doth thus describe; If it have an excellent tenour in it self, that is, if it be neither too obtuse or dull, by reason of the grossnesse of that *Succus*, juyce, or nourishment of which it was generated, nor too much dejected with a propense perspicuitie, but doth pleasantly discover from it self, by reason of the mixture of light and purple, the delightfull flower of a sky-colour. This is the excellent *Saphire*, which in the order of noble gemms Cardanus doth rank in the fifth place.

2. The second kind declineth from the blue to a green, and is in Greek called *Prasitis*, and *Sapphirus Prasitis*, and *Sapphirus viridis*, by this name it is known to the Druggists.

Wurtz. tab. 2:
gener. pract.

3. The third kind declineth from the blue to the yellow, and is called in Greek *Chrysis*, and *Sapphirus Chrysis*. The Simplicists do call it *Sapphirus Aureus*: In English this is called *the yellow Saphire*. This is a gemme that doth shine with golden specks and spots, as saith Dioscorides, and Plinie *lib. 37. c. 9.*

4. The fourth kind is between blue and white, it is in colour like skimmed milk, very perspicuous and clear, and this is that gemm which is called *Sapphirus candidus*, or the *white Saphire*.

These are many times substituted for *Diamonds*:

and they are called the female *Saphires*, the other the male. That stone which Pliny doth in some place call the *Saphire*, is the *Cyanus* or *Lapis Lazuli*.

The places.

They are found in *Calecut*, *Cananor*, and in the kingdome of *Bismager*; in *Zeilan*, in the kingdome of *Pegu*, and in the Eastern Countreys: there are also of these stones found in the Western Countreys, as in *Bohemia*; and very good ones in *Silestia*: in these parts there are of these stones found very transparent, but soft, of a milkish colour mixt with a blew, and they are called *Leucosaphirus*, these are subject to many harms.

The best are so hard that they cannot be filed, the colour of these *Saphires* may so be taken away, as that they may be converted into a very excellent *Diamond*.

Of its faculties and properties.

The *Saphire* is of a cold and drie faculty, even as are most pretious stones: it is reported of it, that it is good against feverish distempers, hence this old distick.

Corporis ardorem refrigerat interiorem

Saphirus, & Cypria languida vota facit.

The best of these are very comfortable to the eyes, if they be often looked one. It is reported of it, that if it be worn by an adulterer, by loosing its splendour it will discover his adultery: and that the wearing of it, doth hinder the erections that are caused by *Venus*. But surely, as either lustfull thoughts.

thoughts, or this wicked spirit *Asmodeus* moving them, or stirring up such disorders and irregularities without them, in the body, are the causes of such undue erections of the flesh: so when he withdraweth himself, this stone hath power to hinder them, and not before. Many have written of the faculties of this stone; as Galen, Dioscorides, Cardanus, Garcias, and Macer the Poet, *lib. 5. c. 5.*

It is reported of it, that it is of so contrary a nature to poysons, that if it be put into a glasse with a Spider, or laid upon the mouth of the glasse where the Spider is, the Spider will quickly die. And that it keepeth men chaste, and therefore is worn of Priests.

Anselmus Boetius saith, that S. Jerome affirmeth in his exposition of the 19. chap. of Isaiah, that the *Saphire* being worn of any man, procureth him favour with Princes, and with all men; pacifieth his enemies, freeth him from enchantments, and from bonds, and imprisonments, and that it looseth men out of prison, and asswageth the wrath of God. (Anselmus Boetius p. 49.)

Of its dignity and value.

For its sacred use it hath been esteemed of great worth, as Exod. 28. 18. And for its superstitions, take this caution, use it with much circumspection. Amongst the Ancients, and with the Heathen, this gem hath been of very great authority, because they thought it did not a little prevail with God.

*The Gentiles consecrated this gemm to Apollo, because

**Andr. Bacc. cap. 7. de gem. nat.*

*Vile Andra.
Bacc. c. 7. de
Nat. Gem.*

because in their enquiries at his oracle, if they had the presence of this gemm with them, they imagined they had their answer the sooner.

It is desired of many for its excellent beauty; for it is fair like unto a serene skie: No better a description of its excellent beauty can you find, then that which is given of it, Exodus 24.9, 10. Where it is spoken after the manner of men (not as if the children of Israel saw any appearance of God in the form of man) That the children of Israel saw the God of Israel: and there was under his feet, as it were a paved work of *Saphire* stone, and as it were the body of heaven in its clearnesse.

This stone is valued according to the excellency of its colour, beauty, purity, and greatnesse: one of the weight of four grains is worth many crowns. The best of these are as much worth as a *Diamond* of the same bignesse.

CHAP. XI.

Of the Opalus.

*Description
of the stone.*

THe *Opalus* is a pretious stone which hath in it the bright fiery flame of a *Carbuncle*, the pure retulgent purple of an *Amethyst*, and a whole sea of the *Emeraulds* spring glory, or vireescency, and every one of them shining with an incredible mixture, and very much pleasure: so that this cannot easily be counterfeited or adulterated as other jewels may. Boetius saith of it, that it is the fairest and most pleasing of all other jewels, by reason of its various colours. Cardanus saith that he bought

bought one for 15 crowns, that he took as much pleasure in, as he could do in a *Diamond* of 500 Cardan. de Subt. l. 7.
aureos.

In many of these stones do appear Skie-colour, Purple, Green, Yellow, Red, and sometimes a Black and White or Milkish colour: but we must not think that all these colours are severally in the jewell, for break but the *Opalus*, and all the variety of colours do perish; by which it doth appear that the variety of colours in the *Opalus*, ariseth from the reflection of one or more colours; as sometimes is seen in the Rain-bow, and may be experienced in a triangular *Crystall*, where the alone reflection of the light upon the angles, or corners of the *Crystall*, do in the *Crystall* produce various colours, which otherwise is diaphanous, perfectly transparent, clear, and without colour.

Of its foyle or tincture.

Though the gemm be a transparent gemm, yet there can be no foyle for the setting of it off, for the variety of colours in the foyle, would cause a confusion in the various colours of the *Opalus*.

Of its adulteration.

Though a foyle can hardly be usefull in the setting off of the true jewell; yet by other stones it cannot be counterfeited, imitated, or adulterated, but by the help of a foyle; Impostours can adulterate it with a double glasse tinctured, or coloured, or with a convenient tinctured foyle betwixt them, or with two
Crystals;

Crystals, or other diaphanous stones joynd together with a convenient soyl.

Baptista Porta saith, that if the *Calx* of tinne be cast into molten *Crystill* glasse, it will cloud it, and colour it like an *Opalus*. Quercitanus saith, that the spirit of *Nitrum* will colour a glasse alembick with variety of colours, like unto an *Opalus*; as appeareth by his book called *Priscorum Philosophorum vera medicina*.

Of its names.

It is known of jewellers that are most expert, by the name of *Opalus*. In English it is so called. The Italians call it *Girafole* and *Scambaia*.

The kinds of it.

There are four kinds of it, The first kind of it, doth imitate red, green, skie-colour, and purple; and sometimes purple with a yellow colour, and these are the best of all other: These are known by their *Carbuncle* flame, by their *Amethyst* splendour, and by their *Emerauld* viridity, all shining together with an incredible mixture, and by their admirable and wonderfull ponderosity: for this is a gemm that though it be seldome found bigger for magnitude then a bean, and for the most part of lesse bignesse, yet its weight will be incredible, as appeareth by this of Cardanus, who speaketh of one of these stones that was shorter then a bean and not thicker, that weighed *duos denarios*, that is saith he, almost fifty grains of wheat, the best are hardest, the other are softer: the cause of its wonderfull propriety

prietic, and of its various delightfull colours, Cardanus saith is this, because the stone is crisp, and of some pervious parts: by those parts which are not pervious or porous it doth receive the light, and returneth it, and by this means it cometh to passe that it hath a white snowy brightnesse and splendour: contrariwise, by a contrary conversion it doth receive the light, but not return it: and hence it is that the stone appeareth dark, obscure, and of a brown colour. *Vide Card. lib. de lap.*

2. The second kind is black, and doth out of its blacknesse send forth as it were a flame. This is very pleasant, very rare, and very pretious. Boetius saith, that he hath seen of this kind of the bignesse of the greater sort of pease.

The third kind hath various colours, but in a yellow body, and they seem to be quiet, lie still, and not to range: and therefore they do not so exactly feed the eyes with the reflexion of their rayes. These three kinds are brought out of *Hungaria*.

To this last kind there is another with a milkish colour that may be referred, and the Italians do call it *Occhio del gatto, oculus cati*, or the *cats eye*: and of some it is called *Pseudopalus*, or the *Bastard Opalus*.

4. The fourth kind is also called *Pseudopalus*: it is notably diaphanous like unto fish eyes, and it hath in it a little milkish sky-colour, or somewhat of a yellow colour. The Germanes call this *Wehse*, the Italians *Girafole*: some call it *Astroites* and *Asteria*, because it doth include within it self a light, walking like a starre.

The places.

India is the mother of these gemms: they are found also in *Cyprus*, *Egypt*, *Arabia*, *Galatia*, *Thaso*, *Hungary*, *Pontus*. The *Hungarian* ones are found in a soft stone, distinguished with black, yellow, and brown veins, and the body of the stone is whitish, yellowish, and blackish, and sometimes perspicuous with divers colours. Many of these are so soft that they will not endure polishing, no not upon tinne or lead, but onely upon a soft *Tripolitan* earth. Boetius 98.

Its vertues.

It is reported of this stone, that it sharpeneth the sight of the possessours of it, and cloudeth the eyes of those that stand about him, so that they can either not see, or not mind what is done before them: for this cause it is asserted to be a safe patron of thieves and thefts; as it is related in *Lapidario*.

Its value.

History.

Amongst the Romanes it was in great request: for it is reported of Nonius a Senatour, that he had rather have been deprived of his countrey and Senatourship, then part with an *Opalus* which he had from Antonius. This *Opalus* of Nonius was of the bignesse of a silberd, and esteemed at twenty thousand *aureos*. Boetius saith, he saw one of the bignesse of a walnut, perspicuous, with various colours, and milkish, which was valued at 200 crowns. Their price

price and esteem is not great in these dayes: for one of foure grains weight of the first and best kind, is scarce worth three crowns: the other have their value according to their bignesse and beauty.

CHAP. XII.

Of the Emerauld or Smaragde.

THe *Emerauld* is a pretious stone or gemme of so excellent a viridity, or spring-colour, as that if a man shall look upon an *Emerauld* by a pleasant green meadow, it will be more amiable then the meadow, and overcome the meadows glorie, by the glory of that spring of viriditie which it hath in its self: The largeness of the meadow it will overcome with the amplitude of its glory, wherewith farre above its greatness it doth feed the eie: and the virescencie of the meadow it will overcome with the brightnesse of its glory, which in it self seemeth to embrace the glorious viridity of many springs. This stone is known by its apparent coldnesse in the mouth, by its gravity being weighed: and in this, that being cast into a fire, it will not burn, nor send forth any flame; and that in the brightnesse of the Sunne, it will keep its excellent viridity and greennesse.

*Description
of the stone.*

Of its soyl or tincture.

The *Emerauld* is a transparent stone, and therefore may be substrate with a convenient soyl.

Of its adulteration.

There are many wayes which impostours use to adulterate this gemm; as with *Crystall*, glasse, and flints calcined and melted together; and then a small quantitie of *minium* or red lead being added.

Others take *as ustum* finely powdered, and half so much *crocus Martis*; these they set in a furnace of fire for the space of six hours, that they may be melted together; then they let the vessel cool, and afterwards they take out the jewell and polish it. And if this be rightly done, this jewell will be very like to the *American Emeraulds*.

Of its names.

In Hebrew it is called פטרוית כוש, that is, *Topazius Ethiopicus*, Job. 28. 19. and פטרוי and פטרוי that is, *Topazius* or *Smaragdus*, as Exod. 28. 19. which is rendered by Caldeus *lapidem viridem*, and known amongst us by the name of the *Emerauld*. In Greek Σμαγύδος, and in Latine it is called *Smaragdus*, by which name Isidorus in his book of etymologies of names, saith it is called from its viridity, and excellent greenesse: or it may be so called from its splendencie and lustre. Is is also in Greek called *Prasinus*, because of the resemblance of the greenesse of leeks which is in it. Epiphanius saith it is called *Neronianus* and *Domitianus*. It is supposed to have the name *Neronianus*, from him that invented the use of it, who was called by that name. Horace calleth it *lapis viridis*. In Dutch, *ein Smaragde*: in Italian,

Isidorus lib. 16.
c. 7. de Etymolog. nomin.

Italian, *Smeraldo*: in Spanish, *Esméralda*: in French, *Esméraud*. The Persians and Indians call it *Pachèè*. The Arabians *Zamarut*. Serapio and Pandectarius call it *Tabarget*. In English it is called the *Green stone*, *Emerauld*, and *Smaragde*.

Of its kinds.

Amongst the pretious green stones, there are none so pleasant and so excellent as the *Emerauld*: it is pellucide, and doth much delight the eye with its colour. It hath no mixture of blue, as in the *Turkey-stone*; nor of yellow, as in the *Topaze* of the Ancients, which is now called the *Chrysolite*. The best Orientall ones are very hard, and of a very fair, pleasant, green colour, like unto a green field in the Spring. They do much sharpen and acuate the dulnesse of the sight, and therefore engravers will most willingly be employed about them. They are very transparent, and do very excellently dart forth their rayes like lightning; and therefore they are of great esteem and price. Martinus Rulandus saith of an excellent *Emerauld*, that it doth excell in its verdure the watered grasse, the neighbouring herbs, the virescencie of green boughs, and, as I may so say, even all the glory of the Spring. There is a *Smaragde* which Plinie *lib. 37. cap. 10.* calleth *Lymoniates*. Plinie *l. 37. c. 5.* and Solinus *lib. 20.* make twelve kinds of *Emeraulds*.

1. *Scythicus* or a *Scythian* one, which is the most noble of all others, because of its excellent hardnes, and it is not subject to any injurie. This is found in gold mines, and cannot be obtained without a great deal of danger: For it is reported, that the Gry-

Of Gemms in particular. Part I.

phines take charge of this, stand century about it, and have their safe custody upon it. These fierce ravenous birds make their nests in the mines of gold where these precious gemms are to be had, therefore the *Arimaspi*, or *Monoculi*, who hunger much after the gold, and *Emeraulds*, are forced to arm themselves for a battell with these birds, before they can obtain their prize.

2. The second kind is called a *Bactrianus Smaragdus*, and is found in the clifts of rocks.

3. An Egyptian *Emerauld*, and is found about Thebes.

4. A Cyprian one.

5. Is called *Atticus*, and is there found in silver mines.

6. The sixth is called an Ethiopian one.

7. The seventh is called *Medicus*, this is of very much excellent viridity or verdure, and sometimes this its virefcency doth appear as out of a *Saphire*.

8. The eighth kind is a *Carchedonian*, or *Calcedonian* one, and is called *Smaragdites*.

9. The ninth a *Tasian* one, and is brought from Persia.

10. The tenth is a *Cilician* one.

11. The eleventh is a *Laconick* one, and is like to that which is called *Medicus*.

12. The twelfth is called *Chalco-smaragdus*, and is found in Cyprus, in veins of brasse.

Of the places.

The severall kinds of *Emeraulds* are found in the
places

places specified by the names of their kinds: There are Orientall ones, and there are Occidentall ones. The best are brought from the East-Indies. There are also excellent ones found in the Occidentall or Western parts, and in the parts of Europe. There are found in Peru, which have a pleasant green colour, but send forth no rayes, these are softer then the Orientall ones, and often times full of green clouds: there are excellent ones found in *Cyprus*, and in the Island of great Britane, which are small, but for their bignesse comparable to the best Orientall ones, of the same bignesse. The Orientall ones are seldome found bigger then a silberd. The Occidentall ones, are sometimes found as broad as the palm of the hand.

It is reported of Nero that he was wont to behold *History.* the Fencers or sword-players through an *Emerauld*, as by a *speculum*, or optick-glasse; and for this cause this jewell is called *jemma Neronis*. Andreas Baccius in his book *de Natura Gemmarum*, maketh mention of a large *Emerauld*-vessell that is at Genoa, very fair, and of infinite value, inso much as it cannot be prized.

Of its properties.

It is a stone which in former times was by ancient Astrologians dedicated to Mercury; Cardanus attributeth much power and vertue to it in the point of divination, as doth appear in his seventh book *de lapidibus pretiosis*.

This stone is good to recreate the sight; Andre-

as Baccius, Agricola, Cardanus, and Anselmus Boetius say, that there is such an enmity betwixt it, and illegitimate venery, or the uncleanness of the flesh, as that if it do but touch the skinne of an adulterer, it will break: and that it doth bridle the reins of lasciviousnesse, and much temper it; Inso much as Albertus Magnus doth not doubt to affirm that the king of *Hungaria Bela* having carnall knowledge of his wife, with an *Emerauld* set in gold on his finger, the *Emerauld* brake into three parts.

History.

Avenzoar saith it is good against poysons, and that six grains of its powder in a convenient water is an excellent Cordiall; if so, then a drop or two of its tincture, described by Boetius, must needs be of admirable faculties.

Of its value and dignity.

Exod. 28, 18.

For its sacred use this stone hath been of great esteem. This was one of the stones enclosed in one of the ouches of gold in the breast-plate of judgement. The rainbow that S. John saw in his Revelations round about the Throne, was like in sight to an *Emerauld*, Revel. 4. 3. This is one of those stones by which the glory of one of the foundations of the wall of the New Jerusalem is discovered to us, as Revel. 21. 19.

This stone hath been alwayes of great esteem, inso much as in times past they were forbidden to grave any thing upon it. The Orientall ones, have been esteemed worth a quarter so much as a *Diamond* of the same weight.

Linsorta-

Linshortanus doth esteem them of greater worth then the *Diamond*, and valueth an *Emerauld*, as big as a *Diamond* of foure grains, well worth 80 ducats; whereas he esteemeth the *Diamond* of that bignesse not more worth then 70 ducats. A perfect glorious excellent *Emerauld* is of very much worth and value, as appeareth by this of *Aloysius Muddella* a Physician, who testifieth that his brother who was a jeweller, received of *Franciscus Maria* Prince of *Urbine*, the summe of 113 aureos to buy him an *Emerauld* of the weight of eight grains of wheat, most pure, and Orientall, that by it he might receive alleviation in an infirmity which he was troubled withall.

CHAP. XIII.

Of the *Prassius*, *Smaragdite*, and
Chrysoprassius.

THe *Prassius*, *Smaragdite*, or *Chrysoprassius* is a Description of the stone. transparent green gemm imitating the colour of green Leeks. The beauty of this stone ariseth of the mixture of a yellow and green; the transparency of it is through a cloud: it is sometimes found to have some reddish, whitish, or blackish specks or colour, by reason of its growing to a *Fasper*, or *Crystall*, or to some other jewell, from which it receiveth various small bodies, and various colours. This gemm, as saith *Baccius*, is by some thought to be the house, Domicile, or Palace of the *Smaragde*, and that because the *Emerauld* or *Smaragde* is found either in it, or affixt to it.

Of its Adulteration.

This stone, saith Anselmus Boetius *lib. 2. c. 57. p. 103.* is seldome adulterated by reason of its small value.

Of its kinds.

Baccius saith this gemm is a very fair gemm, and by some it is referred to the kinds of *Achates*, by others, to the kinds of *Beryls*. It is by Boetius reckoned among the kinds of *Emeraulds*, who doth make a discovery of three kinds of this stone.

1. A kind of an exact green colour like Leeks, or the *succus porrorum*, as saith Baccius.

2. The second kind hath very much yellowesse: and if these be of a golden splendour, then are they the *Chrysopteri* of the Ancients.

3. The third kind are whitish, with a little greenesse and a greater yellowesse.

Cardanus saith, that all green jewels are subject to the fire, by reason of the abundance of semiconcocted humour which they do contain in them.

Cardan. l. 7.
de lap. prec.
p. 346.

The place.

They are found both in the *East* and *West-Indies*, and in *Europe*, and in *Germanie*, and these are fairer then the *Oriental* ones, but somewhat softer: they are found in *Bohemia*, and in the neighbouring countreys thereabouts.

Of its properties.

It is said to be of the nature of the *Smaragde*, or *Emerauld*,

Emerauld, but of somewhat more remiffe power and faculties.

Of its dignity and value.

They are valued according to their beauty; their prices will not very much amount (though for their *Emerauld* beauty they may be of some had in very great esteem) because they are soft stones. It is reported of the *Prasius*, that it will suddenly loose its viriditie, if there be any poyson or venome in place where it is, and again recover its lustre if it be washt. It is also said of it, that it is a great cordiall, much comforting the heart; and that it doth conferre much to the dispelling of the darknesse and cloudinesse of the sight.

CHAP. XIII.

Of the Chrysoprassus.

THe *Chrysoprassus* is a transparent green stone, with the splendour of gold. Description of the stone.

The Ancients used to call all those Jewells which had the splendour of gold *Chrysolites*, of the Greek word χρυσος and hence the *Prasius*, *Topaz*, and *Beryll*, which shine with golden rayes: and the *Chrysoprassus*, *Chrysopaius*, and *Chrysoberyllus*, which are found to have the same bright, golden lustre joynd with their viriditie or greenesse, are so likewise called.

The *Chrysoprassus* hath the splendour of gold with

the greenesse of a leek: It is very pleasing to the sight, and of more esteem then the *Prasius*,

Its names.

In Hebrew נֶפֶשׁ *Nopech*: as Exod. 28. 18. which according to Onkelos is the *Smaragde* or *Emerald*: in Latine *Chrysoprasus*: in English the *Chrysoprasse*.

Of its properties.

It is thought to be endowed with the same faculties and *vires* that the *Prasius* is.

Of its dignities and value.

This stone is of esteem because of the sacred use it hath been of; by it we have the glory of one of the twelve foundations of the wal of the New Jerusalem discovered to us in the 21 chap. and the 20 verse of the Revelation of S. John; where it is said, that the tenth foundation of the wall, which was of a *Fasper* structure, was a *Chrysoprassus*, by which foundation S. Augustine doth signifie *S. Thomas*, in his explication of the book of Psalms. The citie saith he was pure gold like to cleare glasse, whose foundations was adorned with twelve pretious stones.

The first foundation was

1. *Fasper*, that is, *S. Petrus*.
2. *Sapphirus*, that is, *S. Paulus*.
3. *Chalcedonius*, that is, *S. Fohannes*.
4. *Smaragdus*, that is, *S. Facobus major*.
5. *Sardonyx*, that is, *S. Facobus minor*.
6. *Sardius*, that is, *S. Andrens*.

7. *Chry-*

7. *Chrysolithus*, that is, *S. Mattheus*.
 8. *Beryllus*, that is, *S. Simon*.
 9. *Topazius*, that is, *S. Bartholomeus*.
 10. *Chryso-prassus*, that is, *S. Thomas*.
 11. *Hyacinthus*, that is, *S. Philippus*.
 12. *Amethystus*, that is, *S. Judas, Simonis frater*.

Then speaking of the twelve gates of this citie, which are every one of one entire pearl, he saith, that by these gates are meant Christ the immaculate Lambe of God; who in the Gospel of S. John, chap. 10. 9. calleth himself *the doore of the sheep*, saying, *I am the doore of the sheep, if any man enter in by me, he shall be safe, and go in and out, and find feeding.*

CHAP. XV.

Of the Smaragdo-Prassius.

THe *Smaragdo-Prassius* is a transparent green gemme, of a mixt beauty: it is betwixt a *Prassius* and an *Emerald*: it being compared with the *Prassius*, hath the greenesse of grasse without yellownesse; and if it be compared to the *Emerald*, it hath in it a yellowish greenesse more then is in the *Emerald*. It is seldome perfectly perspicuous, because it doth partake of some cloudinesse.

Of the kinds of it.

Boetius taketh it for a kind of *Emerald*, or a bastard *Smaragde*. There are two kinds of it.

1. *Bohemian* ones, which are transparent through a fine thin cloud.

2. *American* ones, which are half transparent, like unto *Vitriol*.

Of its faculties, properties, dignities and value.

It is reported of it, that if it be applied to the arm, it will by a Diuretick facultie procure urine in a Dyfury; and expell gravell, and hinder the generation of the stone, asswage the pains of the reins, and the extream dolours of the gout. And if in the manner of an amulet it be hung about the neck, it is reported of it, that it will effect the same cures; and not onely so, but in children free them from fears and frights. This stone is known but to very few, therefore its worth, value, and price cannot well be discovered.

CHAP. XVI.

Of the Chrysolite, or rather of the true Topaze, which in ancient times was called a Chrysolite commonly and vulgarly; and of the Chrysopatius.

Description of the stone.

The true *Topaze* of the ancients which commonly and vulgarly in former times hath been taken for a *Chrysolite*, is a transparent gemme, of a diluted green colour, which seemeth (as saith Boetius) to have some yellownesse added to it. Andr. Baccius saith, it is a stone egregiously glorious, and in its kind excelling in viridity, and being found it is preferred before other gemms. When this gemme is found of a yellow greenesse, it is not (saith Boetius) then

then properly called *Topazius*, but *Chrysoptius*, and the mother of the *Smaragde*. In a *Chrysoptius* there is a golden splendour, which doth shine through a verd, or green colour. In a true *Chrysolite*, which is commonly and vulgarly called *Topaz* (of which in the next chapter) there is nothing else but a perfect, excellent, glorious sun-shine, or a delightfull golden splendour, and in a perfect *Topaz* there is found an excellent, glorious, dilute, green colour, which is very delightfull to the eye, and without any touch or tincture of any other colour whatever. Thus are these three pretious gemms truly and perfectly distinguish'd, which Plinie doth speak so confusedly of, that nothing of truth can be gathered from him concerning them. *Vide Boet. pag. 104.*

Of its foyle or tincture.

This gemm being an excellent transparent gemm, of a dilute green colour, may admit of a silver foyle conveniently tinctured, or of some other foyle fitted for this purpose, and then placed in the enclosure under this gemme.

Of its adulteration.

And as this gemme may admit of a foyle, so no doubt but it may likewise be subject to adulteration: for it is very glorious and excellently pretious, and what will sophisticatours and impostours not attempt to do for value and for price? This they will attempt by double *Crystals* or diaphanous stones with a convenient green-foyle interposed, and they being thus
set

set in their inclosures with a like foyle substrate, the fallacies will the more uneasily be discovered.

Of its names.

By the Hebrew words פִּטְרִי and פִּטְרִי some do understand the *Topaz* of the Ancients, (of which Hebrew words we have before spoken in the chapter of the *Emerauld* or *Smaragde*) and that because this stone is green like the *Emerauld*. It is called in Greek *τοπαζιον*, *μιζιον* of Hesyck. it is thus called in Greek *ἀπὸ τοῦ τοπαζίου, τὸ ζῆρεῖν, quòd multo studio quaritur.* It is also called *Topazion*, from a cloudy island of the red sea, which is often sought for by Navigatours, for which frequent search it is called *Topazion*, and the gemme is so named because it is found in this island; *Topazin* from whence this name *Topazion* cometh, is a *Trogloditish* word, which in the language of the *Troglodites*, signifieth *querere*, or *to seek*. The *Troglodites* are *Ethiopians*, which are extended to *Arabia* and the red sea, who have this name from their frequenting of caverns and caves of the earth: hence in Greek they are called *Troglodites*, *ἀπὸ τῆς τρογύλου, hoc est, à specu & caverna, quòd in specubus & cavernis degant.* Plinie l. 37. c. 8. saith, that this gemme was first brought out of the Island of the *Troglodites*, called *Topazion à quarendo*, to *Berenice* Queen of *Egypt*, and from thence was called *Topazion*. It is called in English, *Topaz*; in Italian *Topazzio*; in French, *Topasse*; in Spanish, *Topazze*; in Germane, *ein Topas*.

Of its kinds.

Plinie maketh two kinds of it: 1. *Praſoin*, or 2. *Chryſopteron*: but neither of theſe have the true luſtre of the *Topaze*. Albertus *magnus* and Evax do likewise make two kinds of this ſtone, the one of an *aureus* colour, the other of a ſaffron colour: but both theſe are free, as well as the former two, from the delightfull glory of an excellent perfect *Topaze* deſcribed by me, according to the beſt diſcoveries, in the firſt part of this chapter, to be a pleaſing green gemm, of a dilute verdure and very delightfull to the eye.

Of the places.

The places in which the true *Topaze* is found, is the Iſland of *Chitis*, in *Arabia felix*: there is a certain rock in an Iſland of the red ſea, near *Arabia felix*, in which the *Topaze* is found: it is alſo found in the Iſland called *Topazion*, which is inhabited by the *Troglodytes*; and as Pliny ſaith, it is found in the mines of *Alabaſter* near *Thebes* a city of Egypt.

Of its properties, nature, and qualities.

It is of ſuch excellent faculties, as that it is ſaid of it, that it freeth men from paſſions, and from ſadneſſe of the mind. And that if it be caſt into ſcalding hot or boyling water, it doth ſo aſſwage in a wonderfull manner, and ſo in an inſtant, and of a ſuddain aſtoniſh and ſtupifie its heat and fervour, as that it ſtraight taketh away all its boyling, and its heat, and a man may in that very inſtant in which it

was put in, put his hand without any hurt or danger into that water which even now with the fervency of heat boyled up. (See Epiphanius and Albertus.) For this cause it is thought to be a very excellent remedy for the mitigating of choler and of cholerick passions. It is reported of it that it doth drive away nocturnall fears; and that it is a very effectuall Amulet against cholerick distempers o the brain.

Authours do say of it, that if it be put upon a table where poyson is or venome is left, it will straight-way fail of its splendour, and loose its glory, and so soon as the poyson or venome is taken away, it will recover all its glory again; wonderfull is this also which is reported of this stone, namely, that it doth increase and decrease in its strength of powers and faculties, according to the increase and decrease of the Moon.

This stone is so hard that it will endure the file, and it groweth into so great a masse, that oft times statues have been made of it. Juba king of *Mauritania* writeth concerning this pretious gemm, that there was a statue of four cubits made of it for Arfinoe the wife of Ptolemeus Philadelphus, which was consecrated to the gods.

It is reported of Hadrianus Gulielmus, that at Naples he had a *Topaz* engraven with these antient Romane letters.

Natura deficit.

Fortuna mutatur.

Deus omnia cernit.

In English thus.

*Nature by frailty doth dayly wast away.
 Fortune is turn'd and changed every day.
 In all, There is an eye know's no decay.
 Fab see's for aye.*

Of its dignity and value.

The excellent *Topaz* in the glory of its viridity hath been esteemed a stone of great value, and that not onely for its innate inbred excellency whereby it is very pleasant to the eye: but because it hath been of sacred use, as both old and new Testament do affirm. It was one of those gemms which had a place in one of those four rowes of stones engraven with the names of the tribes of Israel, and set in ouches of gold upon the breast-plate of Judgement, as Exodus 28. 17. where it was said of God concerning the order of the pretious stones in the breast-plate of Judgement, The first row shall be a *Sardius* and a *Topaz*, and a *Carbuncle*, this shall be the first row. It is also one of those stones whereby the glory of the ninth foundation of the wall of the New Jerusalem is discovered to us, as Revel. 21. 20.

Those that are excellent *Topazes*, do sparkle forth their glory, and beam forth their delightfull rayes: these are of much Esteem, and of very great worth, price and value.

CHAP. XVII.

Of the Topaze, or rather of the true *Chrysolite*, and of the *Chryseletrum* and *Melichrysus*.

IN former times that hath been vulgarly and commonly called a *Chrysolite*, which truly is a *Topaze*, and that a *Topaze*, which is indeed a *Chrysolite*, as appeareth by Cardanus his book which he hath writ *de Lapidibus Pretiosis*.

Description
of the stone.

The true *Chrysolite* is a gemm translucide, perspicuous or transparent, with an excellent *aureus* or golden splendour, or as I may so say, with a pleasing sun-shine splendour: Boetius saith, that a water coloured with Rhubarb or with Saffron doth make a representation of the tincture of a *Chrysolite*.

Of its foyle or tincture.

This being a transparent gemm doth without all question admit of a foyle, such as may be a gold foyle, or some other tinctured accordingly.

Of its adulteration.

The *Chrysolites* for the elegancy of their *aureus* colour are divers wayes adulterated; the best of such sophistications, is in this following manner.
R. of powder of *Crystall*, or of glasse lb. put two drachmes of *Crocus Martis* to it, and a little *Mini-*

um: this must be put to it as it is molten upon the fire, or in the furnace. Baptista Porta in his *Magia* saith, that the *Minium* must first be put in, and after that the *Crocus*.

Or put to calcined *Crystall* thrice so much *Minium*, and let it stand for one whole day in a furnace, and it will be a *Chrysolite*.

Or R. *as ustum* finely powdered, and *Minium* and *Crystall* finely powdered, and four times so much burnt *Tinn*, put it into a strong calcining pot and set it into a fornace for a day; this powder is easily melted; therefore the fire must not be very vehement, and it must be kept alwayes at the same stay.

Of its Names.

In Greek it is called χρυσόλιθος, *quasi aureus lapis*; and from hence also in Latine it is called *Chrysolithus*, from the Greek word χρυός, *quia est lapis qui aureo colore translucet*, that is, because it hath with it a Golden translucency, saith Martinus Rulandus. Solinus *cap. 33.* calleth it *Chrysolampon*. In English it is called the *Chrysolite*.

The kinds of it.

There are three kinds of *Chrysolites*.

The first, which is the true *Chrysolite*, is a very hard glorious sun-shine gemm; which Albertus Magnus saith doth discover the greatest of its beauty in the mornings, and at other times of the day is lesse beautifull then then.

The other two kinds of this gemm are lesse glorious then the former; the one of these kinds is called *Chryseletrum*; the other *Melichrysus*: both these names import something of a golden colour, but these stones are lesse glorious and softer then the former.

Of the places.

There are Orientall *Chrysolites*, and Occidentall *Chrysolites*; the best of the Orientall ones are found in *Aethiopia*: these are like unto most pure gold with an excellent splendour; they are the hardest of all other jewels but the *Diamond*. There are also *Chrysolites* found in *Arabia*, but these sometimes have too much yellownesse, and sometimes too little, sometimes they have various colours, and sometimes they are clouded; but these fall much short of the glory of an excellent *Chrysolite*, whose sun-shine beauty will easily make it known from all the soft troubled clouded kinds thereof. There are also *European Chrysolites*, which are frequently found in *Bohemia*, of as great glory and excellency as the Orientall ones, and they differ onely in this, in that these are somewhat softer then the Orientall ones. There are very excellent ones found in *India*, and *Bactria*, and those in very great weight but soft, sometimes of the weight of twelve pound. Anselmus Boetius saith that he saw a *Bohemian Chrysolite* that was given to Rodolphus the second, Emperour of Rome, that was two ells long, and half an ell broad.

Of its nature, properties and qualities.

It is of the nature of the *Solaris*, or *Sun-stone*. Cardanus in his book of admirable cures, doth relate wonders concerning the vertues of the *Chrysolite*; he saith that with the alone powder of it drunk in wine, he cured Cesar Palavicinus of a fever that he had been troubled withall fifteen dayes, and another Noble-man of Melancholy, and of the falling sicknesse with the same remedy, after that he had long in vain been tormented with the somniferous lotions of Physicians. The powder of it, is said to be good in Asthmatick passions, and in the *orthopnœa* if it be drunk in a convenient liquour. If in fevers it be held under the tongue it is said to quench thirst.

It is cold and dry as all other pretious stones are.

Of its value and dignity.

It is of esteem, not onely for its sun-shine glory; but for that also it hath been of sacred use. This is one of those stones by which the glory of the seventh foundation of the wall of the New-Jerusalem is discovered to us, as Revel. 21. 20.

It is for its gratefull aspect of very great esteem. It is so perfectly hard, as that by the heat of fire it may be made diaphanous and void of all colour, and thus like the best *Saphire*, changed into an admirable *Diamond*; in so much as it being thus dealt withall, no other stone whatever can better resemble an Orientall *Diamond* then it will.

A. *Chrysolite* of the weight of eight grains is worth

worth four crowns; one of these excellent ones of twelve grains weight is worth nine crowns; and one of these glorious ones of the weight of two scruples is worth one hundred crowns.

Anselmus Boetius saith, that he saw one of these that weighed scarce two scruples, and it was sold for two hundred crowns. The colour of which (he saith) being separated from it, it was so exactly set in a ring, that a skilfull jeweller could not know it from a true *Diamond*.

It is whitened after the same manner that the *Saphires* are; of which hath been before spoken.

Ovid. lib. 2. Metamorph. doth very splendidly feigne a chariot of the Sunne made of a *Chrysolite*, in that he saith,

*Aureus axis erat, temo aureus, aurea summa
Curvatura rota, radiorum argenteus ordo:
Per juga Chrysolithi, positaque ex ordine gemma
Clara repercusso reddebant lumina Phæbo.*

CHAP. XVIII.

Of the Beryll.

Description
of the stone.

THE *Beryll* is a transparent pretious gemme, of a pale green colour; such as is most truly resembled by a sea-water green: which colour is caused by the mixture of a blue and green: in so much as this gemme is blue out of a green; that is, it doth discover its blue through the colour of green.

Epiphanius saith of this gemme, that it is *glauca gemma*, of the colour of a quiet sea. All *Berylls* are transparent saith Boetius, and have an allayed colour, that

that is, not a full colour: for if they have a full colour, they are taken for other common jewells. If you would see the perfect colour of the *Beryll*, put a little *Indico* into fair water, and with it a tenth part of green colour, and you shall have the perfect resemblance and true colour of the *Beryll*. Plinie saith that the *Beryll* is in fashion six-quare, and in colour like oyl or water in the sea.

Of its foyl or tincturè.

This being a transparent gemme, may without all peradventure admit of a foyl to quicken it, in the discovery of its glory and lustre.

Of its adulteration.

Sophisticatours are wont, *lucris causâ*, to adulterate this gemme thus: R. *as ustum* finely powdered, and mingle it with crystall and glasse powdered, or with calcined crystall and glasse, and set it in a furnace for a day, and you shall have a *Beryll*. One drachme of the *as ustum* is sufficient for a pound of the other vitreous masse.

Of its names.

The Hebrews call this stone *הרשיש Tarshish*, as Exod. 28. 20. It seemeth to have its name, as it doth appear by Buxtorff, from the maritime citie *Tarshish*: It is a whole transparent stone, of a sea-water green. The word *הרשיש* is by S. Hierome interpreted *Chrysolithus*; but indeed the *Chrysolite* which is *verè Chrysolithus*, is much different from it, as being of a golden

*See Biblioth.
Reg. Hisp. l.
Exot. c. 28.
vrf. 20.*

den colour, whereas the *Tarshish* is green. Anselmus Boetius saith, that the Hebrews call this stone *Fashpech*; but thus it hath no resemblance at all with the *Tarshish*, as it is by S. Hierome interpreted *Chrysolithus*; but it seemeth rather to have some kind of affinity with the *species* of the *Fasper*, some of the kinds of which are of a green colour like the *Tarshish*. What the true *Chrysolite* is, will appear by the former chapter, where a true discovery is made of it as it doth differ from the true *Topaz*, which was vulgarly by those of ancient time called *Chrysolithus*, and the *Chrysolithus* was by them called *Topazius*, but how improperly will appear in the etymologie of the word *Chrysolithus*, which rendereth the *Chrysolite* to be of a golden colour, whereas the true *Topaz* is of a diluted green. This mistake hath arisen in the *Chrysolite* and *Topaz*, from the custome of them in ancient time, who were wont to call a *Chrysolite* a *Topaz*, and a *Topaz* a *Chrysolite*, whom in this their mistake many Lapidists have too too superciliously followed. Now because the *Beryll* (being a green pellucid stone) may sometimes be taken for a *Topaz*, which is likewise green and pellucid; it may be S. Hierome, according to that custome, hath interpreted the *רשיש*, which in its own proper signification is *verus Beryllus*, to be *Chrysolithus*. In Latine *Beryllus*, and *Beryllus Thalassius sive marinus*. It is called *Beryll* of the nation where it is generated. The Italians call it *aqua marina*; and in English we call it a *Beryll*: when they have any golden rayes, they are called *Chrysoberylls*.

Of its kinds.

There are many kinds of *Berylls*, amongst which that is the true *Beryll* which hath the viriditie of a calm and pure sea; a blue out of a green is discovered in these, and these are the true *Berylls*.

2. The second kind are paler, and are called *Chrysoberylls*, from the splendour of gold.

3. The third kind are called *Chrysoprasus*, and these are paler then the former.

4. The fourth kind are called *Hyacinthizontes*, from the colour of a *Hyacinth*.

5. The fifth kind are called *Aeroides*, from the word *aere*, and these are greener then the former.

6. The sixth kind are called *Cerina* from *cera*.

7. The seventh kind *Oleaginei ab oleo*. There is another kind which are said to be like to *Crystalls*.

The *Beryll* of the ancients comprehended under it, all other jewells which are like unto a *Crystall*, with somewhat a diluted colour; as the *Topazes*, and the *Leucosapphiri*. The Italians do untill this day call *Crystalls* which have some colours in themselves by reason of the reflexion of the angles, *Berylls*.

The places.

The *Berylls* are found at the root of the mountain *Taurus*, and in the river *Euphrates*, and in *India*, and these are the best. The other kinds are found in divers countreys, as in *Germania*, and in *Bohemia*.

Of its properties.

A *Beryll* in a spherick form hath the same power of begetting fire from the Sunne by its beams, that a *Crystill* glasse hath. It is said of a *Beryll*, that if it be wrapt in a linen cloth, and put into water, or put into water without it, the water will seem to be moved. *Baccius de nat. gem. in annotat. in cap. 13.*

Wurtzung in his generall practise saith, that the *Beryll* is used in all distempers of the heart. But take this caution by the way; Beware of the use of gemms (unless you are sure they be true) in Physick, by reason they are so frequently adulterated.

*A caution in
the medicinall
use of this
gemme.*

Of its dignitie and value.

The *Beryll* is of esteem not onely for its beauty, but for its sacred use: for it was one of those stones that was set in the Ephod; as *Exod. 28. 20.* and one of those stones by which the glory of one of the foundations of the wall of the New Jerusalem is discovered unto us; namely the eighth foundation, as *Revel. 21. 20.*

Ingenuous artificers do engrave the *Beryll* with many angles, that by the repercussion of them, they may be made the more lively, and the more to sparkle.

The price of the *Beryll* is augmented or diminished according to the elegancie of its colour. And this rule is to be observed in the price of all jewells.

CHAP. XIX.

Of the Crystall and Pseudo-diamond.

THe *Crystall* is a well known diaphanous gemm, like unto most pure water congealed into a transparent perfectly perspicuous body of six sides, which in its extremity doth seem to intend them all to one point. Well may it deserve the name of a precious Jewell for its own glorious diaphanity and uninctured perspicuity, and not onely in regard of its own proper and peculiar beauty, but also for that by it, in Holy writ we have the glory of many facted things discovered to us by Emblemes. Had this gemm as much in *duritie* or hardnesse, as it hath in the purity, excellency, and illustriousnesse of its beauty, no other gemm under the heavens would be comparable to the best *Crystall* for glory. What the manner of the generation of *Crystall* is, that the derivation of the word *Crystallus* will shew plainly to us. *Crystallus* cometh of the Greek words $\kappa\rho\upsilon\sigma\tau\alpha\lambda\lambda\omicron\varsigma$ which signifieth *frigus*, *vel gelu*, and $\kappa\rho\upsilon\sigma\tau\alpha\lambda\lambda\omicron\varsigma$ which signifieth *contraho*. So that *Crystallus* is nothing else then *gelu concretum*, that is, then congealed ice, of this opinion is Gregorius in his comment upon the first chapter of the Prophecie of Ezechiel. There is great difference betwixt the ice and *Crystall*, the ice will swimme in the water, but the *Crystall* as being more weighty, doth straight reside: Diodorus Siculus doth very clearly dissolve this difference in the latter end of his third book; where he saith, that *Crystall* is a stone which hath its originall of

*Description
of the stone.*

pure water congealed, not by the power of cold. (Though in Ecclesiastes it be said, *flavit ventus aquilo, & congelavit crystallum*) But by a certain divine power, of an enlivening quickening heat which causeth it to keep its *durities*, and often times to discover so many various delightfull colours to the eye.

Anselmus Boetius saith, that *Crystall* is the purest part of the earth dissolved by water, which in the absence of the water is congealed into *Crystall*; it is not, he saith, as is supposed, congealed water, for then like unto ice it would be dissolved with heat, and consumed by fire: but it is so farre from consuming in the fire as that it being long molten or burned therein, it doth become a *Calx*, and pure earth, or a salt, by the benefit of whose spirit it is coagulated.

This gemm admitteth of no foyl to set off its glory. Nor is it oft adulterated, because great proportions of it are found in many places. Bowls and cups of *Crystall* are of great esteem with Princes; one of these of a foot in bignesse hath been sold for 100 crowns; Boetius 111.

Of its names.

In Hebrew וכוּכִיר (as Job 28. 17.) that is, *gemma nitidissima*, which is interpreted *Crystal*. Aben Ezra rendereth it *lapis pretiosus nitidus*. The Rabbins take it for *vitrum*, à *puritate*. It is called in Greek κρυσταλλος. In Latine *Crystallus*. In Italian *Crystallo*. In Germane *Crystall*. In Spanish and French *Crystall*. And in English *Crystall*.

The kinds of it.

The name of *Crystall* may be given to all gemms that are soft, diaphanous, and void of colour. Boetius maketh four kinds of it.

First, *Crystallus Montanus*, which is excellently pure, fair, and beautifull, and is found sometimes six cornered, and sometimes round and globous like flints, which are harder then others, and like unto *Diamonds*.

2. The second kind is called *Iris*.
3. *Citrinus*.
4. *Pseudoadamas*.

Of the places.

The cornered ones are found in divers parts of *Europe*, as in the *Alpes*, in *Germany*, in *Bohemia*, in *Hungary*, in *Cyprus*, in *Lusitania*, and in the fields of *Pisania*. The round ones or *Pseudoadamas*, are found near unto *Arnhemius* a Town of *Geldria*, & near unto *Bruxels*, and in *France*, *Bohemia*, and *Silesia*. These sometimes are so hard and do so excellently sparkle, that they can scarce be distinguished from the Orientall *Diamonds*.

Of its nature and faculties.

It is cold and dry: being held under the tongue in fevers it doth quench thirst, and so likewise in these cases it doth much recreate if it be held in the hand, and as it groweth warm, cooled in fair water; the powder of it either calcined or crude being drunk in wine, is good against *Dysenteries* and the whites,

whites, a drachme of its powder taken in the oyl of sweet Almonds, cureth those that have taken sublimite. It is used either in powder, or the salt of it, or the oyl of it, against all obstructions of the bowels, against gouts, swoonings, and all cephalick diseases; saith Boetius, Andr. Baccius, and others.

Of its dignities and value.

For its dignitie, the * sacred use that hath been made of it maketh it of very great esteem: and its own glory and beauty doth commend its worth, and accordingly it is valued and esteemed of Princes and great men; and of those who know how judiciously to judge of things according to their excellencie and intrinseck glory.

* Rev. 21. 11,
and 22. 1.

CHAP. XX.

Of the Asteria, or Gemma Solis.

THe *Asteria*, or *Gemma solis*, is a kind of *Opalus*, which doth sparkle forth its beams like a starre; it is a hard transparent stone. It is called *Gemma Solis*, because if it be held against the Sunne, and turned, it seemeth to shew the Sunne as it were walking in it, or the likenesse of a moving starre: and being held against the light, it doth the same.

Its names.

It is called of Plinie *Astroites*, and *Ceraunia*. It is also called *Asteria*. Michael Mercatus calleth it *Astrobolus*. It is also called *Oculus felis*.

The

The place.

It is found in *Carmania* and *India*. Anselmus Boetius saith, that he supposeth that to be the *Asteria* or the *Gemma Solis*, which like a milkish *Crysell* having a round light included in it, doth send it forth walking with a certain inclination: and that to be the *Astroiten*, which hath in the middle of it as it were small starres thining. This is a kind of *Opalus*.

Of its nature and properties.

It is reported of it, that it doth procure sleep, and drive away terrours of the night, and troublesome dreams.

Its dignitie and value.

The Orientall ones are very beautifull, and so hard that they can hardly be engraven: it is esteemed in value worth twice the price of the engraving.

CHAP. XXI.

Of the Oculus Cati.

THe *Oculus Cati* is the various coloured *Astroiten* of Plinie.

Its names.

It is called of some *Oculus Solis*: of the Persians *Mithrax*, that is, the Sunne. Cardanus calleth it the *Pseudopalus*; but the colours are not so distinct in this; and this also is farre harder.

Places.

They are found in *Zealand*, and in *Pegu*; they are said to be brought from the countrey of *Bramaa* thither.

Its dignity and value.

This stone is greatly esteemed amongst the Indians, because they are perswaded of the devill, that he that weareth it cannot want riches: and for this cause that which in *Lusitania* is sold for 90 *aurei*; is amongst the Indians esteemed worth 600 *aurei*. It is usually of the same price and esteem with the *Opalus*. Hitherto hath been spoken of transparent gemms.



The second part of the Lapidarie.

Of semi-transparent or half-transparent
Gemms.

CHAP. XXII.

Of the Sardius or Cornelian.

Hitherto have been discovered the *species* of diaphanous or perfectly transparent gemms, in their immixt glory, or with their beautifull tinctures; together with their foyle, adulterations, names, kinds, the places in which they have their originall, their properties, natures, faculties, dignities, and values. It followeth that I should make a like discovery of semi-transparent or half-transparent gemms: which that I may do; together with what I find in Anselmus Boetius, I will joyn the veritie of other Simplicists or Lapidists, that so we may come to a perfect discovery of these gemms in their own proper excellency and glory, and in the beauty of their *species*. Amongst the half transparent stones or gemms, Anselmus Boetius giveth the first place to the *Sardius* or *Cornelian*. It being heretofore dignified by sacred use both in the Old and New Testament (as will afterwards appear in the dignitie and value thereof) it shall here

likewise be dignified with the first place, in the consideration of half transparent stones.

The *Sardius* or *Sarda* is a stone or pretious gemme of a red colour, which Plinie saith is best resembled by the colour of a pickled *Sardine* fish, or *Anchorvis*, which colour if it be more remisse or dilute, then is it called *Carneolus*, or *Corneolus*, from the resemblance of flesh.

Half-transparent gemms admit of no foyle or tinctures; the reason of it is cleare in the sight of every eye: for what-ever foyle may be substrate in an enclosure of gold, under an half-transparent gemme, cannot for want of greater transparencie, render it more glorious then naturally it is in it self.

And as it admitteth of no foyle, so there is no adulteration of it to be found in Anselmus Boetius: what may be done by artificiall sophistications in this kind, I shall let alone, till further opportunitie, greater helps, and better informations. Onely this Boetius saith, that it is adulterated with glasse of the same colour: but this is very unlike, as every knowing eye will easily discover.

Of its names.

In Hebrew שרד as Job 28. 16. Buxtorff doth interpret it to be the *Onyx*: and others to be the *Sardonix*, as Junius in Exod. 25.7. אבני שרד ואבני נלמים לאמר לחשן that is, *Lapides Sardoniches & lapides insitivi pro amiculo & pro pectorali sacro*. In Greek, Σαρδινίος λίθος. In Latine it is called *Sardius*,
Sarda,

Sarda, and *Carneolus*, and *Corneolus*, and *Cornelius*. The Italians and French call it *Carneolus*. The Germans *ein Corneol*. It hath also been called *Darneolus*, saith Pliny *lib. 37. cap. 7.* In English a *Sardius* or *Cornelian*.

Of the kinds of it.

There are three kinds of this gemm, as saith Boetius. 1. A red *Corneolus*, which is the best and most excellent of all other, *est ruber instar sanguinis*: but pellucid with its rednesse.

2. The second is of a more dilute and remisse rednesse.

3. Is somewhat yellowish out of a rednesse.

Martinus Rulandus reckoneth up no lesse then two and twenty kinds of this gemm. Of which we may have occasion in a further addition to speak hereafter.

Of the place, and of its nature, properties, and faculties.

This gemm is found in *Sardinia*, and about *Babylon*, in the heart of a rock, very excellent. There are also very good found in *Epirus*, now called *Albania*, and in *Egypt*, and in *India*, *Arabia*, in the *Rhine*, and in *Bohemia*, and in *Silesia* there are very excellent ones found growing to stones.

As concerning the faculties of this stone, Epiphanius asserteth of it, that it causeth him that weareth it to be of a chearfull heart, free from fear, and

nobly audacious, and that it is a good protection for him against witchcrafts and fascinations, and putrefactions of humours. Baccius in his Annotations saith, that the powder of it taken in austere wine stoppeth the *menses*, and hindereth abortion.

Andr. Bacc.
de nat. Gem.
c. 3.

Its dignity and value.

For its own beauty it is of value and worth: But the sacred use of it, is that that hath made it of greatest dignity, and highest esteem: in the law we find it was set in the enclosures of gold of the breast-plate of Judgement, Exod. 28. 17. in the book of the Revelations we find the glory of the sixth foundation of the wall of the new-Jerusalem discovered to us by the glory of its resemblance, Revel. 1. 20. This stone hath been of great esteem amongst the Romanes, but now the knowledge of more excellent jewels makes it not so much regarded. Its use is chiefly in seals, and ornaments for the necks, wrists, and hair of women; one not engraved, of the bignesse of the walnut, is worth twenty shillings. Cardanus saith that he had one, that was in its upper part a *Sardius*, and in its lower part an *Onyx*. In seals these gemms are much used of great men. I have had one of the best kinds of these fitted for a seal, without any engraving, with a small black line, on the side of it.

Cardan. l. de
lap. prec.

CHAP. XXIII.

Of the Sardonyx or Cameus.

THe *Sardonyx* is a pellucid gemme which doth contain in it self the glory of two gemms, namely the rednesse of a *Sardius* or *Sarda*, and the whitenesse of an *Onyx*, by which it doth appear, that that stone which Cardanus reckoneth amongst the kinds of *Cornelians* or *Sardius*, is a *Sardonyx*. And so indeed it is, for a *Cornelian* red in the upper part of it, and white in the lower part of it, is a *Sarda* or *Sardius* in its upper part, and an *Onyx* in its lower part; hence also Cardanus calleth a *Cornelian* thus beautified a *Sardonyx*, *lib. 7. de lap. preciosis*. Boetius saith that a *Sardonyx* consisteth of a sanguine; white, and black colour, which are distinguished by circles, or girdles, as if they were done by art. Baccius in *Annotat.* saith, it consisteth of a treble colour, of a black below, of white in the middle, and of red above. But the name of this gemm doth end all controversies about it, and make a very clear discovery of its beauty.

*Description
of the stone.*

Of its Adulteration.

This gemm as the former, is adulterated with glasse, but that will easily be known by its want of beauty, and by its dusty *superficies* which it will contract; and it will be eaten out by the air.

Of its names.

In Hebrew it is called צנפ even as is the *Sardius*.

Of semi-transparent Gemms. Part II.

dius. In Greek $\alpha\epsilon\sigma\iota\tau\epsilon\sigma$ *quasi Sardius & Onyx*. Hence this stone is also called in Latine *Sardonyx*, from *Sardius & Onyx*. The jewellers of these our dayes, saith Boetius, call both the *Onyx* and the *Sardonyx*, *Nicolus*. It is also called *Camius*. In English *Sardonyx*.

Of its kinds.

1. One kind of it Boetius saith hath black and white girdles, and is called the *Onyx*. 2. Another kind of it he saith hath one streak of one colour and an other of another colour, and this is called *Camehaya*, or *Camius*, or *Onyx*, or *Sardonyx*. 3. Another kind he saith there is that hath purple, white, rosie, and skie colour, compassing one another like girdles, with the resemblance of a rainbow, which he saith, for their delight to the eye are of great dignity and worth. 4. Other kinds he saith there are of an hony colour, which have drosse in them, and have not the girdle united, but diffluent, which he saith are ignoble and of small price.

The place.

These stones are found in *Arabia*, *Germanie*, and *Silisia*, and in the neighbouring countreys. Of these gemms the Orientall ones are the best of all others.

The *Sardonyx* is found in great bignesse, inso-much as cups may be made of it, which are of great esteem and worth.

Of its nature and properties.

It hath the same vertues with the *Sardius* and *Cornelian*, saith Boetius, Pliny, and Cardanus.

of

Of its dignity and value.

This stone likewise hath been of great esteem, as it was in former times of sacred use: nature here, as being much pleased with unity, hath united the beauty of two gemms in one, and by thus sporting it self with the consent of beauty, it hath reconciled the Law and Gospel; for the *Onyx* is one of those stones which was set in the enclosures of gold in the breast-plate of Judgement, and the *Sardonyx* is that pretious gemm by which the glory of the fifth foundation of the wall of the New Jerusalem is discovered to us. Exod. 28. 20. Revel. 21. 20.

Demostratus saith that Scipio Africanus was the first that ever brought this gemm in use amongst the Romanes, and by this means it was famous not only amongst them, but also by their perswasions, amongst the Indians.

The *Sardonyx*, with the beauty of a *Sardius* and an *Onyx*, without mixture of any other colour is of great esteem and worth.

The China vessels which are brought into these parts, are supposed to be made of this stone and the fatter part of the earth boyled together.

It is related of Mithridates king of Pontus, that *History*. he had 4000 vessels of this mettall.

CHAP. XXIV.

Of the *Chalcedony*, *Carcedonie*, or *Carchedonie*.

THe *Chalcedony* or *Carchedony* is an half-transparent stone, of an obscure, fiery, red colour, and very hard. *Description of the stone.*

Of its adulteration.

It is adulterated with *Crystall* and *calx Argenti* melted together in a furnace for a day.

Of its kinds.

Plinie reckoneth this stone amongst the kinds of *Rubies*, but these are of a blacker aspect: yet they are paler and more obscure then the *Carbuncle*. He saith there is a male and a female of it, and that the male hath its starres burning within it self: and that the female doth poure forth its sparkling rayes. But these for their glory, may better be referred to the *Granats* and Orientall *Amethysts*, then to the *Chalcedonies*.

There are Orientall *Chalcedonies*, and they are of a purple or sky-colour, mixt with white, and pleasing to the sight: or else they have a very pleasing rednesse, and those that have such a rednesse, are the *Chalcedonies* of the Ancients; of this sort Anselmus Boetius saith he had many, *Boet. l. 2. p. 121.*

There are *Chalcedonies* of an earthy, obscure, white colour, and these are the worst of all other.

The truest and best of all other *Chalcedonies*, Boetius saith, are those in which sky-colour, white, yellow, and red, do with a certain delightfull and pleasing confusion appeare, which being held against the Sunne, doth by the reflexion of its rayes, shew the colour of the rain-bow.

Of the place.

It is found in *Germanie*, in *Belgia*, about *Lovain*, and about *Bruxels*.

Its properties.

It is reported of it, that it driveth away evil spirits, that it is good against melancholy and sadness, that it procureth victory to him that is the possessour of it, and carrieth it about him. *Andr. Bacc. in annot. super 6. c. de nat. gem.*

Its dignitie and value.

It hath been of great esteem for its sacred use, it is one of those stones by which the glory of the third foundation of the wall of the New Jerusalem is discovered to us, Revel. 21. 19.

The chiefeft use of these is in seals; for it sealeth freely, without any devouring of the wax.

The best are of the same esteem and price with the *Sardonyx*.

CHAP. XXV.

Of the Onyx and Chamehuia.

THe *Onyx* is a pretious gemme which represents the candour and beautie of a mans nayl: hence in Greek it is called *ὄνυξ*, and in Latine *Onyx* and *Onychium*. *Description of the stone.*

Of its adulteration.

The want of price maketh these gemms seldome to be adulterated. That which hath the white distinctly from the black, is often adulterated, and sold for a *Camens*.

The *Onyx* of Dioscorides is the *Alabaster*, and this truly is very like to a mans nayl.

Of its names.

In Hebrew it is called $\square\eta\psi$, even as is the *Sardius* and *Sardonyx*. In Greek $\acute{\omicron}\nu\upsilon\chi$, in Latine *Onyx* and *Onychium*; in Italian *Nicolo*. In Germane *Onykel*, in English the *Onyx*.

Its kinds.

There is an *Arabian Onyx* which is black with white zones or circles, by reason of which many colours are caused in it. Then there is a *Camehuia* or *Memphitis*, with a black zone or circle under a white zone or circle.

The difference
betwixt the
Sardonyx,
Chalcedony,
and *Onyx*.

The difference betwixt the *Sardonyx*, *Chalcedonie*, and *Onyx* is this: The *Sardonyx* hath the red colour of the *Sardius* or *Corneolus*, and the white colour of the *Onyx*. The *Chalcedonie* hath a red and black colour confusedly mixt together. The *Onyx* hath onely the perfect beauty of a mans nail.

Boetius saith it is called an *Onyx*, when the black appeareth as it were under a white. The true *Onyx*, saith Boetius, is a gemme that hath many veins compassed about with milkiish zones or girdles, and meeting in a pleasing concord and consent.

Its properties.

Dioscorides speaketh strange things of the vertue of this stone, as that it doth excite passions, move melancholy, and stirre up strifes, if it be worn about the neck as an amulet, and that it doth hinder the fits of the *Epilepsie*.

Dignities

Dignities and vertues.

This stone likewise, for its sacred use, hath been of great esteem, as Job 28. 16. It was much esteemed amongst the Jews, happily because it was commanded of God to be set in the shoulders of the Ephod, with the names of the twelve Tribes engraven in it, as Exod. 28. 20. It is sometimes of so great magnitude, that little pillars have been made of it. There are six little pillars of it in *Basilica S. Petri Romæ*. At *Colonia* in the temple *Trium Magorum*, there is one broader then the palm of the hand. Plinie l. 37. c. 1. saith, that *Polycrates* had a very fair *Onyx*. Not onely the beauty of this stone, but the bignesse of it maketh it of very great price. *Appianus* testifieth, that *Mithridates* king of *Pontus* had two thousand cups of this gemme amongst his householdstuff.

See Andr. Bæc. in annot.

CHAP. XXVI.

Of the Agate.

THE *Agate* is a pretious half-transparent gemme, full of pleasure, because of the variety of its colours: and besides the various delightfull colours it is replenisht withall, it hath also many times divers shapes in it, wrought in excellent workmanship by the skilfull hand of nature, and that very admirably landskep-wise, so that in them may be seen woods, rivers, trees, living creatures, fruits, flowers, herbs, and clouds, and all this not very obscurely neither.

It is reported of king *Pyrrhus*, that he had an *Agate* *History.* in which, by the handy-work of nature, was to be

Of semi-transparent Gemms. Part II.

seen the nine Muses, and Apollo holding his harp.

It is reported of *Camillus Leonardus Pisarenfis*, that he saw one which resembled in it self seven trees standing upon a plain.

Of its adulteration.

It is adulterated with glasse mixt with divers colours: but this is easily known: for the *Agate* is so hard that it refuseth the file, and for its excellent smoothness dust will not stick to it.

Its names, and places where it is found.

In Hebrew it is called יָסָפִיר, as Exod. 28. 19. which by some Jews is interpreted the *Topaz*. It hath its names from the resemblances and forms which it hath in it: as *Leuchachates*, *Dendrachates*, *Corallachates*. The fairest of it is brought from *India* and *Sicily*, it is also found in *Germany* in the Landgrave of *Lichtenbergs* countrey, not farre from the town of *Schindthutten*: and in *Bohemia* not farre from *Argentine*, a *Leuchachates* sprinkled with black specks of a purplish colour, very good and excellent is found.

Its nature and properties.

It is said to be good against poyson and contagious. It is reported of the eagle, that it doth carry this gemme into her nest, to secure her young from the bitings of venomous creatures. So *Andr. Bacc.* and *Dioscorides*.

Its dignitie and value.

This stone hath been of esteem for its sacred use,
it

it was one of those stones which were set in the enclosures of the breast-plate of Judgement, Exod. 28. 19. Anselmus Boetius saith, that he saw one that was twice as broad as the palm of a mans hand, in which was artificially graven the image of Julius Cesar and his wife, which was sold for 8000 crowns. It hath been used for the adorning of those crowns, which in former times were called *precaræ corona*.

CHAP. XXVII.

Of the *Oculus Beli*, *Oculus Cati*,
and *Leucophthalmos*.

THe *Oculus Beli* is a half transparent gemm, the body of which is white, and in the midst of it there appeareth a black, like unto the *pupilla*, or the sight of the eye, which is compassed about with an *iris*, so that it seems to be a very eye. This stone in ancient times was by the Assyrians dedicated to their God: this for its raritie is more worth then an *Achate*. *Leucophthalmos* is like unto the eye of the wolf: it cometh of the Greek words *λύκος* a wolf, and *ὀφθαλμός* an eye. Sometimes they have more eyes, and then they are called accordingly, as *Triophthalmos*.

CHAP. XXVIII.

Of the *Jasper*.

THe *Jasper* is a pretious gemm diaphanous and perfectly transparent, by which the glory of the
The Jasper is here put amongst the half-transparent stones, according to the custome of the ancients, who did not take this stone for a perfect diaphanous stone, as here I have described it out of Holy writ.
 light

light of the New Jerusalem is discovered to us in the book of the Revelations, in these words; *And the Angel carried me into a very high mountain, and shewed me the holy city, New Jerusalem, coming down from God out of heaven, having the glory of God, and its light was as the light of a stone most pretious, even like a Jasper clear as Crystall.* Revel. 21. 10, 11.

The divers species of this stone, and the difference of Simplicists and *Lapidists* about it, do make it very difficult to be known. The Greek name of it (*viz.*) *Isidis* according to the interpretation of *Isidore* signifieth green, and such a green as doth illustriously shine forth with a very supreme viridity or greenesse of glory. *Epiphanius* and *Pliny* take the *Jaspis* for a gemm of an obtuse green colour, like an *Emerauld*, yet not being so transparently glorious, and altogether so translucent as the *Emerauld* is: this saith *Pliny* in his thirty seventh book, where he reckoneth up no lesse then seven kinds of this gemm: yea, ten kinds of it. The third of these kinds he saith is like to the air and therefore is called *aerizusa*, and of the Greeks *Boria*, because it is like to the morning of an autumnall heaven; and the tenth kind he saith is like to *Crystall*; which concurreth with the first description of this stone out of Holy writ; nevertheless he preferres the purple *Jaspis* above all other kinds; and next this, that which is like to the rose; and then that which is of the viridity or greenesse of the *Smaragde*, to which, in his enumeration of the species of this gemm he doth give the first place. *Dioscorides* speaketh of seven kinds of it, and giveth likewise the first place

to the *Emerald Faspis*; the second to the *Crystall Faspis*; and the third to the *aërizusa*. Rulandus speaketh of two and twenty kinds of this gemm, and giveth the first place to the *Emerald Faspis*, which he saith is on one part, of the colour of an *Emerald*, on the other part, of a ceruleous colour. Now in the midst of this confusion which ariseth from the multiplicity of *species*, whither should we flie but to the truth to discover truth? and this telleth us, as before it hath been shewed, that it is a diaphanous stone, glorious, and full of light; and if so, then all the *species* so farre as they partake more or lesse of tincture, or more or lesse of colour, so farre they fall short of the excellency, beauty and glory of the best *Jasper*. It is not Isidores interpretation of the word *Faspis* that makes it like an *Emerald*; nor the Ancients various opinion about it, as that the purple one is the best, or that the rose coloured one is the best, or that the *Emerald Faspis* is the best, that makes it either to be the best *Jasper*, or at all a *Jasper*. But it is the truth of Scripture, which they were unacquainted with, which will convince all their opinions; that the true *Jasper* is a diaphanous perfectly transparent glorious gemm, resembling the beauty and glory of the light of heaven. This confusion here of the *species* of gemms hath brought this gemm amongst the half transparent gemms, which is as excellent and full of esteem as the best of the most glorious perfectly diaphanous gemms, and ought to be preferred with them in the highest esteem.

Its foyle or tincture.

This gemma or stone of price, for its fulness of glory, and excellency of beauty, cannot admit of any foyle or tincture to commend its beauty with-all.

Of its adulteration.

It can hardly for its excellent glory be adulterated, but the adulteration will be discovered in the defect of beauty, if the adulterate gemm be compared with the true *Fasper*. Its *species*, all of them for the most part admitting of more or lesse tincture or colour, may for this cause admit of many adulterations. * It is ascribed by way of glory, to the king of Egypt, that the first adulteration of the *Fasper* by tincture was from him; but the glory of this praise if I be not mistaken, (*vertitur sibi in vitium*) doth even become his shame.

* See Andr. Bacc. in Annot. de Nat. Gem.

Its names.

In Hebrew אֶשְׁפָּר or אֶשְׁפָּרָה as Exodus 28. 20. Rabbi Jonathan a Jewish interpreter, calleth the אֶשְׁפָּר or אֶשְׁפָּרָה $\text{אֶשְׁפָּרָה פִּנְתֵּי לֵבָיִם}$ that is, *Lapis Pantherinus* because some of them are spotted with spots like a Panther. In Greek *Ἰάσμις*. In Latine *Faspis*. In English *Fasper*. In Dutch *ein Fasp*. In French, Spanish, and Italian *Faspé*.

The kinds of it.

There are divers kinds of this stone saith Dioscorides, Andreas Baccius, Wurtzung, Pliny, and Mar-

Martinus Rulandus. The true and best *Jasper* is that which hath in it such illustrious glory as that it may be said for the excellency of its beauty to resemble the light of heaven.

The kinds of these stones according to Pliny are these. 1. A green translucent *Jasper*, in glory like to an Indian *Emerald*. 2. A gray *Jasper*. 3. An airy *Jasper* called *aërizusa*. 4. *Carulea*. 5. *Purpurea*. 6. *Carulea* with a non-resplendent purple colour. 7. *Indica*. 8. *Turbida*. 9. A violet-coloured *Jasper*. 10. A *Crystall Jasper*.

To these Martinus Rulandus addeth another kind, namely, the *Turchus*, which gemm we do now call *Turchoys*, and the Dutch *ein Turckes*, and *ein Orientalischer Turckis*.

Of the places.

The *Jaspers* are found in *Persia*, *Cappadocia*, *India*, *Cyprus*, in *Phrygia*, *Thracia*, *Sardis*, in *Germany*, and in the parts of *America*.

Of its nature and faculties.

Galen testifieth, that if a green *Jasper* be hung about the neck in the manner of an *Amulet*, so that in a direct line it may respond to the stomach, it will strengthen and confirm the naturall faculties of the stomach. It is reported of therosse white *Jaspers*, that they do preserve men from the injuries of the water and from drowning: divers do very superstitiously attribute much power and vertue to them, if figures, images, and characters be engraven

upon them. The effects which by this means are wrought in or for any, Andreas Baccius doth attribute to the devil, in his Annot. *de nat. Gemm.* It is reported of it that it doth cure Epilepsies, by Nonus an ancient Physician.

Of its dignities and value.

This gemm as many before mentioned is of much esteem, for that it hath been of sacred use, and for that by the glory of it, we have many heavenly things resembled to us in Scripture. This is one of those gemms which was to be last set in the fourth row of gemms, with one of the names of the twelve Tribes engraven in it, in the ouches of gold upon the breast-plate of Judgement, Exodus 28. 20. This is the first of those gemms by which in the New Testament the glory of the first foundation of the wall of the New Jerusalem is discovered to us; the structure and built of which wall is also there said to be of *Fasper*, and the light of the city of the New Jerusalem, is there likewise said to be like a stone most precious, even like a *Fasper*. Rev. 21. 10, 11. and 21. 19. In the fourth chapter of this book, to discover the glory of him that sat upon the Throne, it is said that he was like a *Fasper*, Revel. 4. 3.

The *species* of it, for their beauty are of very great esteem. * Baccius saith that the pleasure which may be seen in a *Fasper*, the beauty of which ariseth from the mixture of many excellent greens, reds, and whites, cannot be exprest: the excellent figures which some of them do make representation of are wonder-

* *Andr. Bacc.*
c. 8. *de Nat.*
Gemm.

wonderfull : In some of them may be seen after the manner of the cleare clouds of the aire; and in some like mountains, rivers, fields, and divers living creatures, and sometimes like armed men trampling upon serpents: which, saith Baccius, do assert and testify their power and vertue against all enemies: hence in the book of the Revelations it is said, that the foundations and wall of the New Jerusalem are of *Jasper*, to signifie saith Baccius as S. Hierome interpreteth it, that the power of the *Jasper*, and the greatnesse of divine wisdom and knowledge, doth overcome and beat down all the power of false doctrine.

The best *Jasper*, for its excellent beauty and great glory, is of very high esteem, and of great worth and value.

CHAP. XXIX.

Of the Heliotrope.

THe *Heliotrope* is a half-transparent green gemme with sanguine specks, growing to the *Jasper* and the *Prasins*. The name *Heliotropus* is derived from two Greek words, the one $\eta\lambda\iota\omicron\varsigma$, which signifieth *the Sun*, the other $\tau\rho\pi\acute{\iota}$, which signifieth *a turning*; as if did it turn according to the motion of the Sunn, as the herb *Heliotropium* or the *Marigold* doth open and shut with the rising and setting of the Sunne.

*Description
of the stone.*

Its names.

In Greek $\eta\lambda\iota\omicron\tau\rho\pi\acute{\iota}\sigma$, in Latine *Heliotropus*, in English *Heliotrope*, and the Orientall *Jasper*.

The places.

It is found in *India*, in *Ethiopia*, in *Africa*, in *Cyprus*, in *Germany*, in *Bohemia*; and that of so great a masse or bignesse, that oftentimes grave-stones to cover dead bodies are cut out of it; and yet (which is very strange) Anselmus Boetius saith, this stone is known to very few. *Boet. p. 130.*

Its nature and properties.

It is reported of it, that if it be put into water which is directly opposed to the beams of the Sun, it will make the water boyl, and cause it to be resolved into a cloud, which not long after is dissolved into dropps of rain. And that if it be put into fair water, opposed to the beams of the Sunne, it doth change its beams, and by the repercussion of the aire, seem to shadow the clearnesse of its rayes; and so to induce a sanguineous colour in the aire, as if the Sun by the interposition of the body of the Moon, did suffer an ecliptick darknesse. Martinus Rulandus and Baccius do say, that this power and facultie is proper onely to the *Ethiopicke Heliotropes*. Hence this metrick elegancie of *Marbodæus*:

*Ex re nomen habens est Heliotropia gemma,
Quæ solis radiis in aqua subiecta Batillo
Sanguineum reddit mutato lumine solem,
Eclipsimq; novam terris effundere cogit.*

There is a report, which ariseth of the impudence of Magicians, that if this gemme be anointed with the juyce of a *Marigold*, it will cause him that carrieth it to walk invifible. So saith *Plinie*.

This

This gemme is said to be endued with the same faculties with the *Jasper*; and to procure men riches, and good report amongst men; and to be good against venoms and fluxes of blood. *Plinie lib. 37. cap. 10.*

CHAP. XXX.

Of Lapis Nephriticus, or the Nephritick stone.

THe *Lapis Nephriticus* is a hard semi-transparent gemme, of a white greenish colour. *Boet. 131.*

Of its kinds.

Anselmus Boetius and others reckon both the *Heliotrope*, and also this stone amongst the *Jaspers*; betwixt this and the *Jasper* he puts onely this difference, namely, that this is the harder, and cannot so exactly be polish'd as that may be.

Boetius saith that he had a *Lapis Nephriticus* like unto *Crystall*, perspicuous, with a little white cloud, which grew to one of the green ones.

They are sometimes found growing to the *Jasper* and *Prasium*; but for the most part they are found like unto whietstones in the fields, in so great lumps as cups may be made with them. *Boet. 131.*

The places.

They are found in *Spain*, and *New Spain*.

Of its nature and properties.

The *Nephritick* stone is a stone of no gratefull aspect.

aspect; & though Boetius doth here place it amongst the half-transparent gemms: yet other jewellers and expert Simplificists & Lapidists do not reckon it of any such esteem. It is called the *Nephritick* stone, from the power and facultie which it is (as Authours say) endued withall against the pains of the reins, and to expell the stone and gravell; and this it doth (as is reported) by being worn on the arm or wrist. This use the Indians make of it. What being thus worn it doth effect upon its subject, is by the power of an occult qualitie. Wecker saith, that a Noble-man well known to him, had an excellent *Nephritick* stone which he wore at his arm, by the power of which he voided a very great quantitie of gravell, so great as that he feared lest he should suffer harm by so large an expulsion of it in so short a time; and for this cause to avoid the evil, he laid away his *Nephritick* stone, and was never troubled with his gravell afterwards. He likewise reporteth, that the *Dutcheffe* of *Bejar* being three times in a very short space troubled with *Nephritick* pains, made her self a bracelet of this stone, and wore it continually; and from the time of her wearing of it, for the space of ten yeares and upward, she was not vexed nor troubled with her pain. *Weck. lib. 1. de Lap. pretios. Idem dixit Nic. Monardus.*

CHAP. XXXI.

Of the Malachite or Molochite.

THe *Molochite* is a half-transparent gemme of an obscure green colour, much like the herb called *Mallores*. The *Germans* say that this gemme imitateth

teth a *Saphire* in a dilute or cleare green, which some affirm to be a kind of *Turchoys*. *Bacc. de nat. gem. c. 29.* This gemme Boetius saith is adorned with white veins, mixt with a sky-colour, and sometimes specked with black.

Of its names.

In Greek it is called *μαλαχίτη*, that is, *Malva*, in Latine, *Molochites*, and *Malachites*.

The places where it is found.

It is brought from *Arabia*. In a tower of a temple at the gate of *Tangra*, there may be seen *Molochites* of a good large bignesse: It is found also in *Cyprus*, and in *Germanie*, chiefly about *Misnia*, and the Province of *Tirol*. Sometimes in the largeness of the palm of a mans hand, and sometimes so big and large, as that little cups may be made of it.

Its vertues.

It prevaileth by a singular power against all perils, dangers, and infirmities that infants are subject to, and it secureth them from vain fears, and addeth strength unto them; so saith *Plinie*, *l. 37. c. 8.* and *Solinus* in *Polyhistor. c. 36.* and *Baccius de nat. gem. c. 29.* *Crato* saith that this stone hath an excellent facultie in the strengthening of the stomach. It is said to preserve children from perillous and hurtfull chance, and cureth them of their familiar disease, namely convulsions. Superstitious persons do engrave upon it the figure of the Sunne, to preserve them from incantations, and wicked spirits, and venomous creatures. *Ansel. Boet. c. de Moloch.*

It is said to cure the *Cardialgia* and the Colick, it may effect this by its purging faculty: for Boetius saith, that if it be taken in the weight of six grains, it doth purge like Antimony.

CHAP. XXXII.

Of the Turkey stone.

Description
of the stone.

THe *Turky stone* is a very hard gemm of no transparency, yet full of beauty, as giving the grace of its colour in a skie colour out of a green, in the which may be imagined a little milkish perfusion; Indico will give the perfect colour of it, and Verdigrease hath a perfect resemblance of it; and a clear skie colour free from all clouds will most excellently discover the beauty of a *Turky stone*. Non-transparent stones, and wholly shadowed gemms admit of no foyle, therefore nothing concerning them must be here expected. The *Turky stone* is throughout of the same beauty, as well internally as externally; it wants no help of tincture to set it off in grace, the constancy of its own beauty without any extraneall help is the support of it, and beareth it up against all defects. * It is an excellent gemm of a most simple substance, in every part like it self, most pure in colour, and without spot, and the constancy of its beauty is a sufficient commendation for it self.

* *Andr. Bacc.*
c. 30. de Nat.
Gem.

Of the imitation of the Turkey, and the correction of its colour if it vanish.

The Venetians have a very pretty way by which they will neatly imitate this gemm, and that is with Venice glasse, prepared with a convenient skie-coloured tincture.

If at any time there do appear any kind of vanishing of colour in the *Turky stone*, it may be recovered by rubbing it with oyl of Vitrioll.

Of its names.

In Greek *βίσα*. It is in Latine called *Turchus*, *Turchicus*, *Turchina*, *Turchesia*, *Turchoys*; Pliny calleth it *Boreas*, which Martinus Rulandus maketh the sixth kind of *Fasper*, which he saith is ceruleous like unto a serene heaven, and is called *Turcica* in Latine, and in Dutch *ein Orientischer Turckise*. It is of the Greeks called *Faspis AeriZusa*; Mesues calleth it *FeruZegi*. It hath its name *Turcicus*, either because of its excellent beauty, or because it is brought from the Turks, saith Baccius.

The kinds of it.

There are saith Baccius two kinds of it, an Orientall one, which is of tendency to a skie colour rather than to a green; and a Spanish one, of an obscure green colour, with an ingratefull aspect, and seldome without a chink or vein.

Rulandus maketh this stone, the sixth kind of *Fasper* of a skie colour, which Pliny reckoneth as the third kind of *Fasper* and calleth it *aerizusa*, but

in Greek it is called *Βίαια*, because it hath a clear representation of the serene morning of an Autumnall heaven. Dioscorides even as Pliny, reckoneth *aerizusa*, as a third kind of *Jasper*.

The place.

History.

The Orientall ones are brought from *Persia* and from the *Indies* into *Turky*, and into these parts; these are seldome bigger then a filberd and very rarely seen so big as a walnut. It is reported of the great Duke of Hetruria that he had one of this bignesse, on which was engraven the image of C. Julius Cesar, which he kept in his repository as a gemm of very high esteem.

Boetius saith that he never saw one of these gemms bigger then a filberd.

I was once master of one of the best Orientall ones of a very pleasing delightfull beauty, about the bignesse for breadth of the nail of a mans little finger, and for thicknesse of the small kernell of a filberd, in which was engraven a Lion Rampant with the year of its engraving, and so excellently as that no whit of the beauty of the gemm was in the least kind empaired by it.

Some of the Orientall ones are said to keep their colour perpetually, and those are called *Turkies* of the old rock, and some of these gemms are said by degrees to loose their colour and to grow greenish, and these are called *Turkies* of the new rock.

There are also Occidentall ones, or Western *Turchoys* which are more greenish then ordinary, or else whitish more then is meet, and these are found in *Spain*, *Germany*, *Bohemia* and *Sibesia*. The

*The nature, faculties, and properties of
the Turchoys stone.*

Many strange things beyond faith are reported concerning the vertues of this stone, which nothing but excesse of faith can believe.

As that if it be worn in a ring of gold it will preserve men from falls, and from the bruises proceeding of them, by receiving that harm into it self which otherwise would fall upon the man: yet these vertues are said not to be in this gemm except the gemm be received of gift.

It is likewise said to take away all enmity and to reconcile man and wife.

Rueus saith that he saw a *Turchoys* which upon the death of its master lost all its beauty and contracted a cleft, which a certain man afterwards buying at an under price returned again to its former glory and beauty, as if saith he, by a certain sense it had perceived it self to have found a new master. The same Authour saith of it, that it doth change, grow pale, and destitute of its native colour, if he that weareth it do at any time grow infirm or weak; and again upon the recovery of its master, that it doth recover its own lovely beauty which ariseth of the temperament of its own naturall heat, and becometh ceruleous like a serene heaven.

This stone is very delightfull to the eye and is thought much to strengthen the sight, because it doth not by its over brightnesse too much dissipate the visive faculty, nor by its overmuch obscurenesse too much concentrate the visive faculty.

Baccius in his Annotations saith that it is sweat as a gumm out of a black stone in Persia, which the Indians call *Perose*; the true *Turchoys* is known by the change of its colour; in the day time it is excellently ceruleous or skie coloured; at night time by candle light it is green.

* Another way of triall of it is this, The lower part is sometimes black, from whence issue small veins which do insinuate themselves into the *superficies*.

A third way which is very much commended for this purpose; dissolve *calx* in water, then anoint the *superficies* of the gemm with it, or put a little of this dissolved *calx* upon the *superficies*, and if upon this the *calx* receive a tincture, or colour from the gemm; this will shew that gemm to be a very excellent *Turchoys*.

Of its dignity and value.

The excellency of the colour of this stone doth set its price, and the breadth of it doth much enlarge the price.

It is of great esteem with Princes and much pleasure they take in its beauty; and it being set in gold they wear it on their fingers.

The Mauritanians use this stone in physick and call it *Peruzegi*, or *Perozaa*. Mesues useth it in *ele-ctuario de gemmis*, as Garcias *ab horto* hath observed.

Those *Turchoyses* that are of the bignesse of a filberd, and have an excellent colour like unto a serene skie, and not at all obscured with any black veins, are sold for two hundred crowns a peice and more. The breadth of the body of this stone doth appoint the

* See Andr. Bacc. in Annot. de Nat. Gem. cap. de Lap. Turch.

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the price. That which is of the exact colour of *verdgrease*, or like unto a serene sky, without any black veins, is excellent. *Anselm. Boet. pag. 137. c. 17.*

CHAP. XXXIII.

Of the Lapis Lazuli.

THe *Lapis Lazuli* is a fair ceruleous, blue, or sky-coloured stone, void of all transparency, and adorned with many bright golden specks. *Description of the stone.*

It differeth, saith Boetius, from the *Lapis Armenus* in this, that this stone is very hard, and the *Lapis Armenus* is easily broken and powdered, and wants with its softness the ornament of bright gold specks.

Its names.

In Greek *λαζυλι λίθος*. In Latine *Ceruleus lapis*, and *Cyanus lapis*; in Italian, *Azzuro ultra-marino*; the Arabians call it *Hager* and *Hazul*. Of this stone is made the excellent azure that is more pretious then gold. It is also sometimes made of the *Lapis Armenus*. The *Lapis Lazuli* is a pretious gemme, which being polished as other gemms, is wont to be set in gold rings, and worn on the finger.

Epiphanius doth reckon this gemme as a kind of *Sapphire*, which Plinie calleth *Sapphirus Cyanus*, or the male *Sapphire*, and saith it is a ceruleous gemme, gloriously splendid, with many bright golden starry specks. *Plinie lib. 37. c. 9.*

Of the places where it is found.

It is found in *Africa*, *Asia*, and *Germanie*, in the gold.

Of semi-transparent Gemms. Part II.

gold mines; the *Lapis Armenus* is the mother of it. It is also found in *Egypt*, *Cyprus*, *Scythia*. It is oftentimes of so great bignesse, that spoons and hafts of knives are made of it. If this stone being put into the fire doth not change its colour, it is called *Lapis Lazuli fixus*, of which is made that pretious blue colour called azure.

Its nature, properties, faculties.

Dioscorides saith that this stone hath a repercussive faculty. Other Physicians have found by experience, that it hath in it a purgative facultie; and that it is good in all melancholy diseases, and the *Lapis Armenus* hath the same faculties.

Antonius Musa Brassavolus in *lib. de med. purgant.* saith, that the greatest *dosis* of it is a drachme, and that it doth purge excellently well without any torment at all. He prescribeth it in pills after this manner. *R. lapidis Lazuli preparati ʒj, Camphoræ, Anisi, Cinnamomi, Zinziberis, Mastiches ana gr. 6. Misce, & cum succo salviæ vel diacatholico fiant Pilulæ quinq;.* *Dosis est à ʒij ad ʒj, aut in pilulis, aut in pulvere, aut in jure, aut in aqua Boraginis, aut in conserva Boraginis, aut in vino Cretico.*

Its dignity and value.

A pound of the fragments of this stone is worth ten crowns, to make azure of, (*Boet. 140.*) and if it be very good, ten ounces of azure may be extracted out of it by three severall extractions: The first of which extractions will be five ʒʒ in weight; every ounce

ounce of which azure will be worth twenty crowns : The second extraction which may amount in weight to a matter of three ounces will be worth five or six crowns an ounce : and the third extraction which may amount in weight to two ounces, may be worth in value a crown and a half, or one crown.

CHAP. XXXIV.

Of the Lapis Armenus.

THE *Lapis Armenus* is a fair, ceruleous, sky-coloured stone, of the same kind that the *Lapis Lazuli* is, but very fragil, and much softer, void of all golden veins or bright aureous specks, and loosing its colour in the fire. Description of the stone.

Of its names.

It is called *Lapis Armenus* in Latine, from the place whence it is brought, namely *Armenia*. In Italian *Verdazure*, in Arabick *Hager armeni* : in Germane *Bergblau*. in French *Verdazure*, that is, blue mixt with green. This *Lapis Armenus* being printed on a table, by age degenerateth into a green colour, which is contrary to the nature of a true azure, for that remaineth constant and permanent, without any alteration by continuance of time.

Its places.

There is an Orientall *Lapis Armenus*, and a Germane *Lapis Armenus* : The Orientall one is said to be known from the Germane one, in that it looseth not its colour, but becometh more illustrious and

glorious in the fire. This is meant of the *Lapis Lazuli*, and not of the *Lapis Armenus*. The *Lapis Armenus* is found in *Utlabade*, a famous city in the kingdom of *Balaguar*. It is brought from *Venice* and *Germany* into these parts.

Its nature, properties, and faculties.

This stone is esteemed good against all melancholy diseases. Unwashed, it purgeth by vomit without any difficultie; but it being washed, purgeth by stool: for this purpose, that it may lay down all irritation of the stomach to vomit, it must be washed fiftie times: *Boetius. Trallianus lib. 1. c. de melancholia*, saith that it doth not at all in its purging torment or trouble the partie that taketh it. The dose of the unwashed stone is from ℥iij to ℥iij. more or lesse according as the disease, or age, or strength of the person will bear. The dose of the washed stone is from ℥v to ℥vi. in warm water; for by this means it doth not a whit trouble or molest. Or it may be taken in form of pills after this manner:

R. hiera picra ℥β, Epithymi ℥β, Agarici ℥iij, Scammoneæ ℥i, Caryophyllorum ℥i, fiat pulvis tenuissimas, & cum melle rosato aut Cydoniato incorporentur, Dosis est à ℥ii ad ℥iij: hæc pilula Catholica sunt, sive Panchymagogæ: for they purge all humours, but especially adust and melancholy humours.

Guanerius doth prescribe this stone in the form of a powder, in this manner:

R. Lap. Armeni quinquagies lota ℥ij. Croci gr. 10. Saccharis ℥i. fiat pulvis, sumat in aquæ Saccharatæ quantitate sufficiente pro una dosi. Aetius lib. 2. c. 47. saith, that

that it is good to give five grains of this stone, to those that are troubled with melancholy, or to children in pectorall diseases, or to Phreniticks or Epilepticks. or,

R. Centaurei minoris M. iij. Coque in lb. iijß. aqua majorana ad. lb. i. Decocto colato adde ʒi, Lapidis Armeni.

See Dioscorides, Cardanus, Garcias *ab horto.*

The colour of this is extracted as the *Lapis Lazuli*, and is then called Azure.

CHAP. XXXV.

Of the Astroites or Starre-stone.

THe *Astroites* or *Starre-stone*, is saith Boetius, a dark gemm of a whitish colour full of starres, in the stead of which, sometimes it hath the appearance of Roses, and sometimes of waves of water; and sometimes all these representations are to be had in one and the same gemm. He taketh it for a kind of *Achate*, and saith that these stones are to be found sometimes in the bignesse of a mans head. Marfilius Ficinus calleth it the *Dracontium*, and thinketh that it is taken out of the head of the Indian Dragon. But this is thought to be nothing else but a fallshood, and a story of it, raised by impostours to advance the price of it.

Andreas Baccius saith of the *Astroites* or *Asteria* that it cometh near to the form of *Crystall*, and sheweth by repercussion a certain light in a pale colour, in which internally some certain rayes after the manner of starres do appear. And in his An-

notations he saith it is a hard stone, which being circumverted, sheweth the sunne shining within it. Cardanus saith that the *Stellaris lapis* doth differ from the *Astrites* as not being pretious at all nor perspicuous, but onely a stone distinguished with many spots of the colour of ashes.

Martinus Rulandus calleth this the *Astroites mar.*, and saith it is of the figure of a half globe, full of ashy coloured starres.

Its names.

It is called *Astroites*, *Asteria*, and *Astrites*. In Dutch it is called *ein Siegestein voller sternem*; and *ein pater noster, von solchen siegesteinen*, and that because in old times they made use of this stone to number up *Pater nosters* by. In English it is called the *Starre-stone*.

Its kinds.

Of this stone Boetius maketh three kinds, which he representeth to the eye in their severall forms and figures. The one of which is round and hath no starres at all in it: The other is full of starres and round as the former. And the last is composed of divers starres united together in longitude which may easily be separated either with the hand or by the help of some instrument, and in their separation they shiver into the form of starres. And this last Anselmus Boetius calleth *Asteria vera*, or the true *Starre-stone*. as *lib. 2. de Gemm. p. 151. C. de Astroite*.

Martinus Rulandus doth also make three kinds of this stone. The

The first a male one full of starres.

The second a female one, in which is many resemblances of the worms which do destroy the herb Rocket and Colewort, which are commonly called Canker-worms and Palmer-worms: in this he saith there is no appearance at all of any of the starres of the masculine one.

The third kind he calleth *globuli ex Astroite.*

Of its nature and properties.

It is reported that four grains of this stone in some appropriate water, is excellent good against the plague, and to expell worms out of the body.

Cardanus reporteth wonders of the *Stellaris lapis*; which Andreas Baccius in his Annotations attributeth to the male *Astroite*. Cardanus saith that it being put into a vessel of vineger doth move it self and imitate the goings of creatures: this stone and the power and faculties thereof, was in times past saith Cardane very well known to Rabbi Aben Ezra. The progression or motion of this stone in a vessel of vineger or wine he attributeth to the vapour of the wine or vineger, which penetrating the stone, and finding not speedy issue out of it again, doth by impulsion move the stone too and again as being a light substance. Which wonder of motion as before I said Andreas Baccius in his Annotations attributeth to the male *Astroite*, and the cause of this motion he rendereth from *Agricola* thus, the starres being rare and of a thin substance and the *intermedium* grosse and thick; the *meatus*, passages, or porosities of the starres do imbibe or drink in the

vineger or wine, and afterwards expell the vapour or air of the wine or vineger which in its expulsion doth move the stone, and thus dissolve the wonder and take away the cause of admiration.

Some attribute unto it a power of obtaining victory for him that weareth it against his enemies; hence the Dutch call it *Siegstein*. It swelleth and enlargeth it self in its growth, in the form and figure of an eye. It is said to be good against Apoplexies, and by the very touch of the body to hinder the generation of worms.

Its dignitie and value.

These stones are sometimes found of very great bignesse, and sometimes no bigger then the breadth of a mans nail, but of excellent beauty, and esteemed worth two crowns a piece, these for their beauty are oft set in gold and worn on the finger.

CHAP. XXXVI.

Of the Garatromo or Toadstone.

*Description
of the stone.*

THIS stone is of a brownish colour somewhat tending to rednes; convex on the one side, & on the other side, sometimes plain, sometimes hollow.

Some say this stone is found in the head of an old Toad; others say that the old Toad must be laid upon the cloth that is red and it will belch it up, or otherwise nor; you may give a like credit to both these reports, for as little truth is to be found in them as may possibly be: Witnesse Anselmus Boetius in *lib. 2.* in the chapter of this stone; who saith that to try this experiment in his youth he took an old Toad
and

History.

and laid it upon a red cloth and watcht it a whole night to see it belch up its stone, but after his long and tedious watchfull expectation he found the old Toad in the same posture to gratifie the great pains of his whole nights restlessnesse, and since that time he taketh that stone which is called *Garatrono* or the *Toad-stone*, to be an obscure *Starre-stone*.

Its names.

This stone is called *Batrachites*, and *Brontia*, and *Ombria*, and *Garatronium*, *Lapis Borax*, *Lapis Bufonis*, *Lapis Rubeta*. In French, *un Crapant & Crapaudine*. In Germane *ein Krattenstein*. Some in Latine call it *Crapontina*. In English a *Toadstone*.

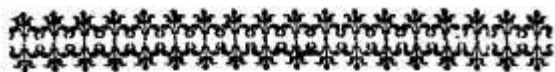
Of its kinds.

Baccius maketh two kinds of this stone: One of a whitish brown colour: Another of a black colour with a bluish eye.

This stone saith Boetius is sometimes found of the bignesse of an egg, and those that are so great, are sometimes brownish, sometimes reddish, sometimes yellowish, sometimes greenish.

Some are no bigger then the nail of the hand and these by Jewellers are taken for the true *Toad-stones*.

It is reported of it that it is good against poyson if it be worn so as it may touch the skin, and that if poyson be present it will sweate, and that if any inflations procured by venemous creatures be touched with it, it will cure them. So saith Weckerus, Lemnius, and Baccius.



The third part of the Lapidarie.

Of non-transparent and common
stones.

CHAP. XXXVII.

Of the Corall.

THUS having made progresse with much perspicuitie through all the *species* of diaphanous & perfectly transparent gemms; and through all the *species* of semi-transparent, or half-transparent gemms, (amongst which some non-transparent gemms, for their excellencie, beauty, value, and worth are reckoned, as the *Turkey-stone*, *Lapis Lazuli*, and a kind of the *Astroites*, and some others,) which are wont to be enclosed in gold, and for their beauty and esteem worn on the finger, or elsewhere about the body for its greater grace and ornament: we are at length arrived at the third part of our labour, which is a port or haven that lets me into the consideration of stones that are not called by the names of gemms or pretious stones, though many of them for their beauty and vertue, if we consider them joyntly, are comparable to some of the beautifull diaphanous stones, and excelling in beauty and vertue many of the semi-transparent or half-

half-perspicuous gemms: and with these, to the consideration of stones commonly so called, as they follow in their order after these stones of external beauty, which for their softness are of no great value or price.

In the order of these stones, the first place the *Corall* challengeth to it self, as being more beautifull then the rest, and as full of vertue as any. This is a bud of maritime beauty, and the delight of children, the best of natures buds, as some-what furthering the spring-tide of their growth. The *Corall* is a plant of natures setting in the sea, which though being covered with the waters of the sea, it be green and soft, yet so soon as it is elevated above the waves, and discovered in the region of the aire, it altereth its colour, and changeth its nature: its colour from green to a very noble & beautifull red; its softness into the compacted firmness and solidness of a stone, beautifull and lasting; by the operation of the aire encompassing its sometimes soft and flaccid substance. It is (under the waters of a brinish sea) a thriving growing plant, sprung up by nature with the ornament of many pretty branches, which is no sooner violently forc'd from the place of its growth, and brought to light above the overflowings of the waters, but it blusheth at the injurious hand that offereth violence to its secret, silent, tender, spreading growth.

The *Corall* is a delightfull, pleasing, beautifull, red, hard stone, resembling a plant, adorned with many pretty branches. Description of the Corall.

Ovid. 4. Metamorph. concerning the originall of the *Corall* hath this fiction: Medusa's head being cut

A fiction of
the originall
of the Corall.

off, Perseus took it and put it in the sand of the sea-shore with leaves and green rods under it, which rods by the touch of the head, grew hard and into a stony substance, which when the sea-nymphs saw, they took of those rods and spread them abroad in the sea, which became the seeds of *Corall*. Hence saith Ovid,

*Nunc quoque Coraliis eadem natura remansit,
Duritiem tacto capiant ut ab aere: quodque
Vimen in aequore erat, fiat super aequora saxum.*

& in lib. 15.

*Sic & Coralium quo primum contigit auras
Tempore, durefcit: mollis fuit herba sub undis.*

Of its adulteration.

In imitation of Nature, Art doth oft excellently find out a way of resembling this stone. The manner of it is this; Take the shrub which groweth out of the old wild Pear-tree, which is scarce a foot high, and cover it over with a very hard emplastre made of *Minium*, *Colophonia*, and *White-wax*: this being perfectly dry, must be levigated or polisht by the fire, and it will be so exactly like unto the *Corall*, that it will hardly be discerned from it. Or take the fine powder of *Corall*, and the white of an egge, and mix them together, and with them *Minium*, and then presse them in forms.

Its names.

In Hebrew it is called רַמּוֹת *Ramoth*, as Job 28. 18. In Greek λιζόδενδρον and ποργεία, thus Metrodorus calleth it, of the fiction of its originall from the

Cor-

Gorgons head. It is called of Plinie l. 32. c. 2. and of some others besides him, *Corallum*, *Coralium*, *Cirralium*, and *Curalium*, for that it is pluckt up with nets, or cut up with an iron instrument. It is also called *Dentrites* of Plinie. It is also called in Latine *Corallium*, and *Corallium*, and *Sandastrum*. In Arabick *Bassad*, *Besed*, *Bassash*, *Belisis*. In German *Coral*. In Italian *Corallo*. In French *du Coral*.

Of its kinds.

Dioscorides, Plinie, Cardane, Rulandus, and Boetius reckon three kinds of *Corall*; red, white, and black; yet all these are of the same kind of greenesse while as yet they remain in the place of their growth, under the waters of the sea.

The best of these kinds is the red *Corall*, which imitateth the naturall *Minium*. Next this is the white *Corall*, and then the black. There is also *Corall* yellowish, & brownish, and greenish, and reddish, falling much short of the beauty of the first *Corall*.

Of the places.

Some of these kinds of *Corall* are found in the West parts of England, about *S. Michaels Mount*. There is *Coralline* found growing to Oyster-shells, muscle-shells, and to stones in the sea, under a place called *Reculvers* and *Marget* in the Ile of *Thanet*, and in other places along the lands from thence to *Dover*.

Its nature and properties.

The *Corall* is cold and dry, and astringent. It is reported

ported of it, that it will be of greater beauty if a man wear it, then if a woman; and that it will contract ungratefull spots, if the possessour of it be dangerously sick. By the change of its colour it is said to foreshew ensuing diseases. If it be worn in the manner of an amulet, it is said to drive away fears, and to keep men from enchantments, from poysoning, from epilepsies, and from the insultings of devills, from thunder, from tempests, and from all manner of perills: for this cause idolaters were wont to dedicate this stone to Jupiter and to Phœbus. This stone hath been thought of power to hinder the delusions of the devil, and to secure men from *Incubus* and *Succubus*. So Ansel. Boetius, & Dioscorides. Arnoldus *de villa nova*, adviseth to give to new-born children as soon as they are come into the world, before they have tasted any thing, ten grains of the powder of *Corall* in the mothers milk; by which means he saith they shall be preserved all the dayes of their life from the epilepsie. The same remedie Camillus Leonardus Medic. Pisauriensis, saith that he hath often experienced. There is a composition made of it, which is called *Diactrallium*, which is said to be very effectually against vomiting, and to cure all fluxes of the belly. The description is this:

Tabellæ Corallæ.

*A confectio
in Lozenges.*

R. Corallorum Rubcorum preparatorum ℥ii. Margaritar. preparatar: ℥i. boli armeni ℥ss. ligni aloes ℥i. sacch. albissimi dissoluti in aqua rosarū & cinnamomi tenuioris quantum sufficit; fiat confectio in tabellis. Or this may be used in powder. and the alone powder of the *Corall* is given in the weight of half a drachme against
all

all contagions, plagues, poysons, and maligne fevers, and to recreate the heart. The *tinctura Corallorum*, and the *sal Corallorum* are endued with the same power and faculties: of which we may have an occasion to speak hereafter, according as our successe is in this present undertaking.

Its dignitie and value.

An ounce of *Corall* beads were wont to be sold for a crown; sometimes for more, sometimes for lesse. Anselmus Boetius saith, that he saw one of these shrubs adorned with many branches, which was esteemed worth an hundred crowns. These are of great esteem with Princes. If the *Corall* at any time fail in its beauty, it may again be restored by rubbing it with *Nitre*.

CHAP. XXXVIII.

Of the Amber, or Succinum.

THe *Amber* or *Succinum* is a fat bituminous substance, congealed into a stone of a white colour, and that through the power of heat. It is rare and pretious, endued with the vertues of Balm, and breatheth forth the fragrant smells of odoriferous spices.

Description of the stone.

The common sort of *Amber*, which is fittest for ornament and externall deckings of the bodie, is a through-transparent stone, usually full of small notes or atomes, of a yellow or gold colour; in which sometimes there are found small creatures, as worms, and flies, and the like. The Greeks have a

A fiction.

*A fiction of
the originall
of the Amber.*

pretty fable or fiction concerning the generation and originall of the *Amber* or *Succinum* which they call *Electrum*, as that it should have its first originall from the tears of Phactons sisters, who the fiction saith, lamenting the death of their brother Phacton who was slain with lightning, were turned into poplar trees, and poure forth perpetuall tears by the river Eridanus, otherwise called Padus, which afterwards do *coire in unam massam*, and thus by concretion or congelation they do become the *Electrum*, *Succinum*, or *Amber*. Hence this of Ovid in his fable of the *Heliades*, 2. *Metam.*

*Inde fluunt lacrymæ; stillatâque sole rigescunt
De ramis Electra novis, quæ lividus annis
Excipit & nurbus mittit gestanda Latinis.*

Others have feigned that this stone is generated *ex urina lyncis* covered over in the sands. Epiphanius doubteth much concerning the word *Lyncurius* (which is interpreted *Amber*, or *Succinum*, and by some called *Lycurus*, but with very little correspondency to the Hebrew text) what *species* of gemm or pretious stone it ought to be taken for. * Cardanus saith that there is great contention amongst Authors concerning the *Succinum*, or *Amber*, but he himself asserteth it to be a bituminous substance congealed into a stone.

* Cardan. l. 9.
de Mistis.

Of its adulteration.

I have thus spoken of the adulteration of gemms and stones of worth, immediately after the discovery of the true stones, least the distance of place, or other intermediate things should breed some confusion to
my

my reader, and by this means take him off from the diligent consideration of the differences of true gemms and stones from their falsifyings and adulterations. They being thus directly opposed together they will the more easily be discovered one from the other.

The adulterations of it are these.

Take *Succinum melleum*, and the white of an egg, and Saffron, and Gumme-dragon, these mix together with knats or flies, or chaff, or such like things and a little powder of the true *Amber* to give it an odoriferous smell, and then by the power of heat bring it into a hard substance like amber. So Cardanus *lib. de Mistis*.

Or take the fine powder of *Cryfall* and the white of an egg and beat them together, adding a little water mixt with saffron, put this substance into a glasse and evaporate all the moisture till it come to a full consistence, and then form it, and by drying of it you will have your factitious *Amber*, and if you desire to have a diaphanous body strain it before you boyl it. So Mizaldus.

Or take liquid Mastick, strain it that it may be purged a little, and then adde of the root of *Curcuma* and so make a *species* of *Amber*. So Baptista Porta in *Magia sua. c. 1. de Succino*.

But the best, most profitable, and excellentest of a'l other artificiall wayes is this; dissolve as many small pieces of *Amber* as you will, and coagulate them again into a masse, and he that can do this may indeed be called *verus Physicus*. This, saith Boetius, may easily be done, but such knowledge as this is meet

Of non-transparent and common stones. Part III.

meet for none but the wise. Thus much may suffice to be demonstrated concerning the adulterations of this stone, that pious inquirers into nature may not be deceived. He that desireth to know more of this, let him reade the history of *Andreas Libavius*.

Of its names.

In Greek it is called *Ἡλεκτρον*, because it being rubbed and warmed, doth as it were entice and attract to its self small bodies, and little things, as chaff, and straws, and the like, after the same manner that the Load-stone doth attract the iron. In Latine *Ambra*, and *Ampar*, and *Succinum Orientale*, thus the Romanes call it saith *Andreas Baccius*, because it is concrete or congealed of a juyce, which floweth not from trees, but from the bowels of the earth. In Persian *Carabe*. In the language of Ham or Egyptian language *Sacal*. In French *de la' Ambre*. In Germane *Agtestien*, and *Augstein*, and *Achstein*, and *Borastien*. Of the Scythians *Sacrium Lyncurium*, and *Langurium*.

Of its kinds.

Ansel. Boetius maketh foure kinds of this stone:

1. White, which is very seldome transparent, but rare and more pretious then any of the other kinds, breathing forth pleasing, sweet, fragrant, spicie, odoriferous smells. This is endued with the vertues of Balsame.

2. A yellow *Amber* like unto gold, for the most part transparent, in which is usually found many notes, and little creatures, such as are flies.

3. An

3. An *Amber* adorned with various colours which is sometimes transparent, and sometimes opaque or obscure.

4. A dark and spotted *Amber* with very many ignoble colours.

Martinus Rulandus doth also thus reckon four kinds of this stone.

1. *Succina gravida*, of which he saith there are seven kinds.

2. *Succina liquida* or *Pellucida*, of which he saith there are thirteen kinds.

3. *Succina crassa, non Pellucida*, of which he reckoneth eleven kinds.

4. *Succina mixta cum aliis succis*, of which he sheweth ten kinds: but I omit these till I have an occasion for addition.

Of the places.

The *Amber* is found in *Prussia, Dania, Suevia, Livonia, Finland*, sometimes in the bignesse of the head of a man.

The white is seldome found but in small pieces.

Pliny writeth that a piece was brought to Rome of thirteen pound weight of the yellow *Amber*.

Of its nature and properties.

The white *Amber* is astringent and temperately hot, the yellow *Amber* hotter.

The white odoriferous *Amber* is esteemed the best for Physick use, and thought to be of great power and force against many diseases, as against the *Vertigo* and *Asthmatick Paroxysmes*, against *Catharres*, and

Arthriticall pains, against diseases of the stomach, and to free it from stuffings and putrefactions, and against diseases of the heart, against plagues, venoms and contagions. The Florentine Physicians are wont to prescribe some few drops of its oyl to be taken in wine for the former purposes.

It is used either in powder, or in oyl, or in *Troches* either in the distempers of men; or of women, either married or unmarried, either with childe or without, or in the distempers of children.

Its dignity and value.

Princes were wont in former times to cause the *Precariae Coronae* to be made of the yellow *Amber*, which were little Crowns or Coronets of glory, given to those that did obtain masteries and set upon their heads in token of their victorious prizes. It hath been also used of women for Crowns; and it is now used in Neck-laces and Bracelets. It is oft made into small cups about the bignesse of a mans fist, which are valued at ten and sixteen crowns a piece.

If the *Amber* be found with great variety of shapes in it, it may be valued saith Boetius at the pleasure of the possessor.

The *Amber* is used to make *vernix* withall.

The white *Amber* though it want the externall glory and transparency of the yellow *Amber*, yet is it best for physick use, as being endowed with a pleasing odoriferous smell, and carrying away the balsamick vertues and all the efficacy, power, and faculties from the rest.

CHAP. XXXIX.

Of the Gagate, or Stone-coal, as some think.

THe *Gagate* is a black stone of a polish'd splendour, generated (as saith Rulandus) of an oily substance, which floweth forth of the rocks called *Petroleum*, or of *Naphtha subtilis* which is much like *Petroleum*, if not the same: or of the naturall liquid *Bitumen*, which Wurtzung, a Germane Physician, taketh to be the same with *Naphtha* and *Petroleum*.

*Description
of the stone.*

Of its names.

It hath its name *Gagate* from the river *Gagas* in *Cilicia*. Cardan saith, that of the *vulgus* it is called *Ambra Nigra*. In Dutch *Schewarfer Agstein*: In French *Agathe*: In Spanish *Elzavaie*. It is of some called *Succinum Nigrum*.

Its kinds.

The best *Gagate* is that, which being put to the fire burneth like *Bitumen*. Of this Rulandus maketh these kinds, 1. The *Thracius lapis*, called in Dutch *Schewars Agstein*. 2. *Lithanthrax*, which is a stone of an earthy colour, congealed of *Naphtha* or *Bitumen*. 3. The *Stone-coal*.

The places.

The *Gagate* is found in *Britain*, in *Sicily* and in *France*.

Its vertue.

It is reported of it, that the wearing of this stone

Cardan. lib. 5.
de mistis.

doth secure men from nocturnall fears, from *Incubus* or *Succubus*, or the *night-mare*; and from evil spirits; and that it being drunk, will shew whether a maid have her virginity or no. *Ansel. Boet. c. de Gagate.*

Of its dignitie and value.

This is a stone of small value, and hath been used, saith Boetius, as black patches to make women seem beautifull. Cardanus *in lib. de mistis*, saith that it hath been used to reckon up *Pater nosters* withall: for the Saints in former times were wont to wear beads and bracelets of it, to number up their prayers by, and thereby to keep the account of their devotions. Cardane saith, that pilgrims were wont to bring from *Spain* the images and consecrated pictures of Saints, made of the black *Gagate* or *Stone-coal*. *Card. l. 5. de mistis.*

CHAP. XL.

Of the Lithanthrax, or Coals.

Description of
the stone.

THe *Lithanthrax* is a stonie coal of the kinds of *Gagate*. It is a bituminous substance, which by the power of heat being concocted, is brought into the hardnesse of a stone.

Their names.

* See Martin.
Ruland. Lcx.
Chym.

In Greek they are called *άνθραξ*. There are light ones which are called by *Theophrastus *γαστήρι*, or *Carbones leves*. There are also *Carbones graves*, called in Greek *άνθραξ*: in Latine *Lapidei Carbones*: in Germane, *ein Stein-kal*: in English *Coals*.

Places

Places.

This is found in the country of *Liege*, and in those places where the *Gagate* is found.

Its use.

The common use of coals is so well known to all, as that I shall not need to spend further time in the discourse of it. See *Boet. c. de Lithanthr. & And. Libav.*

CHAP. XLI.

Of the Glossopetra, or Tongue-stone.

THe *Glossopetra* is a stone of the similitude of a Tongue.

The place.

It is found in the Alume-mines near *Luneberg*.

Its vertue and value.

It is reported that the wearing of this stone will preserve men from poysons, and from witchcrafts; and that if poyson be present in the room where it is, it will sweat. *Boet.* It is a vile stone of very small worth.

*Description
of the stone.
Plin. lib. 37.
cap. 19.*

CHAP. XLII.

Of the Alektorius or Cock-stone.

THe *Alektorius* is a transparent gemme, of the bignesse of a Bean, found in the stomach of a Cock, like to Crystall or limpid water.

Its names.

In Greek *ἀλεκτορία*: In Latine *Alectorius*: In Germane, *ein Cappaunstein*: In English, the *Cock-stone*.

Its kinds.

The best (saith Plinie) is transparent like limpid water, or a Cryfall. Boetius saith, that some of these stones are like to obscure Cryfalls; and that there are others of a brownish colour; and that there are some found distinguisht with sanguine veins.

Its propertie and value.

It is reported of this stone, that it doth by a Solary power which it hath in it, make him that weareth it victorious over his enemies. See Solinus *cap. 4.* and Dioscorid. *l. 2. c. 43.* It is said of Milo Crotoniates, who lived in the times of the ancient Tarquinius, that by the help of this stone he became invincible. As long as the Cock hath this stone in his stomach, it is reported that he never drinketh. Boetius saith, that the certain experience of the Neotericks hath found this stone good to allay the heat of the heart, and to quench thirst if it be held in the mouth. L. Lemnius and Albertus Magnus have written concerning the vertue of this stone.

It is reported of it, that if it be held in the mouth it procures victory: and that it hath a power of stirring up of love and lust; and of making constant and eloquent, and of securing from all manner of perills.

This stone is very rare and pretious, and may therefore be prized and valued at the pleasure of the possessour.

CHAP. XLIII.

Of the Chelidonium Lapis, or Swallow-stone.

THe *Chelidonium* is a gemme, saith Rulandus, that is found in the stomach of Swallows of the first brood, if they be taken and opened either in the increase, or before the full of the Moon, as saith Weckerus.

There are two kinds of it, saith Boetius, one black, the other red. But of this and some others that follow, I shall not now endeavour to further my discourse, but deferre that, till I may see what the successe will be of these first undertakings. Concerning this stone, see Wecker. *l. 1. Antidot. special. de lap. minus pretios. alterantib.*

Divers things have been spoken of the great vertues of this stone, of which hereafter I may speak. In the mean time confesse with Boetius, pag. 172. and Albertus Magnus.

CHAP. XLIIII.

Of the Dracontia, Draconitis, or Dragon-stone.

PLinie saith that this stone is found in the brain of Dragons, *Plin. l. 37. c. 10.* But I omit further discourse concerning it till a more convenient opportunity.

CHAP. XLV.

CHAP. XLV.

Of the Snake-stone, which the Bohemians call
Duchanek.

BOetius saith they are much deceived that take this for a stone, seeing they are nothing else but round glasses, formed on purpose to wind thread upon; and for this purpose, for the more celeritic of winding, they have a hole in the midst of them, by which the Bohemian women hold them upon their fingers, during the time of their winding thread upon them. These are called *Verticels* from their use, as being fit and meet to turn to and again. These are used by the Bohemian women, and in *Belgia*, where Anselmus Boetius saith he hath seen many of them.

Verticels.

CHAP. XLVI.

Of the stone called the Snakes-egge.

THIS stone is a kind of *Toadstone*, and may be referred to those that are called *Brontia* or *Ombria*, of which see *Plinie l. 29. c. 3.*

CHAP. XLVII.

Of the *Carp-stone*.

THE *Carp-stone*, or rather the *Carp-bone*, for (saith Boetius) it is a triangular bone of a yellowish colour, found in the beginning of the back-bone of a *Carp*.

The powder of this being taken in drink, is said to be good against the stone.

CHAP.

CHAP. XLVIII.

Of the Lapis Caymanus.

THIS is a stone like to ordinary stones found in rivers; and it is also said to be found in the stomach of a Crocodile. Description of the stone.

The Indians and Spaniards are wont to use these stones against quartane fevers. *Anselm. Boet. p. 177.*

CHAP. XLIX.

Of the Palumbella or Dove-stone.

THE *Palumbella* is a stone found in the belly of Stock-doves, which they are said to swallow for their healths sake.

CHAP. L.

Of the Swine-stone.

THIS is a stone of a reddish colour and bitter taste, which is said to be found by a river neare *Malacca*, in the gall of the greater sort of swine. *Boet. 178.*

CHAP. LI.

Of the Lapis Cenaar.

THESE are those stones of which those beautifull cups and dishes are made, which are commonly called by the name of *China* vessells. They are pleasant and of great esteem, and much used for ornament.

*Of the Lapis Bezoar.**Description
of the stone.**Cardan. de lap.
lib. 7.**Andr. Bacc.
lib. de nat.
gemm. c. 34.*

THE *Lapis Bezoar* is (saith Boetius) a stone blackish out of a green, about the bignesse of a filberd, round, and hollow in the midst, in the cavity of which is contained a little sandie powder. Cardane saith, it is a soft stone of an ashy colour, about the bignesse of a filberd, egregiously powerfull against all venoms.

Andr. Baccius saith, that the *Bezoar* stones are externally rough, of a green colour, w^{ch} out of a brown is reddish, as if it was partly tinctured with rednesse by bloud, and partly with an humour from the creature in which it is found. Claudius Richardus in his description of this stone *ad Archiepisc. Strigoniensem*, saith, The *Bezoar* is a round long stone, in form like an acorn without its cup, outwardly like polisht iron, but inwardly of an ashy colour. It is not very ponderous, because full of pores, and therefore it is easily broken. It hath no arenositie or harsh sandinesse at all with it; if it be taken betwixt the teeth, it doth dissolve like a crust of bread, softened with the salivous humour of the mouth: it hath in it no favour as some say, but Richardus saith, it hath with it a gratefull favour. It is generated in the stomach of a wild goat in the Spring-time, and in Summer-time, of the juyce of such herbs as they then live upon; at which times onely these stones are to be found in these creatures.

*Description of
the creature in
which the Bezoar
is found.*

The creature in which they are found is of the bignesse of a goat, which hath long yellowish hair,
as

as fine as cotton. So Baccius: but Wecker *in lib. de lap. pretiosis* saith, that the creature of which the *Bezoar* cometh, is a kind of a goat which is found in Persia, sometimes *rufi coloris*, that is of a yellowish red colour, and sometimes of another colour; one of these creatures of the yellowish red colour, he saith he himself saw at Goa.

Of its adulteration.

This stone being a stone of value, it is to be feared, saith Andreas Baccius, least merchants for lucre sake should adulterate it; which adulterations he saith may thus be discovered: the naturall *Bezoars* are rude, unequal, unpolished, as those stones that are found in the bladder of a man: these he saith will leave no tincture upon the palm of the hand, if they be there rubbed with a little moisture from the mouth; but the artificiall ones will leave a tincture if they be so rubbed. The adulterate ones or artificiall ones are also made in form like a kidney or a pigeons egg, and these are externally smooth and polished, and they being broken, their pieces are hard *instar terra coctæ* or *gypsi*, that is, like clay or earth dryed and hardened by the power of the heat of the fire.

Boetius saith that the artificiall or factitious *Bezoar* doth usually contain in its cavity either chaff or herbs; and sometimes like small seeds.

A sure way to try a factitious one is this, give some few grains of it to a dog or such like creature that hath taken poyson, and if it be a true *Bezoar*, it will quickly discover its vertue in prevailing against the poyson; if otherwise, its want of vertue, power

and prevalency will very easily discover it to be not of nature, but of art.

It is reported of the eyes of the *Hyana* that they are of a stony substance; Pliny taketh the *Bezoar-stones* saith Martinus Rulandus for these, and therefore calleth them *gemma Hyania*. Martinus Rulandus taketh the *Bezoar* for the congealed tears of a Deare: The Eastern Deare he saith in the Spring time are wont to search the Caverns for serpents, which when they find, they are wont to snuff them up into their nostrils and thus purge themselves of their annuall distempers; which so soon as they have snuffed up or eaten, strait-way they flie to the rivers or waters, and in them overwhelm themselves to the very head, so long, as till they perceive the power and force of the venome of the serpents which they have taken to be overcome: In this mean season by the power and force of the venome, their eyes shed forth abundance of tears which are coagulated and congealed about them; these coagulated dryed tears Martinus Rulandus calleth the *Bezoar*, that soveraign medicine and antidote against all poysons.

Its names.

The Hebrews call it כִּלְדָּוֶר, that is, *Dominus veneni*. The Caldeans call it by the same name. It is thus called by the Hebrews and Chaldeans from *Bel Dominus*, and *zaar venenum*: because it doth bear sway over poysons, and tame and master their malignity and unbridled violence. It is thought by some, to have its name from the Persian word *Pazar*;

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or *Pazan*, which signifieth a goat. The Arabians call it *Hager Bezaar*, that is, *Lapis Bezaar*, v. *Serap. lib. agg. c. Hager-bezaar*. In Latine *Lapis Bezoar* and *Bezaar*, and so also in English.

The kinds of it.

Boetius saith that there are 1. *Bezoars* that are black. 2. *Bezoar-stones* that are yellowish. 3. *Bezoar-stones* that are brownish. 4. *Bezoar-stones* that are greenish. 5. *Bezoar-stones* that are blackish out of a green.

The greenish ones, and those that are black out of a green are the best of all others, these if they be held to the tongue or put into water, will so dissolve that there shall be nothing of sand remaining. These and the other are all hollow in the midst, and have a little sandy powder or dust w^{ch} they contain in their cavity, which powder will dissolve even as the stone. *The best Bezoar-stones.*

The places.

This stone is found in the *East-Indies*, and also in the *West-Indies*. In the *East-Indies* in these parts, in *Persia*, *India*, *China*, *Cathay*; it is brought to *Constantinople* out of *Persia*, and by *Calecuth* to *Portugal*. It is found in *Peru* and other parts of *America* or the *West-Indies*.

Of its nature and properties.

Claudius Richardus in his epistle where he describeth this stone *ad Archiepiscopum Strigoniensem*, (which epistle may be read in *Andrea Baccii lib. de nat. gemmar.*) maketh mention of one *Dominus*

Of non-transparent and common stones. Part III.

Scander a noble man who belonged to the Emperour, that being troubled with a very grievous disease at the seventy fifth year of his age, was cured by the onely use of *Bezoar* taken in the quantitie of five grains in a spoonfull of wine. The same Authour saith, that *D. D. Staphylus* was cured of an acute fever joyned with malignity, by the use of seven grains of this stone in a spoonfull of wine; half an hour after the taking of which, he took half the yolk of an egg; about an hour after the taking of which, he took a good draught of the whey of goats milk, as having eaten very little for fifteen dayes together; and there followed upon this, a purgation for six times, of much cholerick matter.

It is supposed that no other remedy is so forcible against poyson as is this.

The dose of it is usually four grains, more or lesse either in *Carduus* water, *Baulm* water, or *Clove-gylo-flower* water.

Anselmus Boetius saith that the powder contained in the cavity of the stone, is of more force then the stone it self.

It is used against palpitations of the heart, against melancholies, against quartan fevers, against epilepsies, against venoms, contagions, and all pestilentiall diseases, and against all chronick and diurn diseases.

Cardanus saith of the *Bezoar*, that it is *lapis ab omnibus laudatus, & à nemine fermè cognitus*, that is, much extolled in the mouthes of all men, but known to very few; which (saith he) *Scribonius Largus* though *Cesars*, or the Emperours Physician, writeth

to be the tears of Deares found in Sicily, when as it is manifest that it is found in Pely a Countrey of the East-Indies. Of which saith Baccius, though the originall of it be not fully manifest to us, yet the effects and admirable operations of it hath many times been confirmed to us by experience, and ought not therefore to be doubted of us: * yea rather saith he, in my judgement it is a very wholesome, blessed and friendly medicine to humane nature, discovering its wonderfull operations, by an unspeakable sympathy, and not because it is either hot or moist, or cold or dry, for it is insipid and void of all tast and favour. The greatest dose of it he saith, is the weight of ten grains of wheat in its ordinary dispensation; and doubts not but it may be taken without perill even of those that are in health, in the weight of one or two scruples.

* *Andr. Bacc.*
c. 35. *de Nat.*
Gem.

The great Turk is wont to take it often every year though he be never so healthfull. *History.*

It is given to children against worms, and in malignant fevers, saith Montanus and Amatus. It is said to be good in almost all diseases, especially in malignant, contagious diseases, and ver. o. m. o. u. s.

Its dignitie and value.

It is of great esteem amongst Princes and great men, for the admirable vertues which are taken to be in it, in so much as one of the biggest of the best may be sold at the pleasure of the possessour. Of so great esteem it hath been, as that Almira a great Prince of Arabia, being cured of a mortall disease by it, did afterwards give for one of the best
of

of these stones, a great, magnifick, princely house of his which he had at Corduba, as is affirmed by Authors.

The small ones, saith Boetius, which are not of greater weight then a drachme, are sold in the lower Germanie for two ducats apiece.

CHAP. LIII.

Of the stone in the gall of an Ox.

THere is, saith Anselm. Boetius, a stone of an obscure yellowish colour, which is said to be found in the gall of an Ox, and to be good against poysons.

CHAP. LIIII.

Of the Aetite or Eagle-stone.

*Description of
the stone.*

THe *Aetite* is a white stone which is found in the neast of an Eagle, about the bignesse of a Peach or Apricock: it is weighty and hath an hollownesse or cavitie in it, in which is contained an hard stone like a *Crystall*, called *Callimus*.

It is reported of the Eagle, that it bringeth this stone into her neast, to help her the more casily to lay. So Boetius. Renodeus *lib. 2. sect. 2. de materia medica*, saith, that some think that the Eagles bring these stones into their neasts, to temper the heat of their eggs: others for its colours sake, as Rulandus.

Of its names.

In Greek it is called *ἀετός*. In Latine *Aetites*, and *lapis Erodialis, vel Aquileius, & Enydros*, which as
the

the other kinds are pregnant either with gravell, or earth, or with a *Cryſtall* ſtone; ſo is this with water: inſomuch as if it be put (ſaith Rulandus) into a warme place, it will ſweat. Hence theſe verſes,

Perpetui ſletūs lacrymis diſtillat Enydros,

Qui veluti ex pleni fontis ſcaturigine manat. that is,
Enydros tears eternall doth diſtill,

From it as from a fountain they do drill.

It is alſo in Latine called *Lapis pragnans*, becauſe of the matter which it doth contain in its cavity. In Germane *ein alderſtein*: in Engliſh the *Actite* or *Eagle-ſtone*

Of its kinds.

Martinus Rulandus ſpeaketh of ſix kinds of this ſtone. The firſt of which kinds he ſaith, *Pragnans eſt lapide*, inſomuch as it being ſhaken, doth ſound as if it had a ſtone in the wombe of it, that is, in the cavity or miſt of it. This kind of the *Actite* is a round ſtone, and hollow as a nutgall.

2. The ſecond kind is pregnant with earth, or a whitish clay; it is called *Agyptitis*, and of Dioſcorides *Geodes gemma*.

3. The third kind is pregnant with water. Of this Plinie *lib. 37. c. 11.* and Solinus *c. 40.* ſay, that it is alwayes of an abſolute rotundity, and of a ſmooth candour or whiteneſſe; but it being moved, there floweth too and fro a liquor, after the ſame manner as the liquor of an egge will move too and fro within it, if the egge be moved. Solinus ſaith of this *Actite* called *Enydros*, that it doth ſo abundantly ſweat, aſthat a man would think it did contain in it a ſpringing fountain of water.

4. The fourth kind is pregnant with gravell or little stones.

5. The fifth kind is pregnant with a *Chelonitis*.

6. The sixth kind is pregnant with a white flint: one of this kind Martinus Rulandus saith he found at *Albis*, which when he had opened; he found in the matrice, wombe, or cavity of it, a white flint, round and long, and very hard.

Plinie reckoneth foure kinds of *Actites*. 1. A little soft *Actite*, which containeth in its wombe or matrice a pleasant, white, clayie substance: This is supposed to be a female *Actite*, and is easily broken. This is that stone which is called *γαιδός Dioscoridis*, or the *Geode of Dioscorides*: in Germane *Erdstein*.

2. The second kind he saith is like unto the first, but bigger and easily broken, and this containeth in its cavity a pleasant sand, or little stones like flints, or the *Conchylis*, which are little fishes like muscles.

3. The third kind are called *Taphiusinus*, this is white and round, and found in rivers, and containeth in its wombe or matrice that beautifull *Crystall* stone which is called *Callimus*.

4. The fourth kind is taken for a male kind, this is very hard, and like unto a nutgall: this containeth in its wombe or matrice a hard reddish stone. This stone hath been of great esteem with Dioscorides.

Andr. Baccius saith, that some of these stones are found of the bignesse of Peaches, others of Apricocks, others in the bignesse of Pomegranates, and others of Melons.

Of the places.

The first kind, saith Rulandus, are found in *Sala*.
and

and *Albis*: and in a countrey which the Germanes call *Die Steuermarck*. The second of this kind are found in *Egypt*, and in *Dresden* in *Misnia*, and in *Saxonie*. The other kinds are found in *Albis*, and the former places.

Plinies first kind is found in *Africa*. The second in *Cyprus*. The third in *Taphiussa* neare *Leucas*. The fourth in *Arabia*.

Of its properties and vertues.

This stone is said to be good to facilitate the *partus*, and to cause speedy deliverance, if so be that it be bound to the left thigh of the woman in travail; and this it doth by an attractive facultie, very powerfully and with so much force, as that if it be not removed upon the deliverance of the child, or birth, it will endanger the *descensus uteri*. Franciscus Valeriola a French Physician, very erudite and learned, maketh mention of a strange accident that happened at *Valentia*, to the wife of *Ponsonus Jobertus* a citizen of that citie: The time of her labour being come, to facilitate her bringing forth, there was tied to her thigh a great *Aetite* stone, which through the forgetfulness and imprudence of those that tied the stone to her thigh, was left tied in the foresaid place, after the woman had brought forth her child; which remaining so some few houres, caused a *lapsus* or *descensus uteri*; and through this in conclusion the death of the sick partie.

History.

*Antr. Bat
c. 38. de N
Gem.*

It is likewise reported of this stone, that if it be bound to the left arm *gravidæ mulieris*, of a woman with child, that it will hinder abortion and all miscarriage

riage of her birth, and the *lapsus* or *descensus uteri*.

It is taken to be of a dry facultie, and endued with astringency. If it be worn upon the stomach, or betwixt the breasts, it is said of it, that it will strengthen a woman for the retaining of the birth, and delay the bringing forth. Some are of opinion that it hath a power of procuring love, of encreasing riches, and of making men victorious. Dioscorides saith that this stone hath a power of detecting thefts, if it be given to the party suspected to be eaten in bread. Hence arose this Proverb, *Acriticus panis huic porrigendus*, or, Give him some of the *Acritick* bread to eat.

History.

Petr. Bellonius *observ.* l. 20. c. 23. saith, that the Greek Monks called *Caloieri*, were wont superstitiously and wretchedly so to use this stone. The manner of it was this; They called together the suspected persons, and gave them some of the bread knead with the powder of this stone without any leaven at all in it, in such a proportion or quantitie as that they might well swallow, of which they gave thence to every person, and in the meantime they did murmur over many words, which charms by the power of the devil, their grand agent, was wont to work so effectually the third time, as that the bread would stick in the throat of the suspected person, and choke him: a remedie a thousand times worse when the disease. The necessitated person stealeth to supply his necessities, and these wicked wretches, to discover his theft, engage with, and take counsell of the devill to destroy him body and soule. They say that this stone driveth away serpents, but here I am sure is fell into the hands of serpents, even of a generation of vipers,

vipers, who made use of it to work the work of the old serpent, in the destruction of body and soul of man.

The Eagles being mindfull of the security of their young, are wont in the building of their nests ever to make up their structures with these stones; by this means hoping to secure their young from the annoyances of serpents. So saith Philostræus *lib. 2. c. 55. de vita Apollonii.*

CHAP. LV.

Of the Hematite or Bloud-stone.

THe *Hematite* is a common stone of an obscure red colour; so called from the Greek word *αἷμα*, which signifieth *sanguis* or bloud, and that not for its likenesse only, but also for its use, for as saith Dioscorides *lib. 5.* this stone hath a power of stopping fluxes of bloud. *Description of the stone.*

Its names.

In Greek *ἡματίτης*. In Latine *Hæmatites*. In Arabick *Sedeneg*. In Germane *Blutstein*. In English the *Bloud-stone*.

Of the kinds of it.

The *Hematite* is of kin to the *Load-stone*, and so of kin, as that Pliny *l. 36. c. 16.* calleth *Hæmatitem*, *Magnetem*, that is, an *Hematite* a *Load-stone*.

Of the *Hematites*, Rulandus maketh six kinds.

1. *Hæmatites fossilis*, of a full red colour, which is very much commended of Dioscorides. *l. 5. c. 90.*

Gemma, seu
Lapis Medus.

2. *Hematites niger* yielding a juice like saffron, this is much harder then the former, of this Rulandus saith, that without doubt, it is the *gemma* or *lapis Medus niger Alberti*, which being broken yieldeth a juice like in colour to saffron.

3. *Hematites fossilis purpureus* or the purple *Hematite*, which is found in mines.

4. *Hematites fossilis pulcherrimus* or the fair *Hematite*, this is used of Gold-smiths for the polishing of gemms: this likewise saith Rulandus is black, and as it were turbinated.

5. *Fossilis niger trichurus*, so called of Pliny l. 37. c. 10. because it being rubbed upon a whetstone doth yield three colours.

6. *Hematites pulcherrimus* or the fair *Hematite*, which resembleth in form a discovered brain, which form, saith Rulandus l. de Lap. I cannot sufficiently admire.

Pliny l. 36. c. 20. and c. 16. speaketh of these kinds of *Hematites*.

2. *Aethiopicus Hematites* which is profitable to the eyes; this is reckoned of the number of those that are called *Pancrestoi*, that is, of the number of those stones, or medicines which are said to be good against all diseases.

2. *Androdamanta*, or *Atrrodamanta Hematites*, which is of a notable hardnesse and weight, of a black colour drawing iron like a *Load-stone*, and being rubbed upon a whet-stone it doth yield a juice red like blood; to this responds the *Trichurus* of Rulandus.

3. *Arabicus*, rendring very little moisture upon the

the whet-stone, & that of a saffronish colour. To this respondeth Rulandus his second kind of *Hematite*.

4. *Hematites Elatites*, so called, whilst it doth remain * crude, but *colzum*, *dicitur alio nomine*, viz. * *Pliny l. 1. c. 16. Elatites cum crudus est. Coctus autem dicitur Mites*
miles; this is said to be good against *ambusta* or burnings, and it is much more profitable then the *rubrica* or okre, for all those evils against which the okre is used.

5. *Schistos* which rendereth a black juice on the whet-stone.

Of the manner of calcining these stones, and of the adulterating of them, and of their use Pliny writeth, and so likewise Dioscorides. *L.C.*

Of the places.

The *Hematites* are found in *Egypt*, *Gossaria*, *Media*, *Phasis*, *Hafsia*, *Geurus*, *Anneberge*, *Salsfeldia*, *Africa*; in *Cheruscis*, *Northusia*, *Halzeroda*, *Ethiopia*, *Arabia*; in *Fudetis montibus*, in *Salburgia*, in *Iena*, *Lybia*, and *Hispania*.

Boetius saith of the *Hematites* that they are sometimes of the colour of *Minium*, sometimes black, sometimes yellow, sometimes of the colour of iron, and sometimes they are found to have many bright streaks like *Antimonic*. p. 191. It is, saith Boetius, usually found about the *Okre* or *Iron-mines*; and of some the *Load-stone* is taken for an *Hematite*.

Of its nature and properties.

It is supposed to be of a cold and dry quality.

Trallianus saith that the powder of the *Hematite* given

Of non-transparent and common stones. Part III.
 given from a ʒ. to iiii ʒ. is of great power and
 force to cure a *Phthisis* or ulcer of the lungs, or the
Aqueductum, that is, a spitting of blood.

CHAP. LVI.

Of the Smyris or Emeri.

*Description
 of the stone.*

THe *Smyris* is a very hard stone of the colour of
 the rust of iron, with asperity and roughness
 joyned to its hardness; it tendeth in colour some-
 what to a blackness. Engravers of rings and such
 like artificers are wont to use this stone to expurge,
 and sometimes to cut other stones withall.

Its names.

In Greek *Σμυρις*. In Latine *Smyris: est lapis quo
 gemmas annularii exerunt: Dioscor. lib. 5. c. 116.* In
 Dutch *Schmergel*. In Italian *Smeriglio*. In French
Emeri. In English *Emeri*.

Its use.

It is used ordinarily to cut glasse withall, and to
 burnish jewels, and arms withall.

CHAP. LVII.

Of the Lapis Samius, or Terra Samia.

*Description of
 the stone.*

THe *Lapis Samius*, or rather *Terra Samia*, is a
 soft white light earth which is easily broken
 with the hand, and if it be touched with the tongue
 it sticketh very close to it; even like glew, saith Ru-
 landus.

Its names.

It is called *Samius lapis*, or *Samia terra* from the land from whence it is brought. It is also of some called *Collyrion*.

Its kinds.

Dioscorides writeth of two kinds of this earth.

1. White and not weighty described as before, called by some *Collyrion*.

2. *Crustacea* or of a crusty substance thick after the manner of whet-stones. These being calcined and washed like the *Eretriades*, are thought to be of the same vertues, power, and force.

Its vertues.

Lapis Samius is of an astringent faculty, and cold; therefore it is esteemed good against all fluxes, and inflammations of the *Testes* and breasts; and against poysons and stings of serpents; it cureth those that have taken *Cantharides*, saith Nicander in his *Alexipharmica*; it is used by gold-smiths to polish gold withall, and to make it look clear and fair. *Dioscor. L.C. Plin. l. 36. c. 21.*

CHAP. LVIII.

Of the Selenites, or the Moon-stone.

THe *Selenites* saith Andreas Baccius, is a kind Description of
the stone. of a gemm which doth contain in it the image of the Moon, and it doth represent it increasing and decreasing according to the increase and decrease of the Moon in its monethly changes.

Of its names.

In Greek *Σελωσία* & *Σελών*; that is as much as to say the splendour of the Moon, or a beam of the Moon; Bacc. Annotat. upon c. 23. l. de nat. gemm. In the same place also for its milkish colour which he saith is endued with pellucidnesse, it is called *ἀεροσταλίτις* that is, *spuma Luna*. The Romanes call it *Lunaris*. Some take it for a kind of *Marble*; others for a kind of the *Specularis lapis*. It may be, the earth *Selunisia* which is of a bright whiteneffe may be the same with this.

Dioscorides saith it is found in *Arabia*; and that it is endued with very great vertues; as of making trees fruitfull, and of curing epilepsies: he saith that in the night it will illustrate the place that is next to it: yet not by any transmission of light, but by the collection of light into its self.

CHAP. LIX.

Of Gypsum and Talcum.

THIS as I suppose is that which is called *Playster* of *Paris*, which is very well known in many places for its use in building.

CHAP. LX.

Of the Pumex or Pumefice-stone.

THE *Pumefice-stone* is a common spongy-stone well known to all men. The Arabians call it *Famechi* vel *fenec*. It is also called *Lapis Vulcani*.

CHAP. LXI.

Of *Lapis Judaicus*, or the Jew-stone.

THis stone is roundish in shape, like unto an olive, of colour white, and sometimes brownish, and is easily broken. *Aetius* calleth it *Lapis Syriacus*, others *Phrenicites*. *Plinie* for its fragilitie calleth it *Tecolithos*. It is found in India, and in Silesia. It is esteemed good against the stone in the bladder and reins, *Boetius* and *Dioscorides*.

*Description of
the stone.*

CHAP. LXII.

Of the *Morochthus*.

THe *Morochthus* is a white soft stone. It is good to make linen garments white withall, if it be first dissolved. It is said to be endued with a power of opening the pores of the body. *Dioscorides* saith it is found in Egypt, and Georg. *Agricola* saith it is found in *Saxony*, neare *Heldeshim*, where it is called *Milchstein*.

The *Galactite* is a kind of it, which is also called *Galaxius*: this is found in *Egypt*. The linen drapers with this stone do use to make their cloth white.

CHAP. LXIII.

Of the *Magnes* or *Load-stone*.

THe *Magnes* or *Loadstone* is a stone of a brownish colour, with a tendencie to a sky-colour, thick and not very heavy, which as saith *Rulandus*, doth by its own proper power and innate vertue, draw

*Description
of the stone.*

iron unto its self. Bœtius and Dioscōrides say, that this which is brownish with a tendencie to a sky-colour, is the best. But Mart. Rulandus saith that the best is alwayes of a sky-colour.

Its adulteration.

There is no fear of the adulterating of this stone, if naturally it be endued with such power, vertue, and attractive faculties as Authours relate and write of it; for though it is not altogether impossible to make by art a *Loadstone* in colour, form, and substance; yet is it altogether impossible for any man, to adde such power, vertue, and attraction to it, as naturally the true *Loadstone* is said to be endued withall. Though I confesse an Impostour may delude an unwary buyer of this stone, by an acquired attractive faculty, *scilicet mediante dæmonis pro tempore potestate.*

Its names.

In Greek Σιδνείτης and Ἡρακλείου λίθος. In Latine Galen, Nicander, and Plinie call it *Magnes*, which name by the two last named Authours is attributed to it, from him who was the first finder of its attractive power; namely, *Magnes* a shepherd of India, who was wont to keep his flocks about those mountains in India, where there were abundance of these stones. *Herculeus lapis* it is also called from its predominant power, by which it is said to draw iron to it self, which tameth all things. *Heracleus lapis* it is also called from a citie of *Lydia* called *Heraclea* by some and by others *Magnesia*, where the best of these stones are said to be found: hence this stone as some think had

had its name of *Magnes*; and hence these verses of Lucretius;

*Quem Magneta vocant patrio de nomine Graii,
Magnetum quia sit patriis in montibus ortus.*

Callimachus calleth it *Heracleotis*. Plinie *Siderites*. In Germane, *Magneth*. In Saxon *ein Segelstein*; and in Italian *Calamita Piodra*. It is from its use called *Lapis Nauticus*. In English the *Load-stone*.

The kinds of it.

Albertus Magnus *l. 2. Metal. tract. 3. c. 6.* saith, that in that age in which Aristotle lived, there were two kinds of *Load-stones* known: one kind which did direct or draw iron to the North, another kind which did direct or draw iron to the South. Plinie *L. C.* speaketh of five kinds of this stone: 1. *Magnes Aethiopicus*, which hath power not onely of drawing iron to it self, but also of an other *Load-stone*: hence these verses of Silius:

*Plin. lib. 36,
cap. 16.*

*Venero Aethiopes, gens haud incognita Nilo;
Qui Magneta secant: solis honor ille metalli,
Incoctum chalybem vicino ducere Saxo.*

2. The second kind is called *Magnesiacus*, it is in colour of a yellowish red and black.

3. The third is called *Echius*, and it is more of a yellowish red then black.

4. The fourth kind is a feminine *Load-stone*, it is black, and of no use.

5. The fifth kind is a white one of very little moment.

Cardanus *l. de lap.* maketh three kinds of this stone. 1. *Ferrugineus*, which is so called as being of

an iron colour. 2. *Candidus*. 3. *Candidus* distinguisht with light *ferrugineous* veins.

The places.

It is found in *Aethiopia*, *Macedonia*, *Bæotia*, *Alexandria*, *Troas*. In *Heraclea Lydia*, in *Germany*, in *Misnia*, in *Italie* in the mountains of *Viterbium*; in many iron mines, and the places neare adjoining.

Its nature and faculties.

The wisdom of man which hath much searcht and enquired into the nature of this stone, hath attributed its attractive power to the planets, and to the influences of the starres; and saith that it doth receive its vertue from *Luna* and *Venus*, which are both found shining in *Cauda Ursæ minoris*, in gradu 29. *Virginis*; Vide *Andr. Bacc. cap. 2. de nat. Gemm.*

The cause of the attractive facultie of this stone, is, as Authours say, that it may provide it self with a *pabulum* or fit nourishment of its substance; for this cause saith Cardane, it doth draw iron to it self: for stones live, and have need of nourishment for their augmentation and conservation. The cause of such mutuall embraces, Boetius also doth attribute to their likenes of nature, by reason of which they are pleased to be assimilated into one substance and likenesse: therefore doth Boetius say of the *Loadstone*, that it doth draw the iron as *sibi simile*, or for its conservatiō or nourishment: for if you cover over the *Load-stone* with filings of iron, the *Load-stone* will grow more lively, as receiving a nourishment from such filings; and the residue of the filings will be changed into rust.

rust. Martinus Rulandus saith, that as by a naturall power and force, it doth draw iron and liquor of glasse, and concord with these, so likewise by an antipathy and discord it doth mainly disagree with onions and garlick, and with a *Diamond*, insomuch as if these be but within the touch of a *Load-stone*, or neare the *Load-stone*, they will hinder all its attractive power, and rob it of all its vertue of drawing iron. Renodeus (*l. de mat. Medic.*) asserteth the same. Albertus Magnus saith there is a *Load-stone* to be found, which with one point draweth iron, and with another point doth drive it away. The same Albertus saith, That the Emperour Frederick had a *Load-stone*, which did not draw iron, but was drawn of iron, even as a common *Load-stone* doth draw iron. Serapion saith (*l. aggreg. c. Hagger. Abnantes, sive Almagritos*) esse mineram, or that there is a minerall of this kind in the maritime parts that lie neare India, of so great a quantitie, as that they are forc'd to use, by reason of it, no other nails in the building of their ships but wooden nayls.

History.

It is wonderfull to see how the Needle of a Com-passe, being toucht with a *Load-stone*, doth cause the maritime Card to point North and South: And it is not more wonderfull to behold this, then it is difficult to raise a satisfactorie reason from the nature of the thing concerning it.

Merchants and Mariners in their passages under the line, have observed, that on this side the line the Card doth alwayes point out the North; but when they are once past the Equinoctiall line, and are come nearer to the Antarctick pole, they say it forsaketh the

Observation.

the

Reason.

the North, and pointeth out onely the South: and that for this reason, because (say they) it doth not then so much shew the *Plaga* or climates, as the Pole, and alwayes that Pole which is nearest to it. The cause of this strange variation of the Sea-card in the passage under the line, is supposed to arise from a Magnetick mountain, which in whatsoever place it is, it is observed by the Sea-card. (See *Boet. cap. de Magnet.*) Upon these grounds and reasons, it is to be supposed that there is another *Magnetick* mountain towards the Antarctic Pole, directly opposite to that which is towards the Arctic Pole, which doth convey its attractive vertue at so great a distance, to such or such a ship on the other * side the line, to the wonderfull affecting of its Needle, and strange variation and alteration of its Card; insomuch as now it pointeth full South, whereas before it pointed full North. And that the vertue of this *Magnetick* mountain, should at so great a distance be transferred from it self, in the utmost extremities of the Antarctic Pole, to the Needle of the Card of that ship, which is now very neare the Equinoctiall line, is more wonderfull then the sudden variation of the Card.

*That is in respect of us that live in these Northern climates.

Its vertue and use.

The *Load-stone* calcined is said to be of like nature with the *Hematite*. Galen and Dioscorides say it hath the same vertues. It is said of this stone, that it is good against the head-ach, convulsions, and poysons: and that it causeth easie delivery, and procureth love betwixt man and wife, and preserveth
peace

peace and concord amongst friends, and that it driveth away fears and increaseth wisdom.

Cardanus *l. 7. de lap.* saith, that Aristotle that great inquirer into nature, was altogether unknowing of the maritime use of this stone, and of that use which is made of the sea-card by vertue of this stone; and that Galen and Alexander Aphrodisius, two great inquirers into the secrets of nature, have not so much as once made mention of the wonderfull nature of this stone. The maritime use of it was also unknown to the Romanes, and that was the reason saith Cardane, that they suffered so many shipwracks. It is reported of Mahomet, that the iron tombe in which he was embalmed was by the attractive vertue of a great *Load-stone* drawn up from the earth, and continued in that wonderfull posture for many years together. See Herberts Travels. *History.*

CHAP. LXIII.

*Of the Belemnites, or Lapis Lincis,
or Daetylus Ideus.*

THis stone is in length a finger, in form and thickness like the end of an arrow, outwardly *Description of the Stone.* for the most part of a brown and dusky colour, inwardly it is hollow, sometimes full of a medullous substance like the pith of wood; sometimes this cavity is full of a chalky substance, sometimes of sand. From the *medulla* or substance in this cavity, which is the centre of this stone, if you break the stone you shall perceive small lines like beams to dart

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them-

Of non-transparent and common stones. Part III.
 themselves forth unto the circumference. It is called
 in Greek Βέλαστρον from its form of an arrow.

Of its kinds.

Of these stones there are some externally of a white colour, some of a dusky colour, and some pellucid like *Amber* in colour.

If you take some of them and put them into the fire, they will smell like burned bones or horns, and sometimes like Cats piss: the white ones which are found in *Heildsbem* with a black hard stone in them, smell like *Amber*.

Cardanus calleth this stone *Belemnites*, and saith it is found in form like an arrow, and hath in the whole length of it a fissure or cavity, which containeth in it a stone joyned with a golden armature to the stone containing it; and that this stone is not, as some think, the *Lyncurius*.

See Car. l. 7.
 Ac subtil.

The place.

It is found in *Borussia*, and in *Pomerania*, in many places of *Germany* and *England*: It is found in mount *Ida*, and from thence it hath its name of *Dactylus Ideus*: It is found in very great plenty about *Wittenberg*.

Its vertues.

It is reported of it that if its powder be drunk in some convenient liquour, it will prohibit lustfull dreams, and witchcrafts.

The Saxon and Spanish Physicians take it to be
 of

of the same nature with the *lapis Judaicus*, and therefore they use it to break the stone withall.

In *officinis* this stone is commonly taken for *lapis Lyncurius*. See *Matthiolus*.

CHAP. LXV.

Of the Ceraunia.

THe *Ceraunia* saith *Boetius*, is a stone which usually is found five fingers long and three fingers broad, like a wedge; it is of colour like the *Belemnites*, but it is not *striatus*, it hath no such lines as the *Belemnites* have. If these stones be great they have usually round holes in them, about the bignesse of a mans thumbe, as there are (saith *Boetius*) in a mallet. *Description of the stone.*

Of its names.

It hath its name *Ceraunia* from the Greek word *Κεραυνός*, which signifieth *fulmen* or lightning, and this name it hath because it is supposed to fall from heaven with the lightening. In Germane it is called *Straalhamer*, *Donerstein*, *Schlegel*, *Donnerkeil*, *Stral-pfeil*, *Stralstein*, and *Gros-krottenstein*. In Italian *Sagetta*.

Its kinds.

These stones are smooth stones, they are sometimes found round and sometimes long: sometimes in the forms of a wedge, dish, mallet, or plow-share, or of an ax, and in divers other forms. Of these,

Some are white and pellucid. Some brown. Some black. Some reddish.

It is reported of this stone that it doth secure those that wear it, and their houses from lightning; and procures rest & sleep; and that it maketh men prevalent over their enemies, and conquerours in warres. See Boetius *C. de Ceraunia*.

CHAP. LXVI.

Of the Chelonitis, Brontia and Ombria.

*Description of
the stone.*

THE *Chelonitis* is a stone of a yellowish colour, which is supposed to fall with thunder, from heaven; and sometimes with tempests, and sometimes with rain, in the form sometimes of a wheel, sometimes in a hemi-spherick form, or a semi-globous form, and sometimes long, in the bignesse sometimes of an egg, more often lesse.

Its names.

The *Chelonitis* is by Pliny described to be a pretious stone in colour like to a Tortoise shell: the *lapis Bufonius* and some of these stones are of that colour. This stone is called *Brontia* from the Greek word *Βροντή*, that is, *Tonitrus* in Latine, and in English *Thunder*; and thus it is called because it is supposed sometimes to fall with the thunder. It is called *Ombria* from the Greek word *Ὀμβρία* *Pluo*, or *Ὀμβρία* *Imber*; because as it is supposed sometimes to fall with thunder, so likewise sometimes with a shower of rain.

Its

Its kinds.

These stones are diversly distinguished according to their colours. Some of them are found to be of a yellowish colour. Some of them of a greenish colour. And some of them of a brownish colour.

Anselmus Boetius saith, that he thinketh that the stone which is called *Ovum anguinum*, differeth only in externall form from *Brontia*. The *lapis Bufonius* or *Garatromo* is called by these names of *Brontia* and *Ombria*; as will appear by that which Anselmus Boetius speaketh in the Chapt. of the *Garatromo*: whom I have in this particular observed, as you may see, by having recourse to the thirty sixt chapter of this our Lapidary.

*Of the vertues of the Chelonitis,
Brontia and Ombria.*

They are said to be of like faculties with the *Ovum Anguinum*, and with the *Lapis Bufonites* or *Garatromo*.

It is reported of these stones that they are endued with a power and vertue of procuring victory and conquest to him that weareth them: other vertues they are said to be endued with, which are the same with those of the *Ovum Anguinum* and *Garatromo*.

CHAP. LXVII.

Of the Marble in generall.

THE stones that come next in glory to the gems are the *Marbles*, whose pleasing colour, hard-

ness, or perspicuitie makes them more or lesse esteemed.

The *Marbles* are usually stones of great magnitude, very hard and beautifull, and fit for polishing and engraving. Their excellent concretion, saith Anselm. Boetius, begets their hardnesse; and the equabilitie and purity of the matter or substance of them, begets their excellency of form and beauty. For if the matter be ignoble and various, and of an impure earth, the *Marbles* will be unequall, full of scales and hard roughnesse, and unfit to polish.

The *Marbles*, as all other stones, are not so hard at their first taking out of the quarries, as they afterwards are. These stones of all other stones commonly so called, are for equability and purity of matter most excellent.

It is by the wise inquirers into the secrets of nature supposed, that various exhalations are the causes of the varietie of tinctures and colours, which are commonly found in the *species* of these stones.

Of its adulteration.

It is no impossible thing, nay, a very easie thing to adulterate this stone, and every *species* thereof with a fit matter, brought together after the manner of that wherewith those China cups and pots are made, which out of the Eastern parts are brought hither to us.

Its Names.

The most noble kinds of *Marble* Cardanus *l. de lapid.* doth reckon to be these: *Phengiticum*, *Pari-*
1177,

um, Zeblicum, Porphyrites, Ophites. In Hebrew the *Marble* is called שׁיֵשׁ *Shaiſh*; as 1. Chron. 29. 2. By contraction the Hebrews call it שׁשׁ, as Esther 1. 6. שׁשׁ ועמורֵי שׁשׁ *hoc est, ad orbis vel annulos argenteos, & columnas Marmoreas.* The *Marbles* by a generall name are called in Greek μαρμαριον, ἀπὸ τοῦ μαρμαριονος, that is, from their excellent beautie and splendour. In Latine, from the Greek, for the same cause, it is called *Marmor*. In Dutch *Marmelstein*. Almost in all languages it doth retain the same name. In English with a little variation it is called *Marble*.

Its kinds.

Of this stone there are divers kinds. Some white, some black, some green, some yellow, some brown, and of an ashie colour, and some of divers colours, and some very beautifully red. Of all the other kinds, the *Lapis Parisus* which is the *white Marble*, and the *Lapis Porphyrites* which is the *red Marble*, are the most excellent, beautifull, and lovely.

Every one of these kinds of *Marble* does admit of diverse *species*, severally denominated, some from their colour, and some from the place of their originall; as afterwards when I do come to speak of *Marbles* in particular, in the order of their severall originall *species*, I shall have occasion to shew.

There are multiplicite of *species* of these stones, and all of them for the most part of very exquisite hardnesse, and fit for polishing. And the greatest part of the kinds are also endued with much beauty, and being fit for polishing they are made of very great ornament. There

There is a kind also of this stone which is called *Marmor scētile*, which saith Cardane is indeed a stone like in nature to the *Marble*, quippe quòd scētilis sit; but it is of an ashy colour, and of an incredible softness, so that for any use, it may like wood be easily parted in sunder with a saw: Some by reason of its obscure colour, referre this to the kinds of flints, but not very advisedly, because it is proper to the flints to be full of scales, like those kinds of *Marbles* which are called *marmora granulata*: neither are the flints at any time found perfectly smooth, no more then are those *marmora* called *granulata* or *squamosa*, nor have they any glory or beauty of the *marble*, nor are they so fit to be cut as that, by reason of their roughness, ruggedness, scaliness, and unevenness.

These stones which Cardan calleth *marmora scētilia*, are improperly called *Marmora* or *Marbles*; nor can they well and truly be called *Silices* or *flints*: for if we compare them to the *Marble*, we shall find that they do want all the glory and beauty which is in any of the *species* or kinds of the *Marble*, which their glory and beauty doth crown them with the name of *marmor*: for à *splendendo & rutilando* the Greeks call the *Marbles* by the name of μαρμαίρεσσι, and the Latines by the name of *Marmor*, none of which resplendency or refulgencie is found at any time (witness Cardane) in this *marmor scētile*: therefore upon these grounds it is that we say and affirm, that this *Marmor* called *scētile*, is not a *Marble*.

Again, if we do compare this stone called *Marmor scētile*, with the flint, it wanteth those *squamæ* which are found in the flints; for the flints are seldom

Cardan. lib.
127.

Cardan. de
lap. l. 7. pag.
378.

dome found without scales, but the *Marmor scētile* hath no scales. And for this cause, saith Cardane, *loco citato & allegato*, the *Marmor scētile* is no flint. Abundance of this kind of *marble* is to be found in Italy about *Venice*.

Of the places in generall.

The *marbles* of the best sort are found in the Eastern countreys, and in many parts of *Asia*, as will appear in our speech or discourse of these stones in particular: And not lesse excellent for glory, and beauty, hardnesse, and ornament, are those which are found in the countreys of *Europe*, as will afterwards likewise appear in the sequel. And these parts of the world are not alone possess'd of these treasures, but we shall likewise find them by diligent search in many parts of *Africa* and *America*.

Of the use of Marbles in generall.

The generall use of the *marbles* is very well known to most Stone-cutters, or Statuaries; who are wont to fit them for ornament in building, and for the beautifying of great and magnifick structures. To these purposes, and for these uses we may see them employed in the palaces of Kings, in the houses of Princes, and in those Temples which the Heathen have reared and beautified with these ornaments, and then consecrated to the service of their gods. And in many of our Temples amongst Christians at this day, we see these stones are used in the structures to adorn and beautifie those places withall; which they

have consecrated to the worship of God. The generall use of these stones may also be observed in ceteries and mortuaries, where the urns of great men have usually their dust and ashes covered with a *marble*, as a monument and ornament in some kind, gloriously to perpetuate and eternize their memorials, and the remembrance of them upon earth.

Rabbi Salomon writeth, that the use of *marble* in the Temple, was much in pillars of the Temple, and for the measures of the Temple, and for the pavements of the Temple.

CHAP. LXVIII.

Of the Lapis Parius, or white Marble.

*Description
of the stone.*

THE *Lapis Parius* or *white Marble*, is the first and best of the kinds of *Marble*, it is a very beautifull lovely stone, to which for singleness of beauty, and unmixt formosity, none of all the other *species* of *Marbles* may be compared. It is a stone most white and very fair, and for this cause doth Rulandus and Anselmus Boetius in the consideration of these stones give this the first place, as being most noble, excellentest and best of all the other *species* and kinds of *Marbles*.

Of its adulteration.

Artists have a way as of adulterating other beautifull, fair, and noble stones, so also of this, and this they may do with the matter, of which the *China* dishes are made, and with *Alabaster*, and with such
like

like matter as may well and firmly be compacted, and wrought up by equability of substance and politure of parts to the fairnesse, beauty, and glory of a white *Marble*.

The *China* vessels of which before in the chapter of the *Sardonix* mention hath been made, are brought up to that beauty which we see them in, by the artificiall working of the fatter part and purest of the earth with some portion of the powder of the gemm called a *Sardonix*; and to such like beauty and solidnesse by art may the fatter part of the earth mixt with certain proportions of *Alabaſter* be brought, even to an emulation of the fairest beauty of the excellentest and most noble white *Marble*; and I see no reason but that if this matter be handled by skilfull Artists, it may be made as fit for the framing of beautifull vessels, as that other, out of which the *China* vessels are made; of which vessels in fairnesse and beauty emulating the *Onyx* and *Sardonix*; of which vessels, I say, for their pleasing beauty, Mithridates king of Pontus had four thousand amongst his other household utensils.

Its names.

In Greek Πάριος. In Latine *Parius*. This name as some think, it hath from the Island *Parus*; and hence in *Epigrammate* this of the Poet,

Pario Marmore structus, &c.

Others are of opinion that this white *Marble* is called *Parius* by the name of him who was sometimes an Engraver of this stone, namely *Agoracritus Parius*; this *Agoracritus Parius* is that excellent antient

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Engraver that first made the image of Venus of this stone. The Germanes call this stone *Wassermarmelstein*. It doth appear by Varro that this stone in old time was called *Lychnitis*, as being in those dayes much used for lamps. In English the *white Marble*.

The kinds of it.

Rulandus maketh mention of ten kinds of this *Marble*. 1. *Marmor candidum Lunense*, which he saith is the whitest and best of all the *white Marbles*, and called by the Dutch *ein weiss Marmorstein*. 2. *Candidum Cartariense*. 3. A *Patavian* or *Paduan white Marble*, called *Marmor Patavium serratile*, because it is a stone that is made fit for use by sawing. 4. *Italicum Marmor*, or an *Italian Marble*, sprinkled amidst its white with many brown and ashie coloured veins. 5. *Marmor candidum Ratisbonense*, or the *white Marble of Ratisbone*, of this at Ratisbone they are wont to make *tabula mensarum* or trenchers withall. Of one of these *Marbles* the Altar at Annenberg is made; the whole Altar consisteth of but one only solid *Marble* of this kind; then this *Marble* there is not a fairer in all Italy. 6. The sixth kind of *white Marble* is called *Marmor candidissimum Carolinum*, because it is found in the Caroline baths. 7. The seventh kind of *white Marble* is called *Marmor candidum Hildeshemium*, from Heildeshem the place where it is found. This is like in whiteneffe to ivory. 8. The eighth kind of *white Marble* is called *Marmor candidum Arabicum*; this likewise is as the other found of whiteneffe like to ivory. 9. The ninth kind is found amongst mettals at Annenberg,
and

and is therefore called *Marmor candidum Annenbergicum metallicum*. 10. The tenth kind of *white Marble* is called *Hildeshemium cinereum in candido*; this is of an asbie colour in a white, and in smell it is much like the odour of the burning of horn.

Anselmus Boetius maketh but two kinds of the *white Marble*. Namely, 1. The *lapis Parius*, which is the true *white Marble* and most beautifull with an exquisite hardnesse. 2. And the *Alabastrites* or *Alabastrum* or the common *Alabaster*, which is of no lesse beauty then the true *white Marble*, yea if this be well polished it is comparable to the *Onyx* for beauty, and carrieth with it a very lovely countenance and pleasing aspect: the difference betwixt this and the best *white Marble* is only this, that the best *white Marble* hath an *exquisita durities* joyned with its beauty, and the *Alabaster* is for the most part found somewhat softer and lesse concocted; yet doth not the *Alabaster* continue in this softnesse, but by tract of time, and length of dayes, it groweth harder and harder till it doth attain to the perfection of the best and fairest *white Marble*.

The places.

The *white Marbles* are found in the Island called *Parus*. There are of the best of these saith Boetius, found in *Italy* and *Cappadocia*, but seldome in the lump bigger then a man. These *Marbles* are also found in *Hetruria*; In *Padua*; In *Ratisbone*; In the *Caroline baths*; At *Hildeshem*; In *Arabia*; At *Annenberg*.

The *Alabaster* is found in many places of *England*,

of very excellent beauty, and very lovely if it be well polished. Of which we shall have occasion to speak in the next chapter as in its proper place.

Of the faculties, vertues, and use of the white Marbles.

Discourse concerning the faculties and vertues of these stones I must deferre to a better opportunity.

Its use commonly known, is for the most part to be seen in the ornament of magnifick structures, and in monumentall statues.

CHAP. LXIX.

Of the Alabaster.

Description of the stone.

THe *Alabaster* is a beautifull white stone of the kind of *Marbles*; of which vessels or pixes in anuient time were wont to be made, as the receptacles of rich and costly oyls and unguents, and indeed these vessels are the best of all others for those purposes; and that first for their strength, for they are stronger then glasse: secondly for their purity, for they are much purer then metals: thirdly for that they do not imbibe or drink in, nor leak, or so easily let forth any pretious liquour which they are the receptacles of; for this cause they are much better then any earthen vessels what ever for such purposes.

The *Alabaster* is a known stone to every one that hath seen Romane edifices.

It is said of the pretious ointment which Mary Magdalene poured upon the head of Christ and anointed

ointed his feet withall, that it was contained in a box of *Alabaster*, as appeareth in the Gospel of S. Matthew, *Matth.* 26. 7. *Mark* 14. 3. *John* 11. 2. and 12. 3.

Its names.

In Greek it is called *ἀλάστρα*, and τὸ ἀλάστρον, that is, *Alabastrum*, which word of the Greeks is derived from α & λαμβάνω and that because *capi non potest propter levorem, ut Dioscor. lib. 5. c. 153. Est ἀλάστρα τὸ λίθος ὁ λελευμένος ὄνυξ*, that is, *est Alabastrites lapis qui appellatur Onyx*, there is a kind of *Alabaster* which is called an *Onyx*, as appeareth by the fourth and fifth books of Dioscorides. In Latine it is called *Alabastrites* & *Alabastria* from the countrey of *Alabastria* whence it is brought, so saith Martinus Rulandus. In Dutch it is called *Alabaster stein*. In English *Alabaster*.

Anselmus Boetius saith it is called *Onyx*, and that it differeth from that pretious stone, in softnesse only. This stone doth retain the name of *Alabaster* in almost all tongues and languages.

Its kinds.

Anselmus Boetius saith that some make two kinds of this stone. Namely the *Alabastrites*, and the *Alabaster*, which do differ only in this, in that the *Alabaster* is so soft as that it may be cut with a knife, and the *Alabastrites* so hard that it cannot be cut.

The *Alabaster* saith Rulandus is a stone (well known to the Venetians) of the kinds of *marbles*.

Rulandus speaketh of three kinds of this stone.

1. A white *Alabaster*, called in Germane *weissar Alabaster stein*; of this he saith, that in old time they were wont to make the shrines and images of Saints; together with the monuments and sepulchres for the dead.

2. The second kind of *Alabaster* he saith, hath black specks and spots, which in Germane is called *Bundschwarz Alabaster stein*.

3. The third kind he saith, is white in a yellowish red, and therefore is called *Onyx*; or rather, because it is white in a red; this in Germane is called *rotblecht Alabaster stein*, because it doth represent the colour of the nail of a mans hand. Properly of this kind of *Alabaster*, that of Dioscorides is to be understood; where he saith, *Alabastrites qui & Onyx dicitur, crematus, duritias cum pice aut resina discutit*.

Of the *Onyx*, and of the *Testa Conchylii*, and of the *Unguis odoratus*, Dioscorides doth speak in his second book. In Germany there are two kinds of *Alabaster* found, which are nominally distinguished from the places in which they are found. The first of these kinds is called *Alabastrites Cheruscus*, as being found in *Cheruscia* not farre from *Northusia*. The second kind of these *Alabasters* is called *Saxonicus*, as being found in *Saxony* about *Hildelshem*.

Of the places.

This stone is found in a Countrey called *Alabastria* in Egypt. It is also found in *Damascus* of *Syria*, and in *Northusia*, and in *Saxony*, and about the Egyptian *Thebes*; in *Carmania*, in *India*, in *Asia*, and in *Cappadocia*; in *Arabia* and *Italy*. In *England*

is found very beautifull *Alabaster*. There are many pieces of this stone to be found and digged up in the Colledge yard of Henry the sixth, called the Chappel yard in the Univerfity of Cambridge.

Its vertue.

Dioscorides faith of this stone, that it is endued with a diffuffive power, especially if it be calcined. The like doth Mathiolus also speak of this stone. They likewise fay that the powder of it, artificially mixt *instar Cerati vel Unguenti* with other fit matter, and artificially applyed to the stomach, doth diffuffe the cause of its hardnesse, asswage its pains, and mitigate its dolours and griefs. Galen doth highly commend the powder of this stone to be taken in drink for this purpose.

A scruple of the powder of this stone if it be drunk in milk, is said to be good against dysenteries & fluxes of the belly, in these cases it may help by its astringency, for it is said that it is very astringent and for this cause it is also taken to be very good in *Collyriis*, or in ophthalmick medicines which externally are used for the repressing of involuntary tears, and watery fluxes of the eyes, as doth appear by what Mathiolus and Dioscorides speak of it.

Of its use.

This stone made into *pixes* and boxes, or convenient vessels, is of excellent use to keep pretious unguents from rancour and corruption, and to preserve costly oyls from wasting. Of its aptnesse for this use Pliny *l. 36. c. 7, & 8.* doth write; and other

things concerning it, *l. 13. c. 13.* The known use of this stone is in the ornament of stately edifices. It hath been used in imagery, for the framing and forming out of it, the shrines of Saints, and for the erecting of Tombs and Monuments, and Memorials for the preservation of the memory of the dead, and to make their names live when their spirits have left the world, and their bodies are returned to the dust and scattered into unknown places. The common use of this stone in these our dayes is in vessels, either for eating or drinking, many of which vessels of excellent beauty, I have seen brought to the fair near Cambridge (a famous University in England) called Stirrebridge fair, and there sold at very reasonable rates. These vessels are very commendable for their beauty, and very fit for use, as being somewhat tenacious, and therefore not broken easily and without violence.

CHAP. LXX.

Of the black, brown, and blue Marbles.

*Description
of the stone.*

THe black *Marble* is a stone of a large magnitude, and hard, in the form and thicknesse of barres of wood sharpened at one end, which being formed and framed by art, and polished, is made fit for many noble ends and uses.

Of its names.

This cannot well be called *marmaros*, because it being thoroughly black, cannot be capable of that resplendency, which the white *marble*, and the *Porphyrite*,

rie, and the other beautifull marbles of light colours are endued withall. This marble is called *Luculleum*, from *Lucullus* the Consul, who brought it first to Rome from the island of Nilus. So saith Boetius, pag. 245.

It is also called *Obsidianus lapis* from *Obsidius*, who first found it in *Ethiopia*. The Italians call it the *Paragone*, and that because of its use: for with it they examine gold in stead of the *lapis Lydius*. In French *Pierre d'touche*. In Germane *Probeirstein*. In English *The black marble*.

Of the places.

This stone is found in the North of *Ireland* towards *Gallowey*; also in *Belgia*, and in *France*.

Rulandus speaketh of seven kinds of this marble.

1. *Marmor nigrum Belgicum*, or the Belgick black Marble.
2. *Annebergicum*, or the Annebergish Marble.
3. *Ratisbonense*, or the Ratisbonian Marble.
4. *Belgicum*, or the Belgick Marble, which he saith hath the smell of Sulphur.
5. A black Marble, which smelleth like burned or calcined horn.
6. *Marmor Andegavense*, which is a very black polisht Marble, and is found not far from that citie.
7. A black Marble called *Stolpense* of an iron colour and hardnesse. This Marble Agricola calleth *Bisalten*: and Rulandus *Busalten*. In Dutch, *Stolpischer-stein*. The name *Basalten* by which this Marble is called, cometh of the *Ethiopian* word *Basall*, which signifieth iron. And this stone (saith Boetius) is of the colour of iron, and may be exactly polisht. Boetius saith that this stone is found in *Ethiopia*; and

in diverse parts of *Germany*; in *Silesia*, and in the coasts of *Bohemia*: and that it groweth in the mines where it is found in the form and thicknesse of bars of wood sharpened at one end.

Of its use.

The black Marble is used for the examination of gold and silver, and hence of some it is called *Basanus*, à *Basaniζο*, which signifieth *to examine diligently*: which name is proper to the *lapis Index*, or *Lydius*; and that for its use of examination of gold and silver. Its common use is in pavements and tombes. The tombe of that illustrious Prince, Duke *Maurice* the Electour, was made of this Marble, saith *Rulandus*.

CHAP. LXXI.

Of the Lapis Lydius, or the Touch-stone.

THe *lapis Lydius* is a kind of black Marble, it admitteth of a very good and perfect politure; and if it be a very good *lapis Lydius* indeed, you can scarce have no sooner breathed upon it, but straight-way the cloud of your breath will flie from its superficies, and presently be discussed.

Its names.

This stone in Greek is called *Βίονος à Κασιζο*, which signifieth *to examine diligently*: hence also in Latine it is called *lapis index*, because by examination it sheweth gold to be gold, and silver to be silver; and also other metalls what they are. It is called *lapis Lydius*, from the countrey of *Lydia*, from whence it is brought. In French *une pierre de touche*. In Germane

mane *ein Probiertstein*. It is found in the same places where the black Marble is.

Its use.

It is used in the examining of metalls; and it may be used to the same purposes with the black Marbles. In Italy they have a greenish stone, which they call *Veridello*, which they use for examination, even as they do the *Lydius*.

CHAP. LXXII.

Of the Green Marble.

THe green Marble is of some taken to be that which the Italians call *Veridello*. This Marble is sometimes found specked with cleare specks like a serpent, and for this cause it is called of Albertus Magnus the *Serpentine Marble*.

Its kinds.

Rulandus speaketh of three kinds of this green Marble. 1. *Laconicum viride marmor*, or a Laconick green Marble, which may be seen at Venice. 2. *Subviride Veronense*, shining with bright green spots. 3. A Laconick Marble which is blackish in a green.

The place.

The green Marbles are found in *Lacedaemonia*. The use of these stones is in ornament. This stone may be seen in *Florence*, in the Temple of *S. John Baptist*. Cardanus *lib. de lapid.* saith, that he hath seen many columnes, or pillars, and tables of this stone.

CHAP. LXXIII.

Of the Ophites of the Ancients, or the
Serpentine Marble.Description of
the stone.

THE *Serpentine Marble* is by some taken for an *Alabaster*, distinguished with spots like a Serpent. It is often found of divers colours.

Its names.

This Marble is called *Zeblicum*, and *isime ab isoc, serpens*, as saith Dioscorides, *lib. 5. cap. 154.* hence the name *Ophites*. By the Germanes *Serpentin stein*. In English the *Serpentine Marble*.

Its virtues.

Galen. l. 9. de simpl. med. facult. saith that this stone hath a deterfive facultie, and that if it be taken in white wine, it is good to break the stone in the bladder. It is of a cold nature, and may therefore mitigate pains, as saith Dioscorides. It is said of this by Plinie and Dioscorides, that if it be worn, it will secure the person wearing it, from stings of serpents, from phrensies, and lethargies, and from plagues, pox, and poysonings, and the like. To this purpose also Cardane in his book *de lapid.* doth speak of the *Zeblicum Marmor* which is found in *Misnia*. Of the various coloured Marble called *Ophites*, Cardane saith that Andr. Alciatus had a fair table of great beauty: and that naturally there are shapes and personages found in these various coloured Marbles: and sometimes in the *Lapis Parisus*. Of this admirable workmanship of nature Cardane saith there

there is a Marble in the Temple of *Wisdom at Constantinople, which hath in it the image of S. John Baptist, with his garment of camels hair very exquisite in all things. *Cardan. de subtilitat. l. 7. p. 377.*

CHAP. LXXIII.

Of the Phengites or yellow Marble.

THe *Marmor Phengiticum* is a Marble that hath yellowish transparent veins, saith Boetius. Rulandus saith that it is a yellow pellucid Marble; and most likely so, or else it could never discover so much glory in the dark as is reported of it: For Cardanus saith, that it shineth exceedingly, and giveth the *species* of images. For this cause Nero finisht the temple of Fortune; as it were inwardly of the splendour of a golden house, which was a building that Servius Tullius first began, and called it *Sejam*. This house (saith Cardane) was so finisht by Nero in its internal structure with this kind of Marble which receiveth the light; as that the doores being all shut, so much light was reserved within, as that a day-light claritie and splendour was there to be seen.

Its names.

This Marble is called *Phengiticum*, and *Marmor flavum*; in English, *the yellow Marble*.

Its kinds.

Rulandus speaketh of two kinds of it: 1. *Marmor flavum*, which is found amongst metalls, and called in Germane *ein gelver spot*. 2. A yellow Belgick Marble which is not pellucid. *Places.*

The places.

This kind of Marble Plinie saith is found in *Capadocia*: it is also found in *Belgia*.

CHAP. LXXV.

Of the brown or gray Marbles.

THe gray Marble is a hard stone of a cleare superficies, well known to all. It is called *Marmor cinereum*, and *cinereum Hildeshemium*.

There are six kinds of this Marble according to Rulandus. 1. *Marmor cinereum Hildeshemium*, which smelleth like burnt horn. 2. *Marmor Zeblicium*, which the inhabitants call a *serpentine marble*, with veins and white points. 3. The third kind is also called *Zeblicium*, to which or in which are generated *Carbuncles*, that in a polisht Marble give a very pleasant aspect, and a wonderfull representation. 4. *Marmor Rochlicianum* with yellow specks. 5. *Rochlicium* with black specks, like to the claws of crows. 6. *Italicum*, or an Italian one, with black specks, like serpents. Cardanus saith concerning the colours of Marbles, *Nullus color marmoris concessus non est*.

The blue Marbles are of the kinds of *Porphyry*, of which in the next Chapter.

CHAP. LXXVI.

Of the Porphyrites or Porphyrie, or of the *Marmor rubrum*, or red Marble.

THe *Porphyrite* is a red Marble, of very excellent hardnes, and of a beautifull splendour. An-

Anselmus Boetius saith that of all the kinds of red *Marbles*, the *Porphyry* is the best for splendour and hardnesse.

At Millain before the altar of S. Ambrose temple, (Cardanus in his book *de Lapidibus* saith) there are two notable pillars of excellent *Porphyry* to be seen : And that in the same place there was a very fair tombe of B. *Dionysius*, of *Porphyrie*, for magnitude as large as a mans body, and of no small thicknesse, which was translated from the temple of S. Ambrose to a larger temple of the same citie of Millain.

Its adulteration.

It is no hard matter for those artificers that are skilled in the sophistications of this kind, and in an exquisite imitation of nature in the making of factitious stones, to adulterate the *Porphyrie*, for such artists as these, who are the imitators of nature, know what matter will be purest and most exactly compacted together for this purpose; they know what tinctures will best fit for the production of the beauty of the *Porphyrie*, and how to mix these tinctures so, as that their artificiall stone shall emulate in beauty the best red *Marble*, or *Porphyrie* of the excellentest beauty; for the matter of the adulteration of this stone, how such matter may be brought to the perfection of a stone by art, will appear by what hath been spoken concerning the China cups in the chapter of the *Omyx*; and concerning the artificiall tinctures of gemms in other chapters of this our lapidary. Alabaster and fat earth well mixt will

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raise

raise a fit matter for this purpose, to which a convenient tincture being added, it will produce the artificial beauty of a very excellent *Porphyrie*.

Of its names.

In Hebrew it is called כהרם as Esther 1. 6. In Greek it is called πορφυριτης from πορφυριζω which signifieth *sum purpureus, vel in purpuram vergo*. So *Dioscorides* l. 3. c. 44. In Latine it is called *Porphyrites & Marmor rubrum*. If it have any white specks, *Pliny* calleth it *Leucostictos*. The best *Porphyry* is by *Martinus Rulandus*, from its native soil called *Aegyptium Uniforme*; and for the same cause it is in *Germane* called *ein schoner roter Marmor auß E-gypten*. In English we call it the *Porphyrite*, and the *red Marble*. Divers other names it hath from the places of its birth, from the soyl where it groweth, and from its mixture and variety of beautifull colours, as will appear in the severall distinctions of its *species* by its severall colours, and severall places where it groweth, and is found, and from whence it is brought.

Its kinds.

The *Porphyry* or *red Marble*, is found of divers kinds saith *Rulandus*. *Rulandus* speaketh of eight kinds of this stone, which is called *Marmor rubrum, or Porphyrites*.

The first kind he saith is *Marmor rubrum Aegyptium uniforme, or Porphyrites uniformis*, that is, a *Porphyrite* full of uniformity, and every way like it self, of one entire beauty arising from its pleasing
red,

red, which is uncompounded, and not at all intermixt with any variety of other colours, this is that excellentest or best red *Marble* or *Porphyrite*, which is singularly hard, full of splendour, and more beautiful than all the other kinds, as having no darknesse admixt with the splendour of its rednesse; nor cloudinesse or obscurenesse shadding of it.

The second kind Rulandus calleth *Marmor Aegyptium rubrum*, or *Porphyrites ruber candidis punctis distinctus*; that is, the red *Marble* of Egypt, or the *Porphyry* distinguished with white spots.

The third kind he calleth *Marmor rubrum Ratisbonense*, or *Porphyrites Ratisbonensis*, this is so called from *Ratisbone* the place where it is found.

The fourth kind he calleth *Rutilans Marmor Ratisbonense cum candidis maculis*, that is, the red *Ratisbonian Marble* with white spots.

The fifth kind he calleth *Marmor nigrum in rubro Bohemicum*, or *Porphyrites ruber Bohemicus*, so called from the place where it is found.

The sixth kind he calleth *Marmor in rubro candidum Belgicum*, or *Porphyrites in rubro candidus Belgicus variis maculis distinctus*, that is, the *Belgick Porphyrite* which is white in a red, and distinguished with divers spots.

The seventh kind he calleth *Marmor Annebergicum*, or *Porphyrites Annebergicus in metallis repertus*; that is, the *Annebergick Porphyrite* found in mettals.

The eighth kind he calleth *Marmor rubrum in candido, in metallis ferè omnibus repertum*; that is, the *Marble* or *Porphyrite* which is red in a white, and is found saith Rulandus, in, or amongst almost all mettals.

Cardanus speaketh of but two kinds of the *Porphyrite*, the one distinguished with red and white spots, the other he saith is a red *Marble* distinguished with shining spots.

Anselmus Boetius speaketh of these kinds of the *Porphyrite*.

1. A *Porphyrite* red and full of splendour, excellency, and beauty; of which before.

2. A *Porphyrite* which is blue or of a violet colour, and is found about the Gregorian mount in the field of S^t Pisans in France.

3. A Theban *Porphyrite* of a red colour with golden spots.

4. A white *Marble* with red veins which is called *Lanense*. And this truly if it be excellent and well polished, is of admirable and excellent beauty, and very gratefull to the eye.

The place.

It is found in *Egypt*, in *Belgium*, in *Bohemia*, in *Ratiabone*, and in divers places of *France*, *Germany*, and *Italy*, and at *Anneberge*, and about *Thebes*.

Of its dignity and use.

It is of dignity for its beauty; of use for ornament of Princely and stately Palaces and Temples; it is also used for sepulchres, and as rich and costly tables.

CHAP. LXXVII.

*Of common stones which are vulgarly known,
and to be found in most places.*

THe stones commonly known and found in most places, are generated of a more impure matter (for the most part) then are the afore-mentioned stones. These stones which are so well known to all men, are distinguished amongst themselves, either in respect of their magnitude, as some of them are greater, and some of them lesse, or in respect of their consistency, or in respect of their qualities, or in respect of their use. As concerning the magnitude of these stones, some of them are very large, and hewn out of main rocks of the same nature with themselves; of this kind are free-stones, grind-stones, whet-stones: and others of them are very small, and are found in every field, in every high-way, and in every street, of this sort are the pebble-stones, flints, and pyrites. As concerning the consistencie of these stones, or the matter of which they are generated, some of them have their originall of a gravelly matter, others of a slimie or muddie substance, which according to the various operations that nature hath upon it, produceth stones either of a smooth superficies, or full of scales, nodose and full of knots. As concerning their qualities, some of them are liquable or easily molten, as some kinds of the softer flints: others of them have a strong favour, as the *Lapis Aldenburgicus*: and some of them are easily burned, as the *Lime-stone*. As concerning
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Of non-transparent and common stones. Part III.
 their use, some of them from their use are called *Whet-stones*, some *Lime-stones*, some *grind-stones*, others *free-stones*.

CHAP. LXXVIII.

Of the Saxum Arenarium, or the Gravell-stone.

THe common stones of great Magnitude vulgarly known are first the *saxum Arenarium*, or the gravell stone. The gravell stone, is a stone commonly known, generated of a sandy substance, concrete together into a masse of a very great and wonderfull magnitude.

Of its kinds.

These stones (according to Boetius) are of three kinds. 1. A rough gravell stone, which is generated of the grosser part of sand, and is so firmly compacted, as that it is not easily levigated; the roughness of its grosse, sandy substance, maketh this stone unfit for levigation; but its well-compactedness maketh it very fit for building.

2. A gravell stone compacted of the smallest sand, mixt with intersplendent silver spangles. But this is so soft as that it may easily be rubbed to pieces with the fingers. This stone is found neare *Prague*.

3. A gravell stone which is sometimes of a yellowish colour, sometimes of a red colour mixt with splendent golden spangles, and at other times onely red. There are of these kinds of stones also of an ashy colour, and of a blackish colour in a red. The
 gravell

gravell stones are very heavie and weighty, and for the most part they do consist of divers mixtures: for some of them are found in their substance to be mixt with a multitude of small flints, others with small shells, and other little bodies.

Rulandus speaketh of five kinds of this stone.

1. *Pirnense Saxum Arenarium*, which in Germane is called *Weißer Pirnischer Sandstein*. 2. *Luteum Fribergium*. 3. *Rubrum Rochlicium*. 4. *Cinereum Quersurdium*. 5. *Saxum Arenarium Nigrum in Rubro*, of *Embecca* in *Saxonie*.

CHAP. LXXIX.

Of the Crusteous stones, or stones that have scales.

THe crusteous and scaly stones which nature doth generate of a divers matter, are of colour sometimes gray, sometimes whitish, sometimes of a greenish gray, sometimes blue, sometimes red, sometimes black, and sometimes yellowish, and of so soft a substance, as that they are fit for very little use, save onely that in the countreys where they are commonly found, they are used for the covering of houses, and for the making of forms to cast bullets in.

Their names.

In Latine these stones are called *lapides squamosi & crustosi*. In Germane *Schiferstein*: in Belgick they are called *Shnilgen*: in French, *Escailles*: In Franconia they are called *Wasser steinen*, as being in those parts found in the water. *Ans. Boet. p. 254.*

CHAP. LXXX.

Of the Limofus, limous, mud, or slime-stone.

THe *lapis limofus* is so called, because it is easily dissolved. This seemeth to be but the *initium* or beginning of a stone. These stones for their pinguositie and fatnesse are used to manure and make land fertile withall.

CHAP. LXXXI.

Of the Tophous or knotty stones called Tophi Nodosi lapides.

THe *lapides Tophi* and *nodosi* are like to the *lapis Parisus*, or white Marble in candour and hardness. Some of these are found black, and some of them of a red earthy colour. They have the levity of a *Pumise*, and are so soft as that they may be sawed in pieces like wood. These stones are called in Greek *τόποι* and *νόδοι*, in Latine, *Tophi*, and *Nodosi*, and *Pori*. These stones are used in buildings, and they are (saith Boetius) very fit for this purpose, because by reason of their porositie, they do with great facilitie entertain and imbibe the lime, and do therefore the better agglutinate the extremities of the walls to themselves.

CHAP. LXXXII.

Of the Calx viva or lime stone.

THe Lime-stone or *calx viva* is a stone of a white colour, of which is made a very commodious

dious matter for building. It is sometimes found of a brownish colour. It is every where obvious, and its use is well known to all.

It being put in water, doth by a sudden motion of a contrariety of qualities which is betwixt its self and the water, produce a great heat. Plinie saith this stone is of a burning faculty, and hath discussive power with it, and that it is good against ulcers. Galen 9. *Simpl.* saith it is good to produce an Eschare withall; but being quencht or flakt (he saith) it looseth these faculties.

Rulandus speaketh of two kinds of it, *viz.* one of a white colour, and another of a sky-colour; both which he saith, have a burning faculty with them; and that both do naturally hate water, and are inflamed by it; but love oyl so, as that they will very easily mix themselves with it. *Vide Serap. de Calce. l. aggreg. c. Horach.*

CHAP. LXX·XIII.

Of the lapis Molaris, or the Mill-stone.

THESE stones are so common and well known to every man, that I shall not need to speak any thing, either concerning them or their use. Onely this, they are called מרחים in Hebrew *ab odore perpetuo farinae*, so saith Buxtorff. Those kinds of Mill-stones which the Hebrews call מרחים, were wont to be plied and followed by the hands of captives, who standing behind them, did thrust them with their hands, and the strength of their whole bodies, in a very servile labour which they were compelled to; hence it is said Exod. 11. 15. אשר אחר מרחים, *hac est, qui est post molas.*

CHAP. LXXXIV.

Of the Cos or Whet-stone.

THE ordinary Whetstones are well known to all men by their common use. Cardanus saith that *Cos* is a kind of *Lapis Lydius*; and if it be very good, fit for the triall of mettall, whether gold, or silver, or other mettalls.

-CHAP. LXXXV.

Of the common stones of lesser magnitude which are vulgarly known.

THE common stones well known to all, are generated some of a more impure earth, others of a more pure. Those that are generated of an impure earth, are of a rough superficies, full of scales and porous: these are soft, and for the most part of a brown colour, yet there are to be found of these stones of all manner of colours. These stones are usually found in fields, and upon the banks of rivers. The softer sort of these kind of common stones, are wont to be melted to poure upon mettalls, to keep them from evaporating.

CHAP. LXXXVI.

Lapides bene vel malè olentes; of stones of smell and savour.

THE stones that have savour are of the kinds of small stones. The savour that they have is sometimes

times good and pleasing, and sometimes evil and displeasing. Anselmus Boetius saith, that he had some of the kinds of small stones that smelt like violets: which were some of them of a white colour, and others of a brownish colour. But concerning the originall of the savours and sweet smells in these stones, upon better consideration, he saith, that the smell did not proceed from the stones, but from the greenish slime that did adhere to them; which slime being taken away, the smell also vanisht. *Boet. p. 258.*

All these kinds of common soft stones, do for the most part, partake of the savour of those things that grow neare to them.

CHAP. LXXXVII.

Of common stones vulgarly known which are generated of a more pure earth.

THe common small stones which are generated of a more pure earth, are of a smooth superficies, and void of scales, roughnesse, and knottinesse; these are found so excellent oft-times, as that they being cut and polished, emulate *Marbles* for beauty, nay *Diamonds*; In-somuch as some of them for the glory of their sparkling rayes, are esteemed valuable with ordinary *Diamonds*, and sold at the rate and price of them. Of these kinds of stones which are vulgarly known, is the *Marchasite*, and the *Silex*. Of which in the following chapters.

Of the Pyrites, Fire-stone or Marchasite.

Description of
the stone.

THe *Pyrite*, *Marchasite* or *Fire-stone*, is a soft clear stone and bright, out of which fire is easily excusd. If you break one of them, and rub the two parts of it together in a dark and shady place, you shall see many sparkles of fire proceed from it; as oft I have experiencd in our English *Pyrites* or *Marchasites*.

Of its names.

Dioscorid. l.
15. c. 135.

It is called in Greek Πυρίτης λίθος, & Μαρμαρίταια. In Latine *Pyrites lapis*, *Pyrimachus*, *Marchasita*, *Lapis luminis*, *Pyrsotocus*, *Lapis ararius scatens rubro sulphure*, & *scintillas ex chalybe multas excutiens*. In Germane *ein kiesel hat weil rots Schwefels, kupfferstein*, & *kupffer erß*. In English the *Fire-stone*, or *Marchasite*, or the mine of brasse.

The kinds of it.

Of the *Pyrites* there are some of a silver colour, and some of a golden colour, the best are those out of which the fire is easily excusd. Of the *Pyrites* there are many kinds, and so many as that I will not now speak of them all; but rather deferre that (according to the successe of this first fruits of our labours) for an addition. So many are the species of this stone, as there are kinds of metall; but I omit them: Onely this, Dioscorides saith of the best of the species, that it is like unto brasse, and that brasse is made of it.

The

The place.

It is found in *Arabia*, and from thence cometh its name of *Marchafite*, and in *Germanie*, in *Greece*, and in *England*.

Of its use.

It is hot and dry of quality, & fit for the discussion of humours, and for this purpose it is used in physick. Dioscorides saith, they are fit to beget fire in any dry or fungous matter, because of the abundance of fire that they yield. They are usually calcined for physick use. By Tartar water there may sulphur be extracted out of them.

CHAP. LXXXIX.

Of the Silex or Flint.

THe *Silex* or *Flint* is a stone harder then the *Marble*, and very difficult to be engraven: extrinsecally it is commonly grayish, without angles and smooth; intrinsecally it is firmly compacted, and without pores; for the most part it is obscure or black within. This stone will very well saith Boetius supply the place of the *Lapis Lydius* or *Touchstone*.

*Description of
the stone.*

Its names.

In Hebrew it is called חרמִישׁ (*hoc est*) *Silex vel petra durissima*, sometimes nomen צור is joyned with it *ad אַזְנוֹן* or to strengthen its signification, as *Deut. 8. 15.* מצור החרמִישׁ (that is) *rupē petra,*

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hoc est à rupe durissima, vel à rupe ex ipso saxo. And again Deut. 32. 13. *אֲבִן־שֵׂפֶלֶם* that is, *de petra ruperis.* In Greek *χάλιξ.* Of Thucydides the flints are called *πέχλις.* In Latine *Silex* and *Chalix.* In Germane *ein Kyßling,* or *oder Kyßelstein,* and *ein Teverstein.* In English the *Flint* or *Pibble-stone.*

Its kinds.

There are divers kinds of this stone saith Boetius some of which are red, some white, some yellow, some green, some of mixt colours.

Rulandus speaketh of three principall kinds of this stone, which are subdivided into many kinds, as

1. Of various coloured *Flints.*
2. Of non-pellucid *Flints.*
3. Of pellucid *Flints.*

The pellucid ones, white ones, or translucide ones, which are one and the same kind, may be molten: these are those stones which Aristotle calleth *Pýrimachos.* Those that use to melt mettals, may poure these upon their melted mettals, that they may swim over them, and so hinder the evaporating of their metall.

Of the place.

The *Flints* are found in *Noremberge,* In *Germany,* In *Saxony,* In the river of *Trebisa,* In *England,* and indeed in all stony places almost every where.

Their dignity value and use.

For dignity and value; the translucide and diaphanous ones, are for their beaurty, of esteem and worth;

worth; these by jewellers are engraven and sold for Bohemian *Diamonds*; factitious beautifull stones are by artists many times framed of these; and of these may be made excellent glasses.

The *Flints* are altogether unmeet for building, because they will not imbibe the lime.

They are commonly of use to procure fire by, and this they do very easily by reason of the abundance of sparks which they yield, and which is excus'd from them by percussion.

Oftentimes these stones are found beautified with Personages, and many other pretty sportings of nature in her workmanship, which are very delightfull, of which more at large we may hereafter have an occasion to speak.

In the mean while,

Δόξα τῷ Θεῷ, Cujus potestate freti, huic operi
primitiarum nostri laboris finem posuimus.

FINIS.