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THE
H I S T O R Y
OF THE
A R T S and S C I E N C E S
OF THE
A N T I E N T S,

Under the following HEADS:

In THREE VOLUMES.

V O L. I.

AGRICULTURE, COMMERCE, ARCHITECTURE, SCULPTURE,
PAINTING, MUSIC, the ART MILITARY.

V O L. II.

ART MILITARY, GRAMMAR, PHILOLOGY, RHETORIC, POETRY.

V O L. III.

POETRY, HISTORY, ELOQUENCE, PHILOSOPHY, CIVIL LAW,
METAPHYSICS and PHYSICS, PHYSIC, BOTANY, CHYMISTRY,
ANATOMY, MATHEMATICS, GEOMETRY, ASTRONOMY,
ARITHMETIC, GEOGRAPHY, and NAVIGATION.

By- Mr. R O L L I N,

*Late Principal of the University of Paris, Professor of Eloquence in
the Royal College, and Member of the Royal Academy of Inscryp-
tions and Belles Lettres.*

Translated from the FRENCH.

The S E C O N D E D I T I O N.

Illustrated with Fifty-two Copper Plates, representing the CIVIL
and MILITARY ARCHITECTURE of the ANTIENTS, their
TEMPLES, MACHINES, ENGINES of WAR, PAINTING, &c.

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Printed for J. and F. RIVINGTON; R. BALDWIN; HAWES,
CLARKE and COLLINS; R. HORSFIELD; W. JOHNSTON;
W. OWEN; T. CASLON; S. CROWDER; B. LAW; Z. STUART;
ROBINSON and ROBERTS; and, NEWBERY and CARNAN.

M D C C L X V I I I.

H I S T O R Y

OF THE

ARTS AND SCIENCES

IN GREAT BRITAIN

AND IRELAND

FROM THE BEGINNING OF THE

WORLD TO THE PRESENT

BY JOHN HENRY

WELLESLEY

OF THE UNIVERSITY OF

OXFORD

IN TWO VOLUMES

THE SECOND VOLUME

OF THE ARTS AND SCIENCES

IN GREAT BRITAIN

AND IRELAND

THE
H I S T O R Y
OF THE
A R T S and S C I E N C E S
OF THE
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ROBINSON and ROBERTS; and, NEWBERY and CARNAN.

M D C C L X V I I I.

1857

AMERICAN

TRANSLATOR

OF THE

CLASSICAL

READER

Upon reading this part of the work
 it is in French, it was observed
 several important points, that in
 fact, in some of many things relating
 to the subject of medicine, which was
 not mentioned in the work, as was un-
 derstood in the original, and
 in a common mistake, it was made
 of the fact, in treating the subject of
 medicine and the human body, and
 therefore added the lists of them, which
 which they could not be explained.

To remove this Obscurity, and render the
 work more perfect, the editor was
 obliged

THE
TRANSLATOR
TO THE
READER.

UPON reading this part of the antient history in French, it was observed by several judicious persons, that the author's accounts of many things relating to civil and military architecture, machines and engines of war, &c. were, (as was unavoidable in describing such things) obscure, and in a manner unintelligible. He was sensible of this himself, in treating the Orders of architecture and the Roman camp; and therefore added the Plates of them, without which they could not be explaid.

To remove this Obscurity, and render this version the more perfect, the editors were

The TRANSLATOR to the READER.

advised to have recourse to the several works cited by Mr. Rollin. From these (*Perrault's Vitruvius, Folard's Polybius, Montfaucon's Antiquities, &c.*) the plates in these volumes are engraven, and the explanations of them extracted in as brief a manner as possible; which, it is hoped, will not only answer the purpose they were intended for, but throw such a new light into many parts of the preceding history, where the things they represent are mentioned, as will be equally useful and agreeable to the reader.

Dr. Richard Mead has been pleased to communicate an antient picture in his possession, which was lately found at Rome, in the ruins of the palace of Augustus Cæsar, and supposed to be painted in his time, a Print from which, engraven by Mr. Barón, exactly the same size with the original, is inserted in the section of painting. This print being a reverse of the picture, occasions the crown's appearing in the left hand of Augustus. The reason an account of it was not inserted in the same place, is because the original did not arrive from Italy, till this volume was almost printed off: And as the Latin inscription at the bottom is the best explanation that can be given of it, it is necessary to insert the following translation of it in this place, for the use of the English reader.

The TRANSLATOR to the READER.

“ A fragment of an antient painting in
“ fresco, found anno 1737, in the ruins of
“ the palace of Augustus Cæsar, in the gar-
“ dens of Farnese upon mount Palatine at
“ Rome. It contains six figures exquisitely
“ painted in the most lively and beautiful
“ colours; by one of which Augustus is re-
“ presented sitting, and holding out a crown
“ to some person, whose figure is broke off:
“ the rest represent the courtiers attending,
“ amongst whom are Mæcenas in an azure
“ robe, and behind him M. Agrippa with
“ his right hand upon the shoulder of the
“ former; as appears from the resemblance
“ of these figures to their coins and gems.

THE
A U T H O R
TO THE
R E A D E R

THE treating of the arts and sciences has carried me much farther than I imagined. I have repented more than once my having embarked in an undertaking, which required a great variety of knowledge, and that too in no common degree of perfection, to give a just, precise, and entire idea of the several subjects to which it extends. I soon discovered how unequal I was to the task, and have endeavoured to supply my own defects, by making the best use I could of the labours of such as are most expert in each art, that I might not lose myself in ways, of which some were little familiar, and others entirely unknown, to me.

I saw with secret joy the approaching end of my journey; not that I might abandon myself

To the R E A D E R.

myself to a soft and trivial inertion, inconsistent with an honest man, and still more so with a christian; but to enjoy a tranquillity and repose, which might admit me to devote the few days I have yet to live, solely to the studies and exercises necessary to prepare me for that last moment, which is to determine my fate for evermore. I imagined, that, after having laboured more than fifty years for others, I might be permitted to take pains for the future only for myself; and to renounce entirely the study of profane authors, which may please the understanding, but are not capable of nourishing the soul. I was strongly inclined to make a choice that appeared so suitable, and almost necessary to me.

However, the desire of the public, of which I could not be ignorant, gave me some pause upon this head. I did not think proper to determine for myself, nor to take my own inclination for the rule of my conduct. I consulted separately several learned and wise friends, who all condemned me to undertake the Roman history: I mean that of the Republic. So unexpected a uniformity of sentiments surprized me, and made it no longer difficult for me to comply with advice, which I considered as an assured token of the will of God in regard to me.

I shall begin this new work, as soon as I have finished the other, which I am in hopes

To the R E A D E R.

to do very speedily*. At seventy-six years of age I have no time to lose; not that I flatter myself with being able to compleat it, though I shall apply myself to it as much as my strength and health will admit. Having only undertaken my first history, in discharge of the function, to which I conceived God had called me; that of beginning to form the hearts of youth; to give them the first tincture of virtue by the examples of the great men of the pagan world, and to lay those first foundations for conducting them on to more solid virtue; I find myself more than ever obliged to have the same views in the history I am about to undertake. I shall endeavour not to forget, that God, in taking me off in the course of my work (for that I ought to expect) will not examine whether it be well or ill wrote; or received with, or without applause; but whether I composed it solely to please him, and render some service to mankind. That thought will only augment my ardor and zeal, when I reflect for whom I take pains; and engage me to make new efforts, in order to answer the expectation of the public, improving as much as I can, from the good advice that has been kindly given me, in regard to my first history.

I have only to add, that I should be much to be pitied, if I expected no other reward

* This history of the Roman republic is translated into English.

To the R E A D E R.

for my long and laborious application, than the praises of this world. And yet who can flatter himself with being sufficiently upon his guard against so grateful an illusion? The labours of the pagans had no other view; and it is accordingly written of them: *Receperunt mercedem suam; Vani vanam*, adds one of the fathers, *They have received their reward, as vain as themselves.* I ought much rather to propose to myself the example of that servant, who employs the whole industry and application in making the best use he can of the few talents his master has confided to him; in order to hear like him at the last day these words of consolation, far superior to all human praises: *Well done thou good and faithful servant, thou hast been faithful over a few things; I will make thee ruler over many things; enter thou into the joy of thy Lord.* Amen. Amen.

Mat. xxv.
21.

OF AGRICULTURE

ARTICLE I

The first and most necessary part of agriculture is the clearing of the land. This is done by cutting down the trees and brushwood, and by burning the same. The ashes of the brushwood are used as a manure for the soil.

ARTICLE II

The second part of agriculture is the sowing of the seed. This is done in the month of March or April, according to the season of the year.

ARTICLE III

The third part of agriculture is the weeding of the crops. This is done by pulling up the weeds which grow up among the plants.

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T H E

A N T I E N T H I S T O R Y, &c.

O f A R T S a n d S C I E N C E S.

I N T R O D U C T I O N.

How useful the invention of arts and sciences has been to mankind. It ought to be attributed to God.

THE history of arts and sciences, and of the persons, who have most eminently distinguished themselves by them, to speak properly, is the history of human wit, which in some sense does not give place to that of princes and heroes, whom common opinion places in the highest degree of elevation and glory. I do not intend, by speaking in this manner, to strike at the difference of rank and condition, nor to confound or level the order, which God himself has instituted amongst men. He has placed princes, kings, and rulers of states over our heads, with whom he has deposited his authority; and after them generals of armies, ministers, magistrates, and all those with whom the sovereign divides the cares of government. The honours paid them, and the pre-eminence they possess, are no usurpation on their side. It is

Vol. I. B the

I N T R O D U C T I O N .

the divine providence itself, that has assigned them their high stations, and demands submission, obedience, and respect for those that sit in its place.

But there is also another order of things, and, if I may be permitted to say so, another disposition of the same providence, which, without regard to the first kind of greatness I have mentioned, establishes a quite different species of eminence, in which distinction arises neither from birth, riches, authority, nor elevation of place; but from merit and knowledge alone. It is the same providence, that regulates rank also of this kind, by the free and entirely voluntary dispensation of the talents of the mind, which it distributes in what proportion, and to whom it pleases, without any regard to quality and nobility of person. It forms, from the assemblage of the learned of all kinds, a new species of empire, infinitely more extensive than all others, which takes in all ages and nations, without regard to age, sex, condition, or climate. Here the plebeian finds himself upon the level with the nobleman, the subject with the prince, nay, often his superior.

The principal law and justest title to deserving solid praises in this empire of literature, is, that every member of it be contented with his own place; that he be void of all envy for the glory of others; that he looks upon them as his colleagues, destined as well as himself, by providence, to enrich society, and become its benefactors; and that he remembers, with gratitude, from whom he holds his talents, and for what ends they have been conferred upon him. For, indeed, how can those, who distinguish themselves most amongst the learned, believe, that they have that extent of memory, facility of comprehending, industry to invent and make discoveries; that beauty, vivacity, and penetration of mind from themselves; and, if they possess all these advantages from something exterior, how can they

they

they assume any vanity from them? But can they believe they may use them at their own pleasure, and seek, in the application they make of them, only their own glory and reputation? As providence places kings upon their thrones solely for the good of their people, it distributes also the different talents of the mind solely for the benefit of the public. But in the same manner as we sometimes see in states usurpers, and tyrants, who, to exalt themselves alone, oppress all others; there may also arise amongst the learned, if I may be allowed to say so, a kind of tyranny of the mind, which consists in regarding the successes of others with an evil eye; in being offended at their reputation; in lessening their merit; in esteeming only one's self, and in affecting to reign alone: A hateful defect, and very dishonourable to learning. The solid glory of the empire of learning in the present question, I cannot repeat it too often, is not to labour for one's self, but for mankind; and this, I am so bold to say, is what places it exceedingly above all the other empires of the world.

The victories which take up the greatest part of history, and attract admiration the most, have generally no other effects, but the desolation of countries, the destruction of cities, and the slaughter of men. Those so much boasted heroes of antiquity, have they made a single man the better? Have they made many men happy? And if, by the founding of states and empires, they have procured posterity some advantage, how dearly have they made their cotemporaries pay for it, by the rivers of blood they have shed? Those very advantages are confined to certain places, and have a certain duration. Of what utility to us, at this day, are either Nimrod, Cyrus, or Alexander? All those great names, all those victories, which have astonished mankind from time to time; those princes and conquerors, with all their magnificence and vast designs, are

I N T R O D U C T I O N .

returned into nothing with regard to us; they are dispersed like vapours, and are vanished like phantoms.

But the inventors of arts and sciences have laboured for all ages of the world. We still enjoy the fruits of their application and industry. They have provided, at a great distance, for all our occasions. They have procured for us all the conveniencies of life. They have converted all nature to our uses. They have reduced the most indocile matter to our service. They have taught us to extract from the bowels of the earth, and even from the deeps of the sea, the most precious riches; and, what is infinitely more estimable, they have opened to us the treasures of all the sciences, and have guided us to knowledge the most sublime, the most useful, and the most worthy of our nature. They have put into our hands, and placed before our eyes, whatever is most proper to adorn the mind, to direct our manners, and to form good citizens, good magistrates, and good princes.

These are part of the benefits we have received from those who have invented and brought arts and sciences to perfection. The better to know their value, let us transport ourselves in imagination back to the infancy of the world, and those gross ages, when man, condemned to eat his bread by the sweat of his brow, was without aids and instruments, and obliged however to cultivate the earth, that he might extract nourishment from it; to erect himself huts and roofs for his security; to provide cloathing for his defence against the frosts and rains; and, in a word, to find out the means to satisfy all the necessities of life. What labours, what difficulties, what disquiets! All which are spared us.

We do not sufficiently consider the obligations we are under to those equally industrious and laborious men, who made the first essays in arts, and applied

applied themselves in those useful but elaborate researches. That we are commodiously housed, that we are cloathed, that we have cities, walls, habitations, temples; to their industry and labour we are indebted for them all. It is by their aid our hands cultivate the fields, build houses, make stuffs and habits, work in brass and iron; and, to make a transition from the useful to the agreeable, that we use the pencil, handle the chissel and graver, and touch instruments of music; these are solid and permanent advantages and emoluments, which have always been increasing from their origin; which extend to all ages and nations, and to all mankind in particular; which will perpetuate themselves throughout all times, and continue to the end of the world. Have all the conquerors together done any thing, that can be imagined parallel with such services? All our admiration, however, turns generally on the side of these heroes in blood, whilst we scarce take notice of what we owe to the inventors of arts.

But we must go farther back, and render the just homage of praise and acknowledgment to him, who alone has been, and was capable of being, their author. This is a truth confessed by the Pagans themselves; and Cicero attests most expressly, that men have all the conveniencies of life from God alone: *Omnes mortales sic habent, externas commoditates a diis se habere.*

Lib. 3. De
nat. deor.
n. 36.

Pliny the naturalist explains himself still in a stronger manner, where he speaks of the wonderful effects of simples and herbs in regard to distempers; and the same principle may be applied to a thousand other effects, which seem more astonishing than those. * “ It is, says he, to understand very ill the

* *Quæ si quis ullo fortè ab homine excogitari potuisse credit, ingrâtè deorum munera intelligit—Quod certe casu repertum quis dubitet? Hic ergo casus, hic est ille, qui plurima in vita invenit Deus. Hoc habet nomen, per quem intelligitur eadem & parens rerum omnium & magistra natura. Plin.*

“ gifts of the divinity, and to repay them with
 “ ingratitude, to believe them capable of being
 “ invented by man. It is true, chance seems
 “ to have given birth to these discoveries; but
 “ that chance is God himself; by which name,
 “ as well as by that of Nature, we are to under-
 “ stand him alone, who is the great parent of all
 “ things.”

In effect, how little soever we reflect upon the relation and proportion which appears, for instance, between the works of gold, silver, iron, brass, lead, and the rude mass as it lies hid in the earth, of which they are formed; between linen cloth, whether fine and thin, or coarse and strong, and flax and hemp; between stuffs of all sorts, and the fleece of sheep; between the glossy beauty of wrought silks, and the deformity of an hideous insect: we ought to assure ourselves, that man, abandoned to his own faculties, could never have been able to make such happy discoveries. It is true, as Pliny has observed, that chance has seemed to give birth to most inventions: But who does not see, that God, to put our gratitude to trial, takes pleasure to conceal himself under those fortuitous events, as under so many veils, through which our reason, whenever so little enlightened by faith, traces with ease the beneficent hand, which confers so many gifts upon us?

The divine providence shews itself no less in many modern discoveries, which now appear to us exceedingly easy; and however escaped, during all preceding ages, the knowledge and inquiries of the many persons, always intent upon the study and perfection of arts; till it pleased God to open their eyes, and to shew them what they did not see before.

In this number may be reckoned both wind and water mills, so commodious for the uses of life, which however are not very antient. The antients
 engraved

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engraved upon copper. Whence was it, that they never reflected, that, by impressing upon paper what they had engraved, they might write that in a moment, which they had been so long in cutting with a tool? It is, notwithstanding, only about three hundred years since the art of printing books has been discovered. The same may be said of gunpowder, of which our antient conquerors were in great want, and which would have very much abridged the length of their sieges. The compass, that is to say, the needle touched with the loadstone, suspended upon an axis, is of such wonderful use, that to it alone we stand indebted for the knowledge of the new world, and all the people of the earth are united by commerce. How came it, that mankind, who knew all the other properties of the loadstone, were so long without discovering one of such great importance?

We may conclude in the same manner, I think, not only in regard to the incredible difficulty of some discoveries, which do not offer themselves by any outward appearances, and are, however, almost as old as the world; but from the extreme facility of other inventions, which seem to guide us to them, and yet have not been discovered till after many ages; that both the one and the other are absolutely disposed by the direction of a superior Being, which governs the universe with infinite wisdom and power.

We are indeed ignorant of the reasons, which have induced God to observe a different conduct in the manifestation of these mysteries of nature, at least in a great measure; but that conduct is, however, no less to be revered. What he suffers us sometimes to see of it, ought to instruct us in respect to all the rest. Christopher Columbus conceives the design to go in search of new worlds. He addresses himself, for that end, to several princes, who look upon his enterprize as madness,

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and it seemed such in effect. But he had within him, with regard to this enterprize, an inherent impulse, an ardent and continual desire, which rendered him passionate, restless, and invincible to all obstacles and remonstrances. Who was it, that inspired him with this bold design, and gave him such inflexible constancy, but God alone, who had resolved from all eternity to enlighten the people of that new world with the lights of the gospel? The invention of the compass was the occasion of it. Providence had assigned a precise time for this great event. The moment could neither be advanced nor retarded. Hence it was that this discovery had been so long deferred, and was afterwards so suddenly and so courageously executed.

After these observations, which I thought useful to many of my readers, I shall proceed to my subject. I shall divide all that relates to the arts and sciences into three books. In the first I shall treat of agriculture, commerce, architecture, sculpture, painting, and music. In the second, I shall treat of the art military, and what regards the raising and maintaining troops, battles, and sieges, both by sea and land. In the last book, with which my work will conclude, I shall run over the arts and sciences, that have most relation to the mind: Grammar, poetry, history, rhetoric, and philosophy, with all the branches that either depend on, or have any relation to them.

I must observe beforehand, with the same freedom I have professed hitherto, that I undertake to treat a subject of which many parts are almost entirely unknown to me. For this reason, I shall have occasion for new indulgence. I demand permission therefore to make use freely, as I have always done, (and am now reduced to do more than ever) of all the helps I shall meet with in my way. I shall hazard losing the glory of being an author and inventor: But I willingly renounce it,
provided

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provided I have that of pleasing my readers, and of being any way useful to them. Profound Erudition must not be expected here, though the subject seems to imply it. I do not pretend to instruct the learned; my aim is to make choice of that from all the arts, which may best suit the capacities of the generality of readers.



THE

T H E
 H I S T O R Y
 O F T H E
 A R T S and S C I E N C E S
 O F T H E
 A N C I E N T S, &c.

C H A P T E R I.
 O F A G R I C U L T U R E.

A R T I C L E I.

Antiquity of agriculture. Its utility. The esteem it was in amongst the antients. How important it is to place it in honour, and how dangerous to neglect the application to it.

IMAY with justice place agriculture at the head of the arts, which has certainly the advantage of all others, as well with regard to its antiquity as utility. It may be said to be as ancient as the world, having taken birth in the terrestrial Paradise itself, when Adam, newly come forth from the hands of his Creator, still possessed the precious but frail treasure of his innocence; God, having placed him in the garden of delights, commanded him to cultivate it; *ut operaretur illum: to dress and keep it.* That culture was not painful and laborious, but easy and agreeable; it was to serve him Gen. ii. 15.

him for amufement, and to make him contemplate in the productions of the earth the wifdom and liberality of his Mafter.

The fin of Adam having overthrown this order, and drawn upon him the mournful decree, which condemned him to eat his bread by the fweat of his brow; God changed his delight into chaftifement, and fubjected him to hard labour and toil; which he had never known, had he continued ignorant of evil. The earth, become ftubborn and rebellious to his orders, to punifh his revolt againft God, brought forth thorns and thiftles. Violent means were neceffary to compel it to pay him the tribute, of which his ingratitude had rendered him unworthy, and to force it, by labour, to fupply him every year with the nourifhment, which before was given him freely and without trouble.

From hence therefore we are to trace the origin of agriculture, which, from the punifhment it was at firft, is become, by the fingular goodnefs of God, in a manner the mother and nurfe of the human race. It is in effect the fource of folid wealth and treafures of a real value, which do not depend upon the opinion of men; which fuffice at once to neceffity and enjoyment, by which a nation is in no want of its neighbours, and often neceffary to them; which make the principal revenue of a ftate, and fupply the defect of all others, when they happen to fail. Though mines of gold and filver fhould be exhausted, and the fpecies made of them loft; though pearls and diamonds fhould remain hid in the womb of the earth and fea; though commerce with ftrangers fhould be prohibited; though all arts, which have no other object than embellifhment and fplendor, fhould be abolifhed; the fertility of the earth alone would afford an abundant fupply for the occafions of the public, and furnifh fubfiftence both for the people, and armies to defend it.

We ought not to be surprized therefore, that agriculture was in so much honour amongst the antients; it ought rather to seem wonderful that it ever should cease to be so, and that of all professions the most necessary and most indispensable should have fallen into so great contempt. We have seen in the whole course of our history, that the principal attention of the wisest princes, and the most able ministers, was to support and encourage husbandry.

Amongst the Assyrians and Persians the Satrapæ were rewarded, in whose governments the lands were well cultivated, and those punished who neglected that part of their duty. Numa Pompilius, one of the wisest kings antiquity mentions, and who best understood and discharged the duties of the sovereignty, divided the whole territory of Rome into different cantons. An exact account was rendered him of the manner in which they were cultivated, and he caused the husbandmen to come before him, that he might praise and encourage those whose lands were well manured, and reproach others with their want of industry. The riches of the earth, says the historian, were looked upon as the justest and most legitimate of all riches, and much preferred to the advantages obtained by war, which are of no long duration. Ancus Martius, the fourth king of the Romans, who piqued himself upon treading in the steps of Numa, next to the adoration of the gods, and reverence for religion, recommended nothing so much to the people, as the cultivation of lands, and the breeding of cattle. The Romans long retained this disposition, and* in the latter times, whoever did not discharge this duty well, drew upon himself the animadversion of the censor.

* *Agrum malè colere Censorium probrum adjudicabatur.*
Plin. l. 18. c. 3.

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It is known from never-failing experience, that the culture of lands, and the breeding of cattle, which is a consequence and necessary part of it, has always been a certain and inexhaustible source of wealth and abundance. Agriculture was in no part of the world in higher consideration than in Egypt, where it was the particular object of government and policy: and no country was ever better peopled, richer, or more powerful. The strength of a state is not to be computed by extent of country, but by the number of its citizens, and the utility of their labour.

It is hard to conceive how so small a tract as the land of Promise should be able to contain and nourish an almost innumerable multitude of inhabitants: this was from the whole country's being cultivated with extreme application.

What history relates of the opulence of several cities in Sicily, and in particular of the immense riches of Syracuse, of the magnificence of its buildings, of the powerful fleets it fitted out, and the numerous armies it had on foot, would appear incredible, if not attested by all the antient authors. From whence can we believe, that Sicily could raise wherewith to support such enormous expences, if not from the increase of their lands, which were improved with wonderful industry? We may judge of their application to the culture of land, from the care taken by one of the most powerful kings of Syracuse, (Hiero II.) to compose a book upon that subject, in which he gave wise advice and excellent rules, for supporting and augmenting the fertility of the country.

Besides Hiero, * other princes are mentioned, who did not think it unworthy their birth and rank to leave posterity precepts upon agriculture; so sensible were they of its utility and value: Of this

* De cultura agri præcipere principale fuit, etiam apud exteros. *Plin.* l. 18. c. 3.

number were Attalus, surnamed Philometer, king of Pergamus, and Archelaus of Cappadocia. I am less surprized, that Plato, Xenophon, Aristotle, and other philosophers, who have treated politics in particular, have not omitted this article, which makes an essential part of that subject. But who would expect to see a Carthaginian general amongst these authors? I mean Mago. He must have treated this matter with great extent, as his work, which was found at the taking of Carthage, consisted of twenty-eight volumes. So high a value was set on it, that the senate ordered it to be translated, and one of the principal magistrates took upon himself the care of doing it. Cassius Dionysius of Utica had before translated it out of the Punic language into Greek.

D. Syllanus.

Varr. de re rust. l. 1. c. 1.

Cato, the censor, had however published his books upon the same subject. For Rome was not then entirely depraved, and the taste for the ancient simplicity still continued in a certain degree. She remembered with joy and admiration, that in ancient times her senators lived almost continually in the country; that they cultivated their lands with their own hands, without ever deviating into rapacious and unjust desires of those of other men; and that * consuls and dictators were often taken from the plow. In those happy times, says Pliny, † the earth, glorious in seeing herself cultivated by the hands of triumphant victors, seemed to make new efforts, and to produce her fruits with greater abundance; that is,

* Antiquitus ab aratro arcessabantur ut consules fierent—Attilium sua manu spargentem semen qui missi erant convenerunt—Suos agros studiosè colebant, non alienos cupidè appetebant. *Cic. pro Rose. Amer. n. 50.*

† Quæ nam ego tantæ ubertatis causa erat? Ipsorum tunc manibus Imperatorum colebantur agri (ut fas est credere) gaudente terra vincere laureato, & triumphali aratore: sive illi eadem curâ semina tractabant, quâ bellè, eademque diligentia arva disponebant, quâ castra: sive honestis manibus omnia lætius proveniunt, quoniam & curiosius fiunt. *Plin. l. 18. c. 3.*

no doubt, because those great men, equally capable of handling the plow and their arms, of sowing and conquering lands, applied themselves, with more attention to their labour, and were also more successful in effect of it.

And indeed, when a person of condition, with a superior genius, applies himself to arts, experience shews us, that he does it with greater ability, force of mind, industry, taste, and with more inventions, new discoveries, and various experiments; whereas an ordinary man confines himself fervently within the common road, and to his antient customs. Nothing opens his eyes, nothing raises him above his old habitudes; and after many years of labour he continues still the same, without making any progress in the profession he follows.

Those great men I have mentioned, had never undertaken to write upon agriculture, if they had not been sensible of its importance, which most of them had personally experienced. We know what a taste Cato had for a rural life, and with what application he employed himself in it. The example of an antient Roman, whose farm adjoined to his, was of infinite service to him. (This was Manlius Curius Dentatus, who had thrice received the honour of triumph.) Cato often went to walk in it, and considering the * small extent of that land, the poverty and simplicity of the house, he was struck with admiration for that illustrious person, who, when he became the greatest of the Romans, having conquered the most warlike nations, and driven Pyrrhus out of Italy, cultivated this little land with his own hands, and, after so many triumphs, inhabited so wretched a house. Is it

* Hunc, & incomptis Curium capillis
 Utilem bello tulit & Camillum
 Sæva paupertas, & avitus apto
 Cum lare fundus.

here, * said he to himself, that the ambassadors of the Samnites found him by his fire-side, boiling roots, and received this wise answer from him, after having offered him a great sum of money: That gold was a thing of small value to one who could be satisfied with such a dinner; and that, for his part, he thought it more glorious to conquer those who had that gold, than to possess it himself. Full of these thoughts, Cato returned home, and making an estimate of his house, lands, slaves, and expences, he applied himself to husbandry with more ardor, and retrenched all needless superfluity.

Though very young at that time, he was the admiration of all that knew him. Valerius Flaccus, one of the most noble and most powerful persons of Rome, had lands contiguous to Cato's small farm. He there often heard his slaves speak of his neighbour's manner of living, and of his labour in the field. He was told, that in the morning he used to go to the small cities in the neighbourhood, to plead and defend the causes of those, who applied to him for that purpose. That from thence he returned into the field, where throwing a mean coat over his shoulders in winter, and almost naked in summer, he worked with his servants, and after they had done, he sat down with them at table, and eat the same bread, and drank the † same wine.

We see by these examples how far the antient Romans carried the love of simplicity, poverty,

* Curio ad focum sedenti magnum auri pondus Samnites cum attulissent repudiati ab eo sunt. *Non enim aurum habere præclarum sibi videri dixit, sed iis qui haberent aurum imperare.* Cicero makes Cato himself speak thus, in his book upon old age, n. 55.

† This puts me in mind of a fine saying of Pliny the younger's, who gave his freedmen the same wine he drank himself. When somebody represented that this must be very chargeable to him: No, said he; my freedmen don't drink the same wine I drink, but I the same they do. *Quia scilicet liberti mei non idem quod ego bibunt, sed idem ego quod liberti.* Plin. l. 2. Epist. 6.

Var. l. 3.
c. 2.

and labour. I read with singular pleasure the tart and sensible reproaches, which a Roman senator makes to the augur Appius Claudius, upon the magnificence of his country-houses, by comparing them to the farm where they then were. “ Here, “ said he, we see neither painting, statues, carving, “ nor mosaic work; but, to make us amends, we “ have all that is necessary to the cultivation of “ lands, the dressing of vines, and the feeding of “ cattle. In your house every thing shines with “ gold, silver, and marble; but there is no sign “ of arable lands or vineyards. We find there “ neither ox, nor cow, nor sheep. There is neither “ hay in cocks, vintage in the cellars, nor harvest “ in the barn, Can this be called a farm? In what “ does it resemble that of your grandfather, and “ great-grandfather?”

After luxury was introduced to this height amongst the Romans, the lands were far from being cultivated, or producing revenues as in antient days. * At a time when they were in the hands of slaves or abject mercenaries, what could be expected from such workmen, who were forced to their labour only by ill treatment? This was one of the great, and most imprudent neglects, remarked by all the writers upon this subject in the latter times: because to cultivate lands properly, it is necessary to take pleasure and be delighted with the work, and for that end to find it for one’s interest and gain to follow it.

It is therefore highly important, that the whole land of a kingdom should be employed to the best advantage, which is much more useful than to extend its limits; in order to this each master of a family, residing in the small towns and villages, should have some portion of land appropriated to

* Nunc eadem illa (arva) vinditi pedes, damnatæ manus, inscrip i vultus exercenti—Nos miramur ergastulorum non eadem emolumenta esse, quæ fuerint Imperatorum. *Plin. l. 18. c. 3.*

himself;

himself; whence it would follow, that this field, by being his own, would be dearer to him than all others, and be cultivated with application; that his family would think such employment their interest, attach themselves to their farm, subsist upon it, and by that means be kept within the country. When the country-people are not in their own estates, and are only employed for hire, they are very negligent in their labour, and even work with regret.

* A lord and land-holder ought to desire, that their lands and estates should continue a long time in the same family, and that their farmers should succeed in them from father to son; from whence a quite different regard for them would arise: And what conduced to the interest of particulars, would also promote the general good of the state.

But when an husbandman or farmer has acquired some wealth by their industry and application, which is much to be desired by the landlord for his own advantage; † it is not by this gain, says Cicero, the rents laid on them are to be measured, but by the lands themselves, they turn so much to their account; the produce of which ought to be equitably estimated and examined into, for ascertaining what new imposition of rents they will bear. For to rack-rent and oppress those who have applied themselves well to their business, only because they have done so, is to punish, and indeed to abolish, industry; whereas, in all well regulated states, it has always been thought necessary to animate it by emulation and reward.

One reason of the small produce of the lands, is, because agriculture is not looked upon as an art

* Lucius Volusius asseverantem audivi, patris familias felicissimum fundum esse, qui colonos indigenas haberet, & tanquam in paterna possessione notois, jam inde a cunabulis longa familiaritate retineret. *Colum. l. 1. c. 7.*

† Cum Aratori aliquod onus imponitur, non omnes, si quæ sunt præterea, facultates sed arationis ipsius vis ac ratio consideranda est, quid ea sustinere, quid pati, quid efficere possit ac debeat. *Cic. Ferr. de frum. n. 199.*

Colum.
l. 1. c. 1.

that requires study, reflections, and rules: every one abandons himself to his own taste and method, whilst no-body thinks of making a serious scrutiny into them, of trying experiments, and * of uniting precepts with experience. The antients did not think in this manner. They judged three things necessary to success in agriculture. *The will*: this employment should be loved, desired, and delighted in, and followed in consequence out of pleasure. *The power*: it is requisite to be in a condition to make the necessary expences for the breeding and fattening of cattle and fowl of all sorts, for labour, and for whatever is necessary to the manuring and improving of lands; and this is what most of our husbandmen want. *The skill*: it is necessary to have studied maturely all that relates to the cultivation of lands, without which the two first things are not only ineffectual, but occasion great losses to the master of a family, who has the affliction to see, that the produce of the land is far from answering the expences he has been at, or the hopes he had conceived from them; because those expences have been laid out without discretion, and without knowledge of the application of them. To these three heads a fourth may be added, which the antients had not forgot, that is, † *experience*, which presides in all arts, is infinitely above precepts, and makes even the faults we have committed our advantage: for, from doing wrong, we often learn to do right.

Agriculture was in quite different esteem with the antients, to what it is with us: which is evident from the multitude and quality of the writers upon this subject. Varro cites to the number of fifty

* Debemus & imitari alios, & aliter ut faciamus quadam experientia tentare. *Varro*. l. 1. c. 18.

† Usus & experientia dominantur in artibus, neque est ulla disciplina in qua non peccando discatur. Nam ubi quid perperam administratum cesserit improspere, vitatur quod sefellerat, illuminatque rectam viam docentis magisterium. *Colum*. *ibid*.

amongst the Greeks only. He wrote upon it also himself, and Columella after him. The three Latin authors, Cato, Varro, and Columella, entered into a wonderful detail upon all the parts of agriculture. Would it be an ungrateful and barren employment to compare their opinions and reflections with the modern practice?

Columella, who lived in the time of Tiberius, Colum. in præem. l. 1. deplores, in a very warm and eloquent manner, the general contempt into which agriculture was fallen in his time, and the persuasion men were under, that, to succeed in it, there was no occasion for a master. “ I see at Rome, said he, the schools
 “ of philosophers, rhetoricians, geometricians,
 “ musicians, and, what is more astonishing, of peo-
 “ ple solely employed, some in preparing dishes
 “ proper to pique the appetite, and excite glut-
 “ tony; and others to adorn the head with artificial
 “ curls, but not one for agriculture*. However,
 “ the rest might be well spared; and the republic
 “ flourished long without any of those frivolous
 “ arts; but it is not possible to want that of hus-
 “ bandry, because life depends upon it.

“ Besides, is there a more honest or legal means
 “ of preserving, or increasing, a patrimony? Is the
 “ profession of arms of this kind, and the acqui-
 “ sition of spoils always dyed with human blood,
 “ and amassed by the ruin of an infinity of per-
 “ sons? Or is commerce so, which, tearing citizens
 “ away from their native country, exposes them to
 “ the fury of the winds and seas, and drags them
 “ into unknown worlds in pursuit of riches? Or is
 “ the trade † of money and usury more laudable,
 “ odious and fatal as they are, even to those they
 “ seem to relieve? Can any one compare any of

* Sine ludicris artibus—olim satis felices fuere futuræque sunt urbes; at sine agricultoribus nec consistere mortales, nec ali posse manifestum est.

† An sceneratio probabilior sit etiam his invisa quibus succurrere videtur.

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“ these methods with wise and innocent agricul-
 “ ture, which only the depravity of our manners
 “ can render contemptible, and, by a necessary con-
 “ sequence, almost barren and uselefs ?

“ Many people imagine, that the sterility of our
 “ lands, which are much less fertile now than in
 “ times past, proceeds from the intemperance of
 “ the air, the inclemency of seasons, or from the
 “ alteration of the lands themselves, that, weak-
 “ ened and exhausted by long and continual la-
 “ bour, are no longer capable of producing their
 “ fruits with the same vigour and abundance.
 “ This is a mistake, says Columella: we ought
 “ not to imagine, that the earth, to whom the au-
 “ thor of nature has communicated a perpetual
 “ fecundity, is liable to barrenness, as to a kind
 “ of disease. After its having received from its
 “ master a divine and immortal youth, which has
 “ occasioned its being called the common mother
 “ of all things, because it always has brought
 “ forth, and ever will bring forth from its womb,
 “ whatever subsists, it is not to be feared, that it
 “ will fall into decay and old age like man. It is
 “ neither to the badness of the air, nor to length of
 “ time, that the barrenness of our lands is to be
 “ imputed; but solely to our own fault and neg-
 “ lect: we should blame only ourselves, who aban-
 “ don those estates to our slaves, which, in the
 “ days of our ancestors, were cultivated by the
 “ most noble and illustrious.”

This reflection of Columella's seems very solid, and is confirmed by experience. The land of Canaan (and as much may be said of other countries) was very fertile, at the time the people of God took possession of it, and had been seven hundred years inhabited by the Canaanites. From thence to the Babylonish captivity was almost a thousand years. In the latter days, there is no mention of its being exhausted, or worn out by time, without speaking

speaking of the after-ages. If therefore it has been almost entirely barren during a long course of years, as it is said, we ought to conclude with Columella, that * it is not from its being exhausted or grown old, but because it is deserted and neglected. And we ought also to conclude, that the fertility of some countries, of which so much is said in history, arises from the particular attention of the inhabitants in tilling the land, in cultivating the vines, and breeding of cattle: which important article it is now expedient to consider in a particular manner.

ARTICLE II.

Of tillage. Countries famous amongst the antients for abounding with corn.

I shall confine myself, in speaking of tillage, to what relates to wheat, as the most important part of that subject.

The countries most famous for abounding in corn were Thrace, Sardinia, Sicily, Egypt, and Africa.

Athens brought every year only from Byzantium four hundred thousand *medimni* of wheat, as Demosthenes informs us. The *medimnus* contained six bushels, and was sold in his time for no more than five drachmas, that is to say, for fifty pence *French*. How many other cities and countries did Thrace furnish with corn, and how fertile must it consequently have been?

It is not without reason that * Cato the censor, whose gravity of manners occasioned him to be fir-

* Non igitur fatigatione, quemadmodum plurimi crediderunt, nec senio, sed nostra scilicet inertia minus benignè nobis arva respondent. *Colum.* l. 2. c. 2.

* Ille M. Cato Sapiens cellam penariam reip. nostræ, nutricem plebis Romanæ Siciliam nominavit—Itaque ad omnes res Sicilia provincia semper usi sumus; ut, quicquid ex se posset afferre, id non apud eos nasci sed domi nostri conditum putaremus. *Cic. Verr.* c. 3. n. 5.

Demost.
in orat.
cont. Lept.
p. 546.
Id. in
Phorm.
p. 346.

named *the Wife*, called Sicily the magazine and nursing mother of the Roman people. And, indeed, it was from thence Rome brought almost all her corn, both for the use of the city, and the subsistence of her armies. We see also in Livy, that Sardinia supplied the Romans with abundance of corn.

Sext. Aurel. Vict. in epito.

All the world knows how much the land of Egypt, watered and enriched by the Nile, which served it instead * of the husbandman, abounded with corn. When Augustus had reduced it into a Roman province, he took particular care of the bed and canals of this beneficent river, which by degrees had been clogged with mud, through the neglect of the kings of Egypt, and caused them to be cleansed by the Roman troops, whom he left there. From thence came regularly every year twenty millions of bushels of wheat. Without this supply, the capitol of the world was in danger of perishing by famine. She saw herself in this condition under Augustus, for there remained only three days provision of corn in the city. That prince, who was full of tenderness for the people, had resolved to poison himself, if the expected fleets did not arrive before the expiration of that time. They came, and the preservation of the people was attributed to the good fortune of the prince. We shall see, that wise precautions were afterwards taken to avoid the like danger for the future.

Plin. l. 18. c. 8.

Africa did not give place to Egypt in point of fertility. In one of its countries, one bushel of wheat sown has been observed to produce an hundred and fifty. From a single grain almost four hundred ears would sometimes spring up, as we find by letters to Augustus and Nero, from those who governed Africa under them. This was no doubt very uncommon. But the same Pliny, who

* Nihil ibi coloni vice fungitur. *Plin.*

relates these facts, assures us, that in Bœotia and Egypt it was a very common thing for a grain to produce an hundred and fifty ears; and he observes, upon this occasion, the attention of the divine providence, which hath ordained, that of all the plants that which it had appointed for the nourishment of man, and in consequence the most necessary, should be also the most fruitful.

I have said, that Rome at first brought almost all her corn from Sicily and Sardinia. In process of time, when she had made herself mistress of Carthage and Alexandria, Africa and Egypt became her store-houses. Those cities sent numerous fleets every year, freighted with wheat for the use of the people, then lords of the universe. And, when the harvest happened to fail in one of these provinces, the other came in to its aid, and supported the capitol of the world. Corn, by this means, was at Liv. l. 31. a very low price at Rome, and sometimes sold for n. 50. no more than two *asses*, or pence, a bushel. The Id. l. 35. whole coast of Africa abounded exceedingly with n. 62. corn, in which part of the wealth of Carthage consisted. The city of Leptis only, situated in the lesser Syrtis, paid a daily tribute to it of a talent, that is to say, of three thousand livres. In the war Id. l. 43. against Philip, the Carthaginian ambassadors sup- n. 6. plied the Romans with a million of bushels of corn, and five hundred thousand of barley. Those of Massinissa gave them also as much.

Constantinople was supplied in the same manner, when the seat of empire was transplanted thither. An admirable order was observed in both these cities, for subsisting the immense number of people that inhabited them. The emperor Constantine Socrat. l. 2, caused almost fourscore thousand bushels of corn, c. 13. which came from Alexandria, to be distributed daily at Constantinople; this was for the subsistence of six hundred and forty thousand men, the Roman bushel serving only eight men. When the emperor

Ælian.
Spartian.
in Sever.

emperor Septimus Severus died, there was corn in the public magazines for seven years, expending daily seventy-five thousand bushels, that is to say, bread for six hundred thousand men. What a provision was this against the dearth of any future years!

Besides these I have mentioned, there were many other countries very fruitful in corn.

Cic. in
Verr. de
frum.
n. 112.
Plin. l. 18.
c. 7.

For the sowing of an acre only one *medimnus* of corn was required: *Medimnum*. The *medimnus* consisted of six bushels, each of which contained very near twenty pounds weight of corn. (It is observed, in the *Speſtacle de la Nature*, that the usual and sufficient quantity for sowing an acre is an hundred and twenty pounds of corn: which comes to the same amount.) The highest produce of an acre was ten *medimni* of corn, that is to say, ten for one; but the ordinary produce was eight, with which the husbandmen were well satisfied. It is from Cicero we have this account; and he must have known the subject very well, as he uses it in the cause of the Sicilians against Verres. He speaks of the country of the Leontines, which was one of the most fruitful in Sicily. The highest price of a bushel of corn amounted to three Sesterces, or seven pence half-penny. It was less than that of France by almost one fourth. Our Septier contains twelve bushels, and is often sold for ten livres. By that estimate our bushel is worth sixteen pence, and something more; that is to say, twice the price of the bushel of the antients, and something more.

Cic. ibid.
n. 173.

All that Cicero relates upon the subject of corn, as to its price, how much of it was necessary for sowing an acre, and what quantity it produced being sown, ought not to be considered as an established rule; for that might vary considerably according to soils, countries, and times.

The

The antients had different methods of threshing their corn; they made use, for that purpose, either of sledges armed with points; or of horses, which they made trample upon it; or of flails, with which they beat the sheaves, as is now customary in many places.

Plin. l. 18.
c. 30.

They also used various methods for preserving corn a great while, especially by shutting it up close in the ear in subterranean caverns, which they covered on all sides with straw, to defend it against damps; closing the entrance with great care, to prevent the air from getting in. Varro assures us, that corn would keep good in that manner for fifty years.

Lib. 1. de
re rust.
c. 5.

ARTICLE III.

S E C T I.

Cultivation of the vine. Wines celebrated in Greece and Italy.

WE may believe, that mankind have been no less industrious in the cultivation of the vine, than in that of corn, though they applied themselves to it later. The Scripture informs us, that the use of wine was not known till after the deluge: *Noah began to be an husbandman, and he planted a vineyard.* It was, no doubt, known before, but only in the grape, and not as liquor. Noah planted it by order, and discovered the use that might be made of the fruit, by pressing out and preserving the liquor. He was deceived by its sweetness and strength, which he had not experienced: *And he drank of the wine and was drunken.* The Pagans transferred the honour of the invention of wine to Bacchus, of which they never had much knowledge; and what is said of Noah's drunkenness,

Gen. ix.
20.

drunkenness, made them consider Bacchus as the god of drunkenness and debauch.

The offspring of Noah, having dispersed into the several countries of the world, carried the vine with them from place to place, and taught the use to be made of it. Asia was the first that experienced the sweetness of this gift, and soon imparted it to Europe and Africa. We see in Homer, that in the time of the Trojan war, part of the commerce consisted in the freight of wines.

The wine was kept in those days in large earthen jars, or in the skins of beasts, which custom continues to this day in countries where wood is not in plenty. It is believed that we are indebted to the Gauls, that settled on the banks of the Po, for the useful invention of preserving our wine in vessels of wood exactly closed, and for retaining it with in bounds, notwithstanding its fermentation and strength. From that time the keeping and transporting it became more easy, than when it was kept in earthen vessels, which were liable to be broke; or in bags of skin, apt to unsew, or grow mouldy.

Homer mentions a very famous wine of Maronæ in Thrace, which would bear mixing with twenty times as much water. But it was common for the natives to drink it unmixed. * Nor have authors been silent upon the excessive brutalities, to which that nation were subject. Pliny tells us, that † Mucianus, who had been thrice Consul, being in that country in his own time, had experienced the truth of what Homer says, and seen, that in a certain measure of wine they put fourscore times as

* Natis in usum lætitiæ scyphis
Pugnare Thracum est.

HOR. O. l. 27. l. 1.

*With bowls for mirth and joy design'd
To fight befits the Thracian hind.*

† This was the celebrated Mucianus, who had so much share in the election of Vespasian to the empire,

much

much water; which is four times as much as the Grecian poet speaks of.

The same author mentions wines much celebrated in Italy, which took their name from Opimius, in whose consulate they were made, which were preserved to his time, that is, almost two hundred years, and were not to be purchased for money. A very small quantity of this, mingled with other wines, communicated to them, as was pretended, a very surprizing strength and exquisite flavour. * How great soever the reputation of the wines, made in the consulate of Opimius might be, or in that of Anicius, for the latter were much cried up, Cicero set no such great value upon them; and above an hundred years before Pliny writes, he found them too old to be supportable. Plin. l. 14. c. 4.

Greece and Italy, which were distinguished in so many other respects, were particularly so, by the excellency of their wines.

In Greece, besides many others, the wines of Cyprus, Lesbos, and Chio, were much celebrated. Those of Cyprus are in great esteem to this day. † Horace often mentions those of Lesbos, and represents them as very wholesome and agreeable. But Chio carried it from all the other countries, and eclipsed their reputation so much, that the inhabitants of that island were thought to be the first who planted the vine, and taught the use of it to other nations. ‡ All these wines were in so great esteem, and of so high a price, that at Rome, so late as to the in- Athen. l. 1. p. 26, 32.

* Atqui ex notæ sunt optimæ credo; sed nimia vetustas nec habet eam, quam quærimus, suavitatem, nec est sanè jam tolerabilis. *Cic. in Brut. n. 287.*

† Hic innocentis pocula Lesbii

Duces sub umbra,

Beneath the shade you here may dine,

And quaff the harmless Lesbian wine.

Od. 7. l. 1.

‡ Tanta vino Græco gratia erat, ut singulæ portiones in convivio darentur.—L. Lucullus puer apud patrem nunquam lautum convivium vidit, in quo plus semel Græcum vinum daretur. *Plin. ex Varro, l. 14. c. 14.*

fancy of Lucullus, in their greatest entertainments they drank only one cup of them at the end of the feast. Their prevailing qualities were sweetness and a delicious flavour.

Plin. l. 14. c. 12. Pliny was convinced, that the libations of milk instituted by Romulus, and Numa's prohibition to honour the dead by pouring wine upon the funeral pile, were proofs that in those days vines were very scarce in Italy. They increased considerably in the following ages; and it is very probable, the Romans were obliged to the Greeks, whose vines were in high repute, on that account; as they were, in process of time also, for their taste for arts and sciences. It was * the wines of Italy, in the times of Camillus, that brought the Gauls again thither. The charms of that liquor, which was entirely new to them, were powerful attractions to induce them to quit their country.

Two thirds of all the places famed for the goodness of wine were in Italy. † The antient custom of that country, which it still retains, was to fasten their ‡ vines to trees, and especially to the poplar, to the tops of which they projected their slender circling-branches: this had a very fine effect, and was a most agreeable object to the eye. In several places they made use of props as we do.

* *Eam gentem (Gallorum) traditur fama, dulcedine frugum, maximèque vini nova tum voluptate captam, Alpes transisse. Liv. l. 5. n. 33.*

† *In Campano agro vites populis nubunt, maritosque complexæ atque per ramos earum procacibus brachiis geniculato cursu scandentes, cacumina æquant. Plin. l. 14. c. 1.*

‡ *From this custom three elegant expressions in Horace take birth, all derived from the same metaphor. He says, he marries the trees to the vines. Epod. 2.*

Ergo aut adulta vitium propagine
Altas maritat populos.

He calls the same trees widowers, when the vines are no longer fastened to them. Od. 5. l. 4. Aut vitem viduas ducit ad arbores. And gives the name of batchelors to the trees which never had the wine annexed to them: Platanusque cælebs evincet ulmos. Od. 15. l. 2.

The country of Capua alone supplied them with the Massic, * Calenian, Formian, Cæcuban, and Falernian, so much celebrated by Horace. It must be allowed, that the goodness of the soil, and the happy situation of all those places, contributed very much to the excellency of these wines; but we must also admit, that they owed it more to the care and industry of the husbandmen, who applied themselves with the utmost attention to the cultivation of the vines. The proof of which is, that in † Pliny's time, which was about an hundred years after Horace, the reputation of these wines, formerly so famous, was entirely come to nothing, through the negligence and ignorance of the vine-dressers, who, blinded by the hope of gain, were more intent upon having a great quantity, than good wine.

Pliny cites several examples of the extreme difference which cultivation will produce in the same land. Amongst others, he tells us of a celebrated Grammarian, who lived in the reign of Tiberius and Claudius, and purchased a vineyard at a small price, which had long been neglected by its antient masters. The extraordinary care he took of it, and the peculiar manner in which he cultivated it, occasioned a change in a few years, that seemed little less than a prodigy; *ad vix credibile miraculum perduxit*. So wonderful a success, in the midst of other vineyards, which were almost always barren, drew upon him the envy of all his neighbours;

* Cæcubum, & prælo domitam Caleno
Tu bibes uvam: mea nec Falernæ
Temperant vites, neque Formiani
Pocula colles.

Od. 20. l. 1.

Cæcubus and Calenum join

To fill thy bowls with richest wine:

My humble cups do not produce

The Formian or Falernian juice.

† Quod jam intercidit incuria coloni—Cura, culturaque id contigerat. Exoluit hoc quoque culpa (Vinitorum) copix potius quam bonitati studentium. *Plin.* l. 14. c. 6.

who,

who, to cover their own sloth and ignorance, accused him of magic and forcery.

Athen. l. 1. p. 26. Amongst the vines of Campania, which I have mentioned, the Falernian was in great vogue. It was very strong and rough, and was not to be drank till it had been kept ten years. To soften that roughness, and qualify its austerity, they made use of honey, or mingled it with Chio, and by that mixture made it excellent. This ought, in my opinion, to be ascribed to the refined and delicate taste of those voluptuous Romans, who, in the latter times, spared nothing to exalt the pleasures of the table, by whatever was most agreeable, and most capable of gratifying the senses. There were other Falernian wines more temperate and soft, but not so much esteemed.

Athen.
l. 10.
p. 429.

The antients, who so well knew the excellency of wine, were not ignorant of the dangers attending too free an use of it. I need not mention the law of Zaleucus, by which the Epizephyrian Locrians were universally forbid the use of wine upon pain of death, except in case of sickness. The inhabitants of Marseilles and Melitus shewed more moderation and indulgence, and contented themselves with prohibiting it to women. At * Rome in the early ages, young persons of liberal condition were not permitted to drink wine till the age of thirty; but as for the women, the use of it was absolutely forbid to them; and the reason of that prohibition was, because intemperance of that kind might induce them to commit the most excessive crimes. Seneca complains bitterly, that this custom was almost universally violated in his times. The † weak and delicate complexion of the women, says

* Vini usus olim Romanis fœminis ignotus fuit, ne scilicet in aliquod dedecus prolaberentur: quia proximus a libero patre intemperantiæ gradus ad inconcessam venerem esse consuevit. *Val. Max. l. 1. c. 1.*

† Non minùs, pervigilant; non minus, potant; & mero viros provocant.

he, is not changed; but their manners are changed, and no longer the same. They value themselves upon carrying excess of wine to as great an height as the most robust men. Like them they pass whole nights at tables, and, with a full glass of un-mixed wine in their hands, they glory in vying with them, and, if they can, in overcoming them.

The emperor Domitian passed an edict in relation to wine, which seemed to have a just foundation. One year having produced abundance of wine, and very little corn, he believed they had more occasion for one than for the other, and therefore decreed, that no more vines should be planted in Italy; and that, in the provinces, at least one half of the vines should be rooted up. Philostratus expresses himself, as if the decree ordained, that they should all be pulled up, at least in Asia; because, says he, the seditions, which arose in the cities of that province, were attributed to wine. All Asia deputed Scopelianus to Rome upon that occasion, who professed eloquence at Smyrna. He succeeded so well in his remonstrances, that he obtained not only, that vines should continue to be cultivated, but that those who neglected to do so, should be laid under a fine. It is believed, that his principal motive for abolishing his edict was the dispersing of papers with two Greek verses in them, signifying, that, let him do what he would, there would still remain wine enough for the sacrifice, in which an emperor should be the offering.

It seems, however, says Mr. Tillemont, that his edict subsisted throughout the greatest part of the west to the reign of Probus; that is, almost two hundred years. That emperor, who after many wars had established a solid peace in the empire, employed the troops in many different works, useful to the public; to prevent their growing enervated through sloth, and that the soldier might not eat his pay without deserving it. So that as Han-

Sueton. in
Domit.
c. 7.

Philost.
vit. Apol-
lon. l. 6.
c. 7.

Sueton. in
Domitian.
c. 14.

OF AGRICULTURE.

nibal had formerly planted the whole country of Africa with olive-trees, lest his soldiers, for want of something to do, should form seditions; Probus, in like manner, employed his troops in planting vines upon the hills of Gaul, Pannonia, Mæsia, and in many other countries. He permitted in general the Gauls, Pannonians, and Spaniards, to have as many vines as they thought fit; whereas, from the time of Domitian, that permission had not been granted to any nation of the world.

S E C T. II.

Produce of the vines in Italy in Columella's time.

BEFORE I conclude this article upon vines, I cannot omit extracting a passage of Columella, which explains what profit was made of them in his time. He enters, for this purpose, into a detail, which seemed sufficiently curious to me, and makes an exact calculation of the expence and produce of a vineyard of seven acres. His design is to prove, that the cultivation of vines is more beneficial than any other kind of husbandry, and than that of corn itself. That might be true in his times, but it is not so in ours, at least in the general opinion. This difference arises, perhaps, from the various accidents to which the vine is subject in France, frosts, rains, blights, which are not so much to be apprehended in hot countries. To these may be added the high price of casks in plentiful years, which swallows up the greatest part of the vine-dresser's profit; and the customs, which very much diminish the price of wines. Even amongst the antients, all were not of Columella's opinion. * Cato, indeed, gave vines the first rank,

* Cato quidem dicit [primum agrum esse] ubi vineæ possunt esse bono vino & multe—Alii dant primatum bonis pratis—Vineam sunt qui putent sumptu fructum devorare. *Varr. de re rustic.* l. 1. c. 7, 8.

but those only which produced the most excellent liquor, and in great abundance. With the same conditions we still think in the same manner. Many gave the preference to pasture lands; and their principal reason was, that the charges in the culture of vines were almost equal to their produce.

I. *The charges necessary for seven acres of vines.*

These are, livres.

- | | |
|---|------|
| 1. For the purchase of a slave, whose labour sufficed for the cultivation of seven acres of vines, eight thousand sestertii | 1000 |
| 2. For a land of seven acres, seven thousand sestertii — — — — — | 875 |
| 3. For the props and other necessary expences for seven acres, fourteen thousand sestertii — — — — — | 1750 |

These three sums, added together, amount to twenty-nine thousand sestertii — 3625

- | | |
|---|-----|
| 4. For the interest of the aforesaid sum of twenty-nine thousand sestertii for two years, during which the land does not bear, and the money lies dead, three thousand four hundred and fourscore sestertii — — — — — | 486 |
|---|-----|

The total of the expence amounts to thirty-two thousand, four hundred and eighty sestertii — — — — — 4060

II. *Produce of seven acres of vines.*

The yearly produce of seven acres of vines is six thousand three hundred sesterces: that is, seven hundred fourscore and seven livres ten sols. Of which what follows is the proof.

The *Culeus* is a measure which contains twenty *amphoræ*, or forty *urnæ*. The *Amphora* contains twenty-six quarts, and somewhat more. The *Culeus*,

in consequence, contains five hundred and twenty quarts, which make two hogshheads of the Paris measure, wanting fifty-six quarts.

The lowest value of the *Culeus* is three hundred sestertii; that is to say, thirty seven livres ten sols. The least produce of each acre was three *Culei*, which were worth nine hundred sestertii, * or an hundred and twelve livres ten sols. The seven acres therefore produced a profit of six thousand three hundred sestertii, which make seven hundred four-score and seven livres ten sols.

The interest of the total expence, which is thirty-two thousand four hundred and fourscore sestertii, that is, four thousand and sixty livres; this interest, I say, at six *per cent. per annum*, amounts to one thousand, nine hundred and forty-four sestertii, or something more, or two hundred and forty three livres. The interest of the same sum, arising from the annual produce of a vineyard of seven acres, is six thousand three hundred sestertii; that is, seven hundred four-score and seven livres ten pence. From whence may be seen, how much the latter interest exceeds the former, which was, however, the common interest of money. This is what Columella would prove.

Besides this produce, Columella reckons another profit arising from *Layers*. The layer is a young shoot or branch of a vine, which is set in the earth, where it takes root in order for the propagation of the plant. Each acre produced yearly ten thousand of these layers at least, which sold for three thousand sestertii, or three hundred and seventy-five livres. The layers produced therefore from the seven acres, twenty-one thousand sestertii, or two thousand six hundred and twenty livres. Columella computes the produce of these layers at the lowest value; for

Vivi radices.

* Columella observes, that each acre of Seneca's vineyards produced eight *Culei*, l. 3. c. 3. And Varro, that in many places an acre produced from ten to fifteen, l. 1. c. 2.

as to himself, he assures us, his own vineyards produced regularly twice as much. He speaks only of the vines of Italy, and not of those of other provinces.

Adding the produce of the wine to that of the plants or layers, the profit upon seven acres of vines amounted to three thousand four hundred livres.

The produce of these layers, unknown to our vine-dressers, proceeded, no doubt, from the vines being very rare in a great number of provinces; and, the reputation of the vines of Italy having spread universally, people came from all parts to buy those layers, and to enable themselves, by their means, to plant good vineyards in places which had none before, or which had only such as were indifferent.

ARTICLE IV.

Of the breeding of cattle.

I Have said, that the breeding of cattle is a part of agriculture. It certainly is an essential part of it, not only because cattle, from the abundance of the dung, supply the earth with the manure, which is necessary to the preservation and renovation of its vigour, but because they share with man in the labours of husbandry, and spare him the greatest part of the toil. * Hence it was that the ox, the laborious companion of man in tilling the ground, was so highly considered by the antients, that whoever had killed one of them, was punished with death, as if he had killed a citizen; no doubt, because he was esteemed a sort of murderer of the human race, whose nourishment and life stand in absolute need of the aid of this animal.

* Bos laboriosissimus hominis socius agricultura cujus tanta fuit apud antiquos veneratio, ut tam capitale esset bovem necesse quam civem. *Colum. in præf.* l. 6.

The* farther we look back into antiquity, the more we are assured, that in all nations the breeding of cattle produced considerable revenues, without speaking of Abraham, whose numerous family of domestics shews the multitude of his flocks and herds, or of his kinsman Laban; the holy Scripture observes, that the greatest part of Job's riches consisted in cattle; and that he possessed seven thousand sheep; three thousand camels, five hundred yoke of oxen, and five hundred she-asses.

Job i. 3.

It was by this the land of Promise, though of very moderate extent, enriched its princes, and the inhabitants of the country, whose numbers were incredible, amounting to more than three millions of souls, including women and children.

2 Kings
iii. 4.

We read that Ahab, king of Israel, imposed an annual tribute upon the Moabites, whom he had conquered, of an hundred thousand sheep. How much must this number have multiplied in a short time, and what abundance occasioned throughout the whole country!

2 Chron.
xxvi. 10.

The holy Scripture, in representing Uzziah as a prince accomplished for every part of a wise government, does not fail to inform us, that he had a great number of husbandmen and vineyards, and that he fed abundance of cattle. He caused great inclosures to be made in the countries, and vast houses for fothering the flocks and herds, with lodges, fortified with towers, for the shepherds to retire to with their flocks, and to secure them against irruptions; he also took care to have great numbers of cisterns cut for watering the flocks; works not so splendid, but no less estimable than the most superb palaces. It was, without doubt, the particular protection, which he gave to all who were employed in the cultivation of lands, or the

* In rusticatione vel antiquissima est ratio pascendi, eademque & quæsituosissima. *Ibid.*

breeding of cattle, that rendered his reign one of the most opulent Judæa had ever seen. And he did thus, saith the Scripture, *because he loved husbandry: Erat enim homo agriculturæ deditus.* The text is still stronger in the Hebrew; *quia diligebat terram, because he loved the ground.* He took delight in it; perhaps cultivated it with his own hands; at least, he made husbandry honourable, he knew all the value of it, and was sensible that the earth, manured with diligence and skill, was an assured source of riches both to the prince and people; he therefore thought attention to husbandry one of the principal duties of the sovereignty, though often the most neglected.

The Scripture says also of the holy King Hezekiah, *Moreover he provided him cities and possessions of flocks and herds in abundance, for God had given him substance very much.* 2 Chron. xxxii. 29. It is easy to conceive, that the shearing of sheep alone, without mentioning other advantages from them, could not but produce a very considerable revenue in the country, where an almost innumerable multitude were continually fed. And hence we find, that the time for shearing of sheep was a season of festivity and rejoicing.

Amongst the antient Pagans, the riches of the kings consisted in cattle; as we find from Latinus in Virgil, and Ulysses in Homer. It was the same amongst the Romans, who, by the antient laws, did not pay fines in money, but in oxen and sheep.

We must not be surpris'd, after having considered the great advantages produced by the breeding and feeding of cattle, that so wise a man as Varro has not disdain'd to give us an extensive account of all the beasts that are of any use to the country, either for tillage, breed, or for carriage, and the other conveniencies of man. He speaks first of small cattle, sheep, goats, and hogs: *greges.* He proceeds next to the large beasts, oxen, asses, horses, and camels: *armenta.* And he concludes with

Columel.
præ. l. 6.

fowl, which may be called domestic animals, *villaticæ pecudes*; pigeons, turtle-doves, fowls, geese, and many others. Columella enters into the same detail; and Cato the censor runs over part of it. The latter, upon being asked what was the surest and shortest method to enrich a country, replied, the feeding of cattle, which is attended with an infinity of advantages to those who apply themselves to it with diligence and industry.

And, indeed, the beasts, that labour in the field, render mankind continual and important services; and the advantages he reaps from them, do not conclude even with their lives. They share with him, or rather spare him the most laborious part of the work, without which the earth, however fruitful in itself, would continue barren, and not produce him any increase. They serve him in bringing home with safety into his house, the riches he has amassed without doors, and to carry him on his journies. Many of them cover his table with milk, cheese, wholesome food, and even the most exquisite dishes; and supply him with the rich materials of the stuffs he is in want of for cloathing himself, and with a thousand other conveniencies of life.

We see, from what has been said hitherto, that the country covered with corn, wine, flocks, and herds, is a real Peru to man, and a much more valuable and estimable one, than that from whence he extracts gold and silver, which, without the other, would not preserve him from perishing with hunger, thirst, and cold. Placed in the midst of a fertile territory, he beholds around him at one view all his riches; and, without quitting his little empire, he finds immense and innocent treasures within his reach. These he regards, no doubt, as gifts from the liberal hand of that supreme Master, to whom he is indebted for all things; but he regards them also as the fruits of his own labour, and that renders them still more grateful to him,

S E C T. V.

Innocency and pleasure of a rural life, and of agriculture.

THE revenues and profits which arise from the culture of lands, are neither the sole, nor the greatest advantage accruing from it. All the authors, who have wrote upon * rural life, have always spoken of it with the highest praises, as of a wise and happy state, which inclines a man to justice, temperance, sobriety, sincerity, and, in a word, to every virtue; which in a manner shelters him from all passions, by keeping him within the limits of his duty, and of a daily employment, that leaves him little leisure for vices: luxury, avarice, injustice, violence, and ambition, the almost inseparable companions of riches, take up their ordinary residence in great cities, which supply them with the means and occasions: the hard and laborious life of the country does not admit of these vices. This gave room for the poets to feign, that Astræa, the goddess of justice, had her last residence there, before she intirely quitted the earth.

We see in Cato the form of a prayer used by the country-people, wherein may be discerned the precious tokens of the antient tradition of men, who attributed every thing to God, and addressed themselves to him in all their temporal necessities, because they knew he presided over all things, and that all things depended on him. I shall repeat a good part of it, and hope it will not be unaccep-

* In urbe luxuries creatur: ex luxuria existat avaritia necesse est: ex avaritia erumpat audacia: inde omnia scelera gignuntur—In rusticis moribus, in victu arido, in hac horrida incultaque vita istiusmodi maleficia gigni non solunt—Cupiditates porro quæ possunt esse in eo, qui ruri semper habitavit, & in agro colendo vixerit? Quæ vita maximè disjuncta a cupiditate, & cum officio conjuncta—Vita autem rustica parsimonix, diligentix, justitix, magistra est. *Cic. pro Rosc. Amer. n. 39. & 75.*

table. It is in a ceremony, called *Solitaurilia*, and, according to some, *Suovetaurilia*, in which the country-people made a procession round their lands, and offered libations and sacrifices to certain gods.

“ Father Mars, said the suppliant, I humbly
 “ implore and conjure you to be propitious and
 “ favourable to me, my family, and all my do-
 “ mestic, in regard to the occasion of the present
 “ procession in the fields, lands, and estate: To
 “ prevent, avert, and remove from us all diseases
 “ known and unknown, desolations, storms, cala-
 “ mities, and pestilential air: to make our plants,
 “ corn, vines, and trees, grow and come to per-
 “ fection: to preserve our shepherds and flocks:
 “ To grant thy preservation of life and health to
 “ me, my family, and all my domestics.” What
 a reproach is it that Christians, and often those
 who have the greatest share in the goods of this
 world, should in these days be so little careful to
 demand them from God, and be ashamed to thank
 him for them! Amongst the Pagans all their meals
 began and ended with prayers, which are now ba-
 nished from almost all our tables.

Columel.
 l. i. c. 8.

Columella enters into a detail upon the duties of
 the master or farmer, in regard to his domestics,
 which seems full of reason and humanity. “ Care
 “ ought to be taken, says he, that they are well
 “ clad, but without finery: that they are defended
 “ against the wind, cold, and rain. In directing
 “ them, a * medium should be observed between
 “ too great indulgence and excessive rigour, in
 “ order to make them rather fear, than experience,
 “ severities and chastisements; and they should be
 “ prevented from doing amiss by diligence, and
 “ their master’s presence: for good conduct con-
 “ sists in preventing, instead of punishing, faults.

Ibid. l. 12. “ When they are sick, care should be taken, that

* The lands were cultivated by slaves.

“ they

“ they are well tended, and that they want for
 “ nothing; which is the certain means to make
 “ their business grateful to them.” He recom-
 mends also the same usage of slaves, who often
 worked laden with chains, and who were generally
 treated with great rigour.

What he says, with regard to the mistress of a Colum. in præf. l. 22.
 country-family, is very remarkable: Providence,
 in uniting man and woman, intended they should
 be a mutual support to each other, and for that
 reason assigned to each of them their peculiar func-
 tions. The man, designed for business without
 doors, is obliged to expose himself to heat and cold;
 to undertake voyages by sea, and journeys by land;
 to support the labours of peace and war; that is,
 to apply himself to the works of the field, and in
 carrying arms: all exercises which require a body
 robust, and capable of bearing fatigues. The wo-
 man, on the contrary, too weak to sustain these
 offices, is reserved for affairs within doors. The
 care of the house is confided to her; and as the
 proper qualities for her employment are attention
 and exactness, and as fear renders us more exact
 and attentive, it was necessary that the woman
 should be more timorous. On the contrary, because
 the man acts and labours almost always without
 doors, and is often obliged to defend himself against
 injuries, God has infused into him boldness and
 courage. Hence* in all ages, both amongst the
 Greeks and Romans, the government of the house
 devolved upon the women, that their husbands,
 after having transacted their business abroad, might
 return to their houses free from all cares, and find
 a perfect tranquillity at home.

* Nam & apud Græcos, & mox apud Romanos usque in patrum
 nostrorum memoriam, fere domesticis labor matronalis fuit, tanquam
 ad requiem forensium exercitationum omni cura deposita patribus-
 familias intra domesticos penates recipientibus.

OF AGRICULTURE.

This is what Horace describes so elegantly in one of his odes*, which Dryden translates thus:

*But if a chaste and pleasing wife,
To ease the bus'ness of his life,
Divides with him his household care,
Such as the Sabine matrons were,
Such as the swift Apulian's bride.
Sun burnt and swarthy though she be,
Will fire for winter's nights provide,
And without noise will oversee
His children and his family;
And order all things till he come,
Sweaty, and over-labour'd, home;
If she in pens his flock will fold,
And then produce her dairy store,
And wine to drive away the cold,
And unbought dainties of the poor, &c.*

The antients seem to have excelled themselves in treating this on subject, so many fine thoughts and beautiful expressions it supplies. *Mr. Rollin gives here a prose translation of the passage at bottom, in the Georgics; which, it was conceived, would be no less agreeable in Mr. Dryden's Version:*

† *O happy, if he knew his happy state,
The swain, who, free from bus'ness and debate,
Receives*

* *Quod si pudica mulier in partem juvet
Domum atque dulces liberos,
(Sabina qualis aut perusta solibus
Pernicis uxor Appuli)
Sacrum vetustis extuat lignis focum
Lassi sub adventum viri;
Claudensque textis cratibus lætum pecus,
Distenta dulci vina promens dolio,
Et horna dulci vina promens dolio,
Dapes inemptas apparet, &c.*

HOR. Ep. 2.

† *O fortunatos nimium, sua si bona nôrint,
Agricolas! quibus ipsa, procul discordibus armis,*

Fundit

*Receives his easy food from nature's hand,
And just returns of cultivated land.*

No palace, &c.

*But easy, quiet, a secure retreat,
A harmless life, that knows not how to cheat,
With home-bred plenty the rich owner blest,
And rural pleasures crown his happiness.
Unvex'd with quarrels, undisturb'd with noise,
The country king his peaceful realm enjoys :
Cool grots, and living lakes, the flow'ry pride
Of meads, and streams, that thro' the valleys glide ;
And shady groves, that easy sleep invite,
And, after toilsome days, a soft repose at night.
Wild beasts of nature in his woods abound,
And youth, of labour patient, plough the ground,
Inur'd, to hardship, and to homely fare.
Nor venerable age is wanting there
In great examples to the youthful train :
Nec are the Gods ador'd with rites prophane.
From hence Astræa took her flight, and here
The prints of her departing steps appear.*

Georg. Lib. II. l. 439.

The fine description Cicero gives us, in his essay upon old-age, of the manner in which corn and grapes gradually arrive at perfect maturity, shews his taste for a country life, and instructs us, at the same time, in what manner we ought to consider those wonderful productions, that merit our admiration no less from their being common and

Fundit humo facilem victum justissima tellus.

Si non, &c.

*At segura quies, & nescia fallere vita,
Dives opum variarum ; at latis otia fundis,
Speluncæ, vivique lacus ; at frigida Tempe,
Mugitusque boum, mollesque sub arbore somni
Non absunt : illic saltus ac lustra ferarum,
Et patiens operum, parvoque assueta juvenus,
Sacra Deum, sanctique patres. Extrema per illos
Justitia excedens tenuis vestigia fecit.*

*Virg. Georg. l. 2.
annual.*

annual. And, indeed, if a simple description gives so much pleasure, what effect, in a mind rationally curious, ought the reality itself to have, and the actual view of what passes in vines and fields of corn, till the fruits of both are brought in and laid up in cellars and barns? And as much may be said of all the other riches, with which the earth annually cloaths herself.

This is what makes residence in the country so agreeable and delightful, and so much the desire of magistrates and persons employed in serious and important affairs. Tired and fatigued with the continual cares of the city, they naturally cry out with Horace: * “ O country, when shall I see you? “ When will it be allowed me to forget, in thy “ charming retreats, my cares and solicitude, either “ in amusing myself with the books of the antients, “ or enjoying the pleasure of having nothing to “ do, or reposing myself in sweet slumber?” The purest pleasures, are no doubt, to be found there. The country seems, according to the happy expression of the same poet, to † restore us to ourselves, in relieving us from a kind of slavery, and in placing us where we may justly be said to live and reign. We enter, in a manner, into a conversation with the trees and plants; we question them; we make them give us an account of the fruits they

* O rus, quando ego te aspiciam, quandoque licebit
Nunc veterum libris, nunc somno, & inertibus horis,
Ducere sollicitæ jucunda oblivia vitæ?

*O rural scenes, and O serene abodes,
Wherein we seem to emulate the gods,
When, void of care, of passion, and of strife,
And all the busy ills of tedious life,
With you my happy hours shall I employ
In sweet vicissitudes of rest and joy,
In books that raise the Soul, and learned ease,
In sleep, in leisure, and in what I please?*

Paraph.

† Vilice sylvarum, & mihi me reddentis agelli.

HOR. Ep. 14. l. 1.

Vivo & regno, simul ista reliqui, &c.

HOR. Ep. 10. l. 1.

produce,

produce, and receive such excuses as they have to make, when defective in bearing*: alledging sometimes the great rains, sometimes excessive heats, sometimes the severity of the cold. It is Horace who lends them this language.

All I have said sufficiently implies, that I speak no longer of that painful and laborious tillage, to which man was at first condemned: but that I have another in view, intended for his pleasure, and to employ him with delight; an employment perfectly conformable to his original institution, and the design of his Creator, as it was commanded Adam immediately after his formation. In effect, it seems to suggest to us the idea of the terrestrial paradise, and to partake, in some measure, of the happy simplicity and innocence which reigned there. We find that in all times, it has been the most grateful amusement of princes, and the most powerful kings. Without mentioning the famous hanging gardens, with which Babylon was adorned, the Scripture informs us, that Ahasuerus (Darius, son of Darius Hystaspes) had planted part of the trees of his garden, and that he cultivated it with his own royal hands: *fussit convivium præparari in vestibulo horti & nemoris, quod regio cultu & manu constitum erat.* [I do not find the latter part of this text in the English Bible.] We have said, that Cyrus the younger answered Lysander, who admired the beauty, œconomy, and disposition of his gardens, that himself had drawn the plan, laid them out, and planted many of the trees with his own hands: *Ego omnia ista sum dimensus: mei sunt ordines, mea descriptio: multe etiam istarum arborum mea manu sunt satæ.* Esther i. 5.
Cic. de Senec. tut. n. 59.

* Fundusque mendax, arbore nunc aquas

Culpante, nunc torrentia agros

Sidera, nunc hiemes iniquas.

HOR. O.D. 1. 1. 3.

When the land fails, and in its fruits,

Against the show'ry skies imputes,

Or the whole blame with equal reason casts

On summer's sultry suns, or winter's fatal blasts.

We

We should never be willing to quit so delightful a residence, were it possible for us to possess it always; and have endeavoured, at least for our consolation, to impose a kind of illusion upon ourselves, by transporting the country in a manner into the midst of cities; not a simple and almost wild country, but a trimmed, laid out, embellished, I had almost said, painted country. I mean those adorned and elegant gardens, which present so grateful and splendid a view to our eyes. What beauty, riches, abundance, variety of sweets, colours and objects! To see * the invariable constancy and regularity of flowers, in succeeding each other, (and as much may be said of fruits) one would think that the earth, attentive to pleasing its master, endeavours to perpetuate her presents, by continually paying him the new tributes of every season. What a throng of reflexions does not this suggest to a curious, and still more to a religious, mind!

Pliny, after having confessed, that no eloquence was capable of expressing duly the incredible abundance and wonderful variety of the riches and beauties, which nature seems to spread with complacency and delight throughout gardens, adds a very just and instructive remark. † He observes upon the difference nature has made, as to the duration of trees and flowers. To the trees and plants designed for the nourishment of man with their fruits, and for the structure of ships and edifices, she has granted years, and even ages of time. To flowers and sweets, which serve only for pleasure, she has given only some moments and days of life;

* Sed illa quanta benignitas naturæ, quod tam multa ad vescendum, tam varia, tamque jucunda gignit; neque ea uno tempore anni, ut semper & novitate delectemur, & copia. *Cic. de nat. deor.* l. 2. n. 131.

† Quippe reliqua usus alimentique gratia genuit: ideoque secula annosque tribuit iis. Flores vero odoresque in diem gignit: magna, ut palam est, admonitione hominum, quæ spectatissimè floreat celerrime marcescere. *Plin.* l. 2. c. 1.

as if she intended to admonish us, that what is most shining and splendid soonest fades, and passes away with rapidity. Malherbe expresses this latter thought in a very lively manner, where he deploras the death of a very young and beautiful person:

Et rose ella a vecu ce qui vivant les roses,

L'espace d'un matin.

And liv'd a rose, as roses live,

A single morning's space.

It is the great advantage of agriculture to be more strictly united with religion and also moral virtue, than any other art; which made Cicero say, as we have seen, that a country life came nearest to that of the wise man; that is, it was a kind of practical philosophy.

To conclude this small treatise where I began it, it must be confessed, that, of all human employments, which have no immediate relation to God and justice, the most innocent is agriculture. It was, as has been said, that of the first man in his state of innocence and duty. It afterwards became part of the penance imposed on him by God. So that, both in the states of innocence and sin, * it was commanded to him, and in his person to all his descendants. It is, however, become, in the judgment of pride, the meanest and most contemptible of employments: and, whilst useles arts, which conduce only to luxury and voluptuousness, are protected and honoured, all those who labour for the welfare and happiness of others are abandoned to poverty and misery.

* *Hate not laborious work, nor the husbandry, which the most High hath created.* Ecclesiast. vii. 15.



CHAPTER II.
OF COMMERCE.

ARTICLE I.

Excellency and advantages of commerce.

IT may be said, without fear of being suspected of exaggeration, that commerce is the most solid foundation of civil society, and the most necessary principle to unite all men, of whatever country or condition they are, with each other. By its means the whole world is but one city, and one family. It is the source of universal plenty to every part of it. The riches of one nation become those of all people, and no country is barren, or at least sensible of its sterility. All its necessities are provided for in time from the extremities of the universe; and every region is amazed to find itself abound in foreign productions, and enriched with a thousand commodities, unknown to itself, and which however compose all that is most agreeable in life. It is by the commerce of the sea and rivers, that is to say, by navigation, that God has united all mankind amongst themselves in so wonderful a manner, by teaching them* to direct and govern the two most violent things in nature, the sea and the winds, and to substitute them to their uses and occasions. He has joined the most remote people by this means, and preserved, amongst the different nations, an image of the dependance he has or-

* Quas res violentissimas natura genuit, earum moderationem nos soli habemus, maris atque ventorum, propter nauticarum rerum scientiam. *Cic. de Nat. deor.* l. 2. p. 15.

dained in the several parts of the same body by the veins, and arteries.

This is but a weak, a slight idea, of the advantages arising from commerce to society in general. With the least attention to particulars, what wonders might we not discover? But this is not the proper place for such inquiries. I shall confine myself to one reflection, which seems very proper for our understanding at once the weakness and grandeur of man.

I shall consider him at first in the highest degree of elevation to which he is capable of attaining, I mean upon the throne: lodged in superb palaces; surrounded with all the splendor of the royal dignity; honoured and almost adored by throngs of courtiers, who tremble in his presence; placed in the centre of riches and pleasures, which vie with each other for his favour; and supported by numerous armies, who wait only to obey his orders. Behold the weight of human greatness! But what becomes of this so powerful, so awful, prince, if commerce happens to cease on a sudden; if he is reduced to himself, to his own industry and personal endeavours? Abandoned to himself in this manner; divested of that pompous outside, which is not him, and is absolutely foreign to his person; deprived of the support of others, he falls back into his native misery and indigence; and, to sum up all in a word, he is no longer any thing.

Let us now consider man in a mean condition, inhabiting a little house; reduced to subsist on a little bread, meat, and drink; covered with the plainest cloaths; and enjoying, in his family, not without difficulty, the other conveniencies of life. What seeming solitude, what a forlorn state, what oblivion seems he in, with regard to all other mortals! We are much deceived, when we think in this manner. The whole universe is attentive to

him. A thousand hands work for his occasions, and to cloath and nourish him. For him manufactures are established, granaries and cellars filled with corn and wine, and different metals extracted from the bowels of the earth with so much danger and difficulty.

There is nothing, even to the things that minister to pleasure and voluptuousness, which the most remote nations are not solicitous to transfer to him through the most stormy seas. Such are the supplies, which commerce, or to speak more properly, Divine Providence, always employed for our occasions, continually procures for us all, for each of us in particular: supplies, which to judge aright of them, are, in a manner, miraculous, which ought to fill us with perpetual admiration, and make us cry out with the prophet, in the transports of a lively gratitude: *O Lord, what is man, that thou art mindful of him, or the son of man that thou visitest him?*

Pfal. viii.
4.

It would be to no purpose for us to say, that we have no obligation for those who labour for us in this manner, because their particular interest puts them in motion. This is true; but is their work therefore of less advantage to us? God, to whom alone it belongs to produce good from evil itself, makes use of the covetousness of some for the benefit of others. It is with this view providence has established so wonderful a diversity of conditions amongst us, and has distributed the goods of life with so prodigious an inequality. If all men were easy in their fortunes, were rich and opulent, who amongst us would give himself the trouble to till the earth, to dig in the mine, or to cross the seas? Poverty or covetousness charge themselves with these laborious, but useful toils. From whence it is plain, that all mankind, rich or poor, powerful or impotent, kings or subjects, have a mutual dependance upon each other for the demands

mands of life; the poor not being able to live without the rich, nor the rich without the labour of the poor. And it is commerce, subsisting from these different interests, which supplies mankind with all their necessities, and, at the same time, with all their conveniencies.

A R T I C L E II.

Antiquity of commerce. Countries and cities most famed for it.

IT is very probable, that commerce is no less antient than agriculture. It begun, as was natural, between private persons, mankind assisting each other with whatsoever they had of useful and necessary to human life. Cain, no doubt, supplied Abel with corn, and the fruits of the earth for his food: and Abel, in exchange, supplied Cain with skins and fleeces for his cloathing, and with milk, curds, and perhaps meat for his table. Tubalcain, solely employed in works of copper and iron, for the various uses and occasions of life, and for arms to defend men, either against human enemies or wild beasts, was certainly obliged to exchange his brass and iron works for other merchandise, necessary to feeding, cloathing, and lodging him. Commerce afterwards, extending gradually from neighbour to neighbour, established itself between cities and adjacent countries, and, after the deluge, enlarged its bounds to the extremities of the world.

The holy Scripture gives us a very antient example of traffic by the caravans of the Ishmaelites and Midianites, to whom Joseph was sold by his brethren. They were upon their return from Gilead, with their camels laden with spices, aromatic goods, and with other precious merchandise of that country. These they were carrying into Egypt, where there was a great demand for them, occasioned

sioned by their custom of embalming the bodies of men, after their death, with great care and expence.

Homer* informs us, that it was the custom of the heroic age of the siege of Troy, for the different nations to exchange the things that were most necessary for life with each other; a proof, says Pliny, that it was rather necessity than avarice, that gave birth to this primitive commerce. We read, in the seventh book of the Iliad, that upon the arrival of certain vessels, the troops went in crowds to purchase wine, some with copper, and others with iron, skins, oxen, and slaves.

We find no navigators in history so antient as the Egyptians and Phœnicians. These two neighbouring nations seem to have divided the commerce by sea between them: the Egyptians had possessed themselves chiefly of the trade of the East, by the Red sea; and the Phœnicians of that of the West, by the Mediterranean.

What fabulous authors say of Osiris, who is the Bacchus of the Greeks; that he undertook the conquest of the Indies, as Scythias did afterwards, makes it probable, that the Egyptians carried on a great trade with the Indians.

As the commerce of the Phœnicians was much more to the west than that of the Egyptians, it is no wonder that they are more celebrated upon that account by the Greek and Roman authors. Hérodoteus says, that they were the carriers of the merchandize of Egypt and Assyria, and transacted all their trade for them, as if the Egyptians had not employed themselves in it; and that they have been believed the inventors of traffic and navigation, though the Egyptians have a more legitimate claim to that

Herod.
l. 1. c. 1.

* Quantum felice ævo, cum res ipsæ permutabantur inter sese, sicut & Trojanis temporibus factitatum Homero credi convenit! Ita enim, ut opinor, commercia victus gratiâ inventa. Alios coriis boum, alios ferro captivisque rebus emptitasse tradit. *Plin.* l. 33. c. 1.
glory.

glory. Certain it is, the Phœnicians distinguished themselves most by antient commerce, and are also a proof to what an height of glory, power, and wealth, a nation is capable of raising itself only by trade.

This people possessed a narrow track of land upon the sea-coast, and Tyre itself was built in a very poor soil; and, had it been richer and more fertile, it would not have been sufficient for the support of the great number of inhabitants, which the early success of its commerce drew thither.

Two advantages made them amends for this defect. They had excellent ports upon the coasts of their small state, particularly that of their capitol; and they had naturally so happy a genius for trade, that they were looked upon as the inventors of commerce by sea, especially of that carried on by long voyages.

The Phœnicians knew so well how to improve both these advantages, that they soon made themselves masters of the sea, and of trade. Libanus, and other neighbouring mountains, supplying them with excellent timber for building of vessels, in a little time they fitted out numerous fleets of merchant-ships, which hazarded voyages into unknown regions, in order to establish a trade with them. They did not confine themselves to the coasts and ports of the Mediterranean, they entered the ocean by the streights of Cadiz or Gibraltar, and extended their correspondence to the right and left. As their people multiplied almost infinitely, by the great number of strangers, whom the desire of gain, and the certain opportunity of enriching themselves, drew to their city, they saw themselves in a condition to plant many remote colonies, and particularly the famous one of Carthage, which, retaining the Phœnician spirit, with regard to traffic, did not give place to Tyre itself in trading, and

surpassed it exceedingly by the extent of dominion, and the glory of military expeditions.

Ezekiel,
ch. xxvii.
v. 5—10.

The degree of glory and power, to which commerce and navigation had elevated the city of Tyre, rendered it so famous, that we could scarce believe there is no exaggeration in what profane authors report of it, if the prophets themselves had not spoken of it with still greater magnificence. Tyre, says Ezekiel, to give us some idea of its power, is a superb vessel. *They have made ail thy ship-beards of fir-trees of Senir; they have taken cedars from Lebanon to make masts for thee. Of the oaks of Bashan have they made thine oars: the company of the Ashurites have made thy benches of ivory, brought out of the isles of Chittim. Fine linnen, with broidered work from Egypt, was that which thou spreadest forth to be thy sail: blue and purple from the isles of Elisha was that which covered thee. The inhabitants of Sidon and Arvad were thy mariners: thy wise men, O Tyrus, that were in thee, were thy pilots.* The prophet, by this figurative language, designs to shew us the power of this city. But he gives, with more energy, a circumstantial account of the different people with whom it traded. The merchandises of the whole earth seemed to be laid up in this city, and the rest of the world appeared less its allies than tributaries.

Il. v. 20
—24.

The Carthaginians trafficked with Tyre for all sorts of riches, and filled its markets with silver, iron, pewter, and lead. Greece, * Tubal and Meshech, brought it slaves, and vessels of copper. † Togarmah supplied it with horses and mules. ‡ Dedan with elephants teeth and ebony. The Syrians exposed to sale in it pearls, purple, wrought cloaths,

* Tubal and Meshech. *The holy Scripture always joins these two people. The latter intends Muscovy; the former, without doubt, was its neighbour.*

† Togarmah, Cappadocia, from whence came the finest horses, of which the emperors reserved the best for their own stables.

‡ Dedan. *The people of Arabia.*

lawn, silk, and all sorts of precious merchandise. The people of Judah and Israel brought thither the finest wheat, balm, honey, oyl, and fruits. Damascus sent it excellent wine, and wool of the most lively and most exquisite dyes : other people furnished it with iron work, myrrh, the aromatic calamus, and carpets of exquisite workmanship to sit upon. * Arabia, and all the princes of Cedar, brought thither their flocks of lambs, sheep, and goats. † Shebah and Raamah, the most excellent fumes, precious stones, and gold ; and others cedar-wood. bales of purple, embroidered cloathing, and every kind of rich goods.

I shall not undertake to distinguish exactly the situation of the different nations, of whom Ezekiel speaks, this not being the proper place for such a disquisition. It suffices to observe, that this long enumeration, into which the holy Spirit has thought fit to descend, with regard to the city of Tyre, is an evident proof, that its commerce had no other bounds than the world, as known at that time. Hence it was considered, as the common metropolis of all nations, and as the queen of the sea. Isaiah paints its grandeur and state in most lively, but very natural, colours, where he says, that Tyre wore a diadem upon her brows ; that the most illustrious princes of the universe were her correspondents, and could not be without her traffic ; that the rich merchants, inclosed within her walls, were in a condition to dispute pre-
 dency with crowned heads, and pretended, at least, to an equality with them : *Who hath taken this counsel against Tyre, the crowned city, whose merchants are princes, whose traffickers are the honourable of the earth ?* Isa. xxiii. 8.

* Arabia Desert, Cedar was near it.

† Shebah and Raamah. People of Arabia Felix. All antiquity mentions the riches and spices of this people.

I have related elfewhere the deftruction of the antient Tyre by Nebuchadonofor, after a fiefge of thirteen years; and the eftablifhment of the new Tyre, which foon repoffeffed itfelf of the empire of the fea, and continued its commerce with more fuccefs, and more fplendor, than before; till at length, being ftormed by Alexander the Great, he deprived it of its maritime ftrength and trade, which were transferred to Alexandria, as we fhall foon fee.

Whilft both the old and new Tyre experienced fuch great revolutions, Carthage, the moft confiderable of their colonies, was become very flourifhing. Traffic had given it birth: traffic augmented it, and put it into a condition to difpute the empire of the world for many years with Rome. Its fituation was much more advantageous than that of Tyre. It was equally diftant from all the extremities of the Mediterranean fea; and the coaft of Africa, upon which it was fituated, a vaft and fertile region, fupplied it abundantly with the corn neceffary to its fubfiftence. With fuch advantages thofe Africans, making the beft ufe of the happy genius for trade and navigation which they had brought from Phœnicia, attained fo great a knowledge of the fea, that in that point, according to the testimony of Polybius, no nation was equal to them. By this means they rofe to fuch an height of power, that in the beginning of their third war with the Romans, which occafioned their final ruin, Carthage had feven hundred thoufand inhabitants, and three hundred cities in its dependance upon the continent of Africa only. They had been mafters not only of the tract of land extending from the great Syrtes to the pillars of Hercules, but alfo of that which extends itfelf from the fame pillars to the fouthward, where Hanno, the Carthaginian, had founded fo many cities, and fettled fo many colonies. In Spain, which they had al-

most entirely conquered, Asdrubal, who commanded there after Barca, Hannibal's father, had founded Carthage, one of the most celebrated cities of those times. Great part also of Sicily and Sardinia had formerly submitted to their yoke.

Posterity might have been indebted for great lights to the two illustrious monuments of the navigation of this people, in the history of the voyages of Hanno, stiled King of the Carthaginians, and of Imilco, if time had preserved them. The first related the voyages he had made in the ocean beyond the pillars of Hercules, along the western coast of Africa; and the other his on the western coast of Europe; both by the order of the senate of Carthage. But time has consumed those writings.

This people spared neither pains nor expences to bring navigation to perfection. That was their only study. The other arts and sciences were not cultivated at Carthage. They did not pique themselves upon polite knowledge. They professed neither poetry, eloquence, nor philosophy. The young people, from their infancy, heard of nothing in conversation, but merchandize, accounts, ships, and voyages. Address in commerce was a kind of inheritance in their families, and was the best part of their fortunes; and, as they added their own observations to the experience of their fathers, we ought not to be surpris'd, that their ability in this way always increased, and made such a wonderful progress.

Hence it was that commerce raised Carthage to so high a degree of wealth and power, that it cost the Romans two wars; the one of twenty-three, and the other of seventeen, years, both bloody and doubtful, to subdue that rival; and that at last victorious Rome did not believe it in her power to subject her enemy entirely, but by depriving her of the resources she might still have found in trade;

trade; and which, during so long a series of years, supported her against all the forces of the republic.

Carthage had never been more powerful by sea, than when Alexander besieged Tyre, the metropolis of her people. Her fortune began to decline from that time. Ambition was the ruin of the Carthaginians. Their being weary of the pacific condition of merchants, and preferring the glory of arms to that of traffic, cost them dear. Their city, which commerce had peopled with so great a multitude of inhabitants, saw its numbers diminish to supply troops, and recruit armies. Their fleets, accustomed to transport merchants and merchandise, were no longer freighted with any thing, but munitions of war and soldiers; and, out of the wisest and most successful traders, they elected officers and generals of armies, who acquired them an exalted degree of glory indeed, but one of short duration, and soon followed with their utter ruin.

The taking of Tyre by Alexander the Great, and the founding of Alexandria, which soon followed, occasioned a great revolution in the affairs of commerce. That new settlement was, without dispute, the greatest, the most noble, the wisest, and the most useful design that conqueror ever formed.

It was not possible to find a more happy situation, nor one more likely to become the mart for all the merchandise of the east and west. That city had on one side a free commerce with Asia, and the whole East by the Red sea. The same sea, and the river Nile, gave it a communication with the vast and rich countries of Ethiopia. The commerce of the rest of Africa and Europe was open to it by the Mediterranean; and, for the inland trade of Egypt, it had, besides the navigation of the Nile, and the canals cut out of it, the assistance of the caravans, so convenient for the security

curity of merchants, and the conveyance of their effects.

This induced Alexander to believe it a proper place for founding one of the finest cities and ports in the world. For the isle of Pharos, which at that time was not joined to the continent, supplied him with the happiest situation, after he had joined them by a mole, having two entrances, in which the vessels of foreign nations arrived from all parts, and from whence the Egyptian ships were continually sailing to carry their factors, and commerce, to all parts of the world then known.

Alexander lived too short a time to see the happy and flourishing condition, to which commerce raised his city. The Ptolomies, to whose share, after his death, Egypt fell, took care to improve the growing trade of Alexandria, and soon raised it to a degree of perfection and extent, that made Tyre and Carthage be forgotten, which, for a long series of time, had transacted, and engrossed to themselves, the commerce of all nations.

Of all the kings of Egypt, Ptolomæus Philadelphus was the prince who contributed most to the bringing of commerce to perfection in his country. For that purpose he kept great fleets at sea, of which Athenæus gives us the number, and description, that cannot be read without astonishment. Besides upwards of six-score sail of galleys of an extraordinary size, he gives him more than four thousand other ships, which were employed in the service of the state, and the improvement of trade. He possessed a great empire, which he had formed, by extending the bounds of the kingdom of Egypt into Africa, Ethiopia, Syria, and beyond the sea, having made himself master of Cilicia, Pamphylia, Lycia, Caria, and the Cyclades, possessing almost four thousand cities in his dominions. To raise the happiness of these provinces as high as possible, he endeavoured to draw into them,

Athen. l. 5.

P. 203.

Vol. VII.
P. 306.

them, by commerce, the riches and commodities of the East; and, to facilitate their passage, he built a city expressly on the western coast of the Red sea, cut a canal from Coptus to that sea, and caused houses to be erected along that canal, for the convenience of the merchants and travellers, as I have observed in its place.

Cic. apud
Strab. l.
17. P. 798.

It was the convenience of this staple for merchandise, at Alexandria, which diffused immense riches over all Egypt; riches so considerable, that it is affirmed the customs only, for the importation and exportation of merchandise at the port of Alexandria, amounted yearly to more than thirty-seven millions of livres, though most of the Ptolemies were moderate enough in the imposts they laid on their people.

Tyre, Carthage, and Alexandria were, without dispute, the most famous cities of antiquity for commerce: It was also followed with success at Corinth, Rhodes, Marseilles, and many other cities, but not with such extent and reputation.

ARTICLE III.

The end and materials of commerce.

THE passage of Ezekiel, which I have cited in regard to Tyre, includes almost all the materials, in which the antient commerce consisted: Gold, silver, iron, copper, tin, lead, pearls, diamonds, and all sorts of precious stones; purple, stuffs, cloths, ivory, ebony, cedar, myrrh, aromatic reeds, or the calamus; perfumes, slaves, horses, mules, grain, wine, cattle; and, in a word, all kind of precious merchandise. I shall not dwell here upon any thing, but what relates to mines of iron, copper, gold, silver, pearls, purple, and silk; nor treat even these heads with any great extent. Pliny the naturalist will be my ordinary guide,

guide, as to those of my subjects he has wrote upon. And I shall make great use of the learned remarks of the author of the natural history of gold and silver, extracted from the thirty-third book of Pliny, and printed at London.

S E C T. I.

Mines of iron.

IT is certain, that the use of metals, especially of iron and copper, is almost as old as the world: but it does not appear, that gold or silver were much regarded in the first ages. Solely intent upon the necessities of life, the first inhabitants of the earth did what new colonies are obliged to do. They applied themselves in building them houses, clearing lands, and furnishing themselves with the instruments necessary for cutting wood, hewing stone, and other mechanical uses. As all these tools could be formed only of iron, copper, or steel, those essential materials became, by a necessary consequence, the principal objects of their pursuit. Those who were settled in countries which produced them, were not long without knowing their importance. People came from all parts in quest of them; and their land, though in appearance poor and barren in every other respect, became an abundant and fertile soil to them. They wanted nothing, having that merchandise; and their iron bars were ingots, which procured them all the conveniencies and elegancies of life.

It would be very grateful to know where, when, how, and by whom these materials were first discovered. Concealed as they are from our eyes, and hid in the bowels of the earth in small and almost imperceptible particles, which have no apparent relation, or visible disposition for the different works composed of them, who was it that instructed man in the uses to be made of them? It would be doing chance

chance too much honour to impute to it this discovery. The infinite importance, and almost indispensable necessity for the instruments, with which they supply us, well deserve, that we should acknowledge it to proceed from the concurrence and goodness of Divine Providence. It is true, that providence commonly takes delight in concealing its most wonderful gifts under events, which have all the appearance of chance and accident. But attentive and religious eyes are not deceived in them, and easily discover, under these disguises, the beneficence and liberality of God, so much the more worthy of admiration and acknowledgment, as less visible to man. This is a truth confessed by the Pagans themselves, as I have already observed elsewhere.

It is remarkable, that * iron, which, of all metals, is the most necessary, is also the most common, the easiest to be found, less deep in the earth than any other, and most abundant.

As I find little in Pliny upon the manner in which the antients discovered and prepared metals, I am obliged to have recourse to what the moderns say upon that head, in order to give the reader, at least, some slight idea of the usual methods in the discovery, preparation, and melting of those metals; which were in part practised by the antients.

Plin. l. 34.
c. 14, 15.

The matter, from which iron is extracted, (which the term of art calls *iron-ore*) is found in mines of different depth, sometimes in stones as big as the fist, and sometimes only in sand.

After having amassed the quantity of matter to be melted, it is put into large furnaces, where a great fire has been kindled. When the ore is melted and well skimmed, they make it run out of the furnace through a hole prepared for that pur-

* Ferri metalla ubique propemodum reperiuntur—Metallorum omnium vena ferri largissima est. *Plin.* l. 34. c. 14.

pose, from which running with rapidity like a torrent of fire, it falls into different moulds, according to the variety of works to be cast, as kettles, and such kind of utensils.

In the same manner they form also the large lumps of iron, called *soves*, of different sizes, which weigh sometimes two or three thousand pounds, and upwards. These are afterwards carried to the forge or foundery, to be forged or fined with the assistance of mills, which keep great hammers continually going.

Steel is a kind of iron refined and purified by fire, which renders it whiter, more solid, and of a smaller and finer grain. It is the hardest of all metals, when prepared and *tempered* as it ought. That *temper* is derived from cold water, and acquires a nice attention in the workman, in taking the steel out of the fire, when it has attained a certain degree of heat.

Stridentia
tingunt
æra lacu.

When we consider a sharp and well polished knife or razor, could we believe it was possible to form them out of a little earth, or some blackish stone? What difference is there between so rude a matter, and such polished and shining instruments! Of what is not human industry capable!

Mr. Reaumur* observes, in speaking of iron, one thing well worthy of observation. Though fire seldom or ever renders it so liquid as it does gold, brass, pewter, and lead: of metals, however, there is not one that takes the mould so perfectly, insinuates itself so well into the most minute parts of it, and receives impressions with such exactness.

* *Memoires de l'Acad. de Scienc. an. 1726.*

S E C T. II.

Mines of copper or brass.

COPPER, which is otherwise called brass, is an hard, dry, weighty metal. It is taken out of mines like other metals, where it is found, as well as iron, either in powder or stone.

Before it is melted, it must be washed very much, in order to separate the earth from it, with which it is mixed. It is afterwards melted in the furnaces by great fires, and when melted, poured off into moulds. The copper which has had only one melting, is the common and ordinary copper.

To * render it purer and finer, it is melted once or twice more. When it has passed the fire several times, and the grossest parts are separated from it, it is called *Rosette*, or the purest and finest copper.

Copper is naturally red, of which brass is a species made yellow with *Lapis calaminaris*.

The *Lapis calaminaris*, which is also called *Cadmia* †, is a mineral or fossile, which founders use to change the colour of copper yellow. This stone does not become yellow, till after it has been baked in the manner of bricks; it is then used either to make yellow, or increase, the red fine copper.

The yellow copper, or brass, is therefore a mixture of the red, with *lapis calaminaris*, which augments its weight from ten to fifty in the hundred, according to the different goodness of the copper. It is called also *Latten*, and in the Roman language *Aurickalcum*.

Bronze is a made metal, consisting of a mixture of several metals.

* Præterea semel recoquant: quod sæpius fecisse, bonitati plurimum confert. *Plin.* l. 34. c. 8.

† Vena (æris) quo dictum est modo effoditur ignique perficitur. Fit & è lapide ærolo, quem vocant *Cadmiam*. *Plin.* l. 34. c. 1.

For the fine statues of this metal, the mixture is half fine copper and half brass. In the ordinary sort, the mixture is of pewter, and sometimes of lead, to save cost.

There is also another species of mixt copper, called by the French *l'onte*, which differs from the *Bronze*, only by being more or less mixed.

The art of founding, or, as it is vulgarly called, of casting in brass, is very antient. All ages have made their vessels, and other curious works, in metal. Casting must have been very common in Egypt, when the Israelites left it, as they could form in the desert, without any great preparations, a statue with lineaments and shape, representing a calf. Soon after they made the molten sea, and all other vessels for the tabernacle, and afterwards for the temple. It was not uncommon to form statues of plates hammered into form, and rivetted together.

The invention of these images, either cast or hammered, took birth in the East, as well as idolatry, and afterwards communicated itself to Greece, which carried the art to the highest degree of perfection.

The most celebrated and valuable copper amongst the Greeks was that of Corinth, of which I have spoken elsewhere, and that of Delos. Cicero* joins them together in one of his orations, where he mentions a vessel of brass, called *authepsa*, in which meat was dressed with very little fire, and almost of itself: this vessel was sold so dear, that those who passed by, and heard the sum bid for it at the sale, imagined the purchase of an estate was in question.

* *Domus referta vasis Corinthiis & Deliacis: in quibus est authepsa illa, quam tanto pretio nuper mercatus est, ut qui pretereuntes pretium enumerari audiebant, fundum venire arbitrarentur.*
Orat. pro Rosc. Amer. n. 133.

It is said, that brass was used before iron for the making of arms. It certainly was so before gold and silver for money, at least with the Romans. It consisted at first in lumps of brass, of different bigness, and was taken by weight, without having any fixed mark or figure upon it; from whence came the form of speaking used in sales, *per æs & libram*. * Servius Tullius, the sixth king of the Romans, was the first that reduced it to form, and stamped it with a particular impression. And as at that time the greatest riches consisted in cattle, oxen, sheep, hogs, &c. the figure of those animals, or of their heads, was stamped upon the first money that was coined, and it was called *pecunia*, from the word *pecus*, which signifies cattle in general. It was not till the consulship of Q. Fabius and Ogulnius, five years before the first Punic war, in the 485th year of Rome, that silver species was used at Rome. They, however, always retained the antient language, and denomination, taken from the word *æs*, brass. From thence the expression, *æs grave*, (heavy brass) to signify, at least in the origin of that term, the *asses* of a pound weight; *ærarium*, the public treasury, wherein, in antient times, there was only brass-money; *æs alienum*, borrowed money; with many others of like signification.

Plin. l. 34.
c. 1.

* Servius Rex, primus signavit æs. Antea rudi usos Romæ Timæus tradit. Signatum est nota pecudum: unde pecunia appellata. *Plin. l. 33. c. 3.*

S E C T III.

Mines of gold.

TO find gold, says Pliny, we have three different methods. It is extracted either from rivers, the bowels of the earth, or the ruins of mountains, by undermining and throwing them down. Plin. l. 33. c. 4.

1. *Gold found in rivers.*

Gold is gathered in small grains, or little quantities, upon the shores of rivers, as in Spain upon the brink of the Tagus, in Italy upon the Po, in Thrace upon the Hebrus, in Asia upon the Pactolus, and, lastly, upon the Ganges in India; and* it is agreed, that the gold found in this manner is the best of all; because, having long run through rocks, and over sands, it has had time to cleanse and purify itself.

The rivers I mention were not the only ones in which gold was to be found. Our Gaul had the same advantage. Diodorus says, that nature had given it gold in a peculiar manner without obliging the natives to hunt after it with art and labour; that it was mingled with the sands of the rivers; that the Gauls knew how to wash those sands, extract the gold, and melt it down; and that they made themselves rings, bracelets, girdles, and other ornaments of it. Some rivers of France are † said to have retained this privilege: the Rhine, the Rhone, the Garonne, the Doux in Franche Comté, the Cèze, and the Gardon, which have their sources in the Cevennes, the Ariège in the county of Foix, Diod. l. 5.

* Nec ullum absolutum aurum est, ut cursu ipso trituque perpolitum. *Plin.*

† *Memoirs of the Acad. of Sciences, an. 1718.*

and some others. The gathering of it indeed does not turn to any considerable account, scarce sufficing to the maintenance of the country-people, who employ themselves for some months in that work. They have sometimes their lucky days, when they get more than a pistole for their trouble; but they pay for them on others, which produce little or nothing.

2. *Gold found in the bowels of the earth.*

Those who search after gold, begin by finding what we call, in French, *la manne*, manna, a kind of earth, which by its colour, and the exhalations that rise from it, informs those, who understand mines, that there is gold underneath it.

As soon as the vein of gold appears, the water must be turned off, and the ore dug out industriously, which must be taken away, and washed in proper lavers. The ore being put into them, a stream of water is poured on continually, in proportion to the quantity of the ore to be washed; and, to assist the force of the water, an iron fork is used, with which the ore is stirred, and broken, till nothing remains in the laver, but a sediment of black sand, with which the gold is mingled. This sediment is put into a large wooden dish, in the midst of which four or five deep lines are cut, and by washing it, stirring it well in several waters, *conjectura*, the terrene parts dissolve, and nothing remains but pure gold duit. This is the method now used in Chili, and the same as was practised in the time of Pliny:

See *Diët. of Commerce.*
 Plin. l. 33.
 c. 4.

Aurum qui querunt, ante omnia segullum tollunt: ita vocatur indicium. Alveus hic est, arenae lavantur, atque ex eo quod resedit, conjectura capitur. Every thing is comprehended in these few words. *Segullum*: which is what the French call *la manne*, or manna. *Alveus hic est*: that is, the vein of gold ore. *Arenae lavantur*: this implies the lavers. *Atque ex eo quod resedit*:
 this.

this is the sediment of black sand, in which the gold is contained. *Conjectura capitur*: here the stirring of the sediment, the running off of the water, and the gold-dust that remains are intimated.

It sometimes happens, that, without digging far, the gold is found upon the superficies of the earth: but this good fortune is not frequent, though there have been examples of it. For not long ago, says Pliny, gold was found in this manner in Nero's Plin. l. 33. reign, and in so great a quantity, that fifty pounds c. 4. a day, at least, have been gathered of it. This was in Dalmatia.

It is commonly necessary to dig a great way, and to form subterraneous caverns, in which marble and small flints are found, covered with the gold. These caverns are carried on to the right or left according to the running of the vein: and the earth above it is supported with strong props at proper distances. When the metallic stone, commonly called the ore in which the gold forms itself, is brought out of the mine, it is broken, pounded, washed, and put into the furnace. The first melting is called only silver, for there is always some mingled with the gold.

The scum which rises in the furnace, is called *Scoria* in Latin. This is the dross of the metal, which the fire throws up, and is not peculiar to gold, but common to all metallic bodies. This dross is not thrown away, but pounded and calcined over again, to extract what remains of good in it. The crucible, in which this preparation is made, It is called ought to be of a certain white earth, not unlike Tasconium. that used by the potters. There is scarce any other, which can bear the fire, bellows, and excessive heat of this substance melted.

This metal is very precious, but costs infinite Diod. l. 3. pains in getting it. Slaves and criminals condemned to death, were employed in working the mines. The thirst of gold has always extinguished all sense

of humanity in the human heart. Diodorus Siculus observes, that these unhappy creatures, laden with chains, were allowed no rest either by night or day: that they were treated with excessive cruelty; and, to deprive them of all hopes of being able to escape by corrupting their guards, soldiers were chosen for that office, who spoke a language unknown to them, and with whom, in consequence, they could have no correspondence nor form any conspiracy.

3. *Gold found in the mountains.*

Plin. l. 33.
c. 4.

There is another method to find gold, which regards properly only high and mountainous places, such as are frequently met with in Spain. * These are dry and barren mountains in every other respect, which are obliged to give up their gold, to make amends, in some measure, for their sterility in every thing else.

The work begins at first by cutting great holes on the right and left. The mountain itself is afterwards attacked by the assistance of torches and lamps. For the day is soon lost, and the night continues as long as the work, that is, for several months. Before any great progress is made, great flaws appear in the earth, which falls in, and often crushes the poor miners to death; so that, says † Pliny, people are much more bold and venturesome in searching after pearls at the bottom of the waves in the East, than in digging for gold in the bowels of the earth, which is become, by our avarice, more dangerous than the sea itself.

It is therefore necessary in these mines, as well as in the first I spoke of, to form good arches at proper distances, to support the hollowed mountain.

* Cæteri montes Hispaniarum aridi sterilesque, in quibus nihil aliud gignatur, huic bono fertiles esse coguntur. *Plin.*

† Ut jam minus temerarium videatur è profundo maris petere margaritas: tanto nocentiores fecimus terras. *Plin.*

There

There are great rocks and veins of stone found also in these, which must be broken by fire and vinegar. But, as the smoke and steam would soon suffocate the workmen, it is often more necessary, and especially when the work is a little advanced, to break those enormous masses with pick-axes and crows, and to cut away large pieces by degrees, which must be given from hand to hand, or from shoulder to shoulder, till thrown out of the mine. Day and night are passed in this manner. Only the hindmost workmen see day-light; all the rest work by lamps. If the rock is found to be too long, or too thick, they proceed on the side, and carry on the work in a curve line.

When the work is finished, and the subterraneous passages are carried their proper length, they cut away the props of the arches, that had been formed at due distances from each other. This is the usual signal of the ruin which is to follow, and which those, who are placed to watch it, perceive first, by the sinking in of the mountain, which begins to shake: upon which they immediately, either by hallowing, or beating upon a brazen instrument, give notice to the workmen to take care of themselves, and run away the first for their own safety. The mountain, fapped on all sides in this manner, falls upon itself, and breaks to pieces with a dreadful noise. The * victorious workmen then enjoy the sight of nature overturned. The gold, however, is not yet found; and, when they began to pierce the hill, they did not know whether there was any in it. Hope and avarice were sufficient motives for undertaking the labour, and confronting such dangers.

But this is only the prelude to new toils, still greater and more heavy than the first. For the

* *Spestant victores ruinam naturæ: nec tamen adhuc aurum est.*
Plin.

waters of the higher neighbouring mountains must be carried through very * long trenches, in order to its being poured with impetuosity upon the ruins they have formed, and to carry off the precious metal. For this purpose new canals must be made, sometimes higher or lower, according to the ground; and hence the greatest part of the labour arises. For the level must be well placed, and the heights well taken in all the places, over which the torrent is to pass to the lower mountain, that has been thrown down; in order that the water may have sufficient force to tear away the gold wherever it passes, which obliges them to make it fall from the greatest height they can. And, as to the inequality of the ground in its course, they remedy that by artificial canals, which preserve the descent, and keep the water within their bounds. And if there are any large rocks, which oppose its passage, they must be hewn down, made level, and have tracks cut in them for the wood-work, which is to receive and continue the canal. Having united the waters of the highest neighbouring mountains, from whence they are to fall, they make great reservoirs, of the breadth of two hundred, and the depth of ten, feet. They generally leave five openings, of three or four feet square, to receive the water at several places.

After which, when the reservoirs are full, they open the sluice, from whence falls so violent and impetuous a torrent, that it carries all away before it, and even stones of considerable magnitude.

There is another work in the plain, at the foot of the mine. New trenches must be dug there, which form several beds, for the falling of the torrent from height to height, till it discharges itself into the sea. But, to prevent the gold from being carried off with the current, they lay, at proper distances, good dams

* A centesimo plerumque lapide.

of *Ulex*, a sort of shrub, much resembling our rosemary, but something thicker of leaves, and consequently fitter for catching this prey as in nets. Add to this, that good planks are necessary on each side of these trenches, to keep the water within them; and where there are any dangerous inequalities of ground, these new canals must be supported with * shores, till the torrent loses itself at last in the sand of the ocean, in the neighbourhood of which the mines commonly are.

The gold, got in this manner at the feet of mountains, has no need of being purified by fire; for it is at first what it ought to be. It is found in lumps of different bigness, as it is also in deep mines, but not so commonly.

As to the wild rosemary branches used on this occasion, they are taken up with care, dried, and then burnt; after this the ashes are washed on the turf, upon which the gold falls, and is easily gathered.

Pliny examines wherefore gold is preferred to other metals, and gives several reasons for it. Plin. l. 33.
c. 3.

It is the only metal, which loses nothing, or almost nothing by the fire, not even of funeral piles, or conflagrations, in which the flames are generally most violent. It is even affirmed to be rather the better for having past the fire several times. It is by fire also that proof is made of it; for, when it is good, it takes its colour from it. This the workmen call *obryzum*, refined gold. What is wonderful in this proof, is, that the hottest charcoal has no effect on it: to melt it, † a clear fire of straw is necessary, with a little lead thrown in to refine it.

* Machines to support those canals made of board.

† Strabo makes the same remark, and gives the reason for this effect: *Palea facilius liquefit aurum: quia flamma mollis cum fit proportionem habet temperatam ad id quod cedit & faciliè funditur; carbo autem multum absumit, nimis colliquans sua vehementia & elevans.* *Strab. l. 3. p. 146.*

Gold loses very little by use, and much less than any other metal : whereas silver, copper, and pewter, soil the hands, and draw black lines upon any thing, which is a proof that they waste, and lose their substance more easily.

It is the only metal that contracts no rust, nor any thing which changes its beauty, or diminishes its weight. It is a thing well worthy of admiration, that of all substances gold preserves itself best, and entire, without rust or dirt, in water, the earth, dung, and sepulchres, and that throughout all ages. There are medals in being, which have been struck above two thousand years, which seem just come from the workman's hands.

It is observed, that * gold resists the impressions and corrosion of salt and vinegar, which melt and subdue all other matter.

There is † no metal which extends better, nor divides into so great a number of particles of different kinds. An ounce of gold, for instance, will form seven hundred and fifty leaves, each leaf of four inches square and upwards. What Pliny says here, is certainly very wonderful ; but we shall presently see, that our modern artificers have carried their skill much farther than the antients in this, as well as many other points.

In fine, gold will admit to be spun and wove, like wool, into any form. It may be worked even without wool (or silk) or with both. The first of the Tarquins triumphed in a vest of cloth made of gold ; and Agrippina, the mother of Nero, when the emperor Claudius her husband gave the people the representation of a sea-fight, appeared at it in

* Jam contra salis & aceti succos, domitores rerum, constantia. *Plin.*

† Nec aliud laxius dilatatur, aut numerosius dividitur, utpote cujus uncie in septingenas, pluresque bracteas, quaternum utroque digitorum, spargantur. *Plin.*

a long robe made of gold wires, without any mixture whatsoever.

What is related of the extreme smallness of gold and silver, when reduced into wire, would seem incredible, if not confirmed by daily experience. I shall only copy here what I find in the memoirs of An. 1718. the academy of sciences upon this head.

We know, say those memoirs, that gold-wire is only silver-wire gilt. By the means of the engine for drawing wire, a cylinder of silver, covered with leaf gold, being extended, becomes wire, and continues gilt to the utmost length it can be drawn. It is generally of the weight of forty-five *marks*; its diameter is an inch and a quarter French, and its length almost two and twenty inches. Mr. Reaumur proves, that this cylinder of silver, of two and twenty inches, is extended by the engine to thirteen million, nine hundred and sixty-three thousand, two hundred and forty inches, or, one million, one hundred and sixty-three thousand, five hundred and twenty feet; that is to say, six hundred and thirty-four thousand, six hundred and ninety-two times, longer than it was, which is very near ninety-seven leagues in length, allowing two thousand perches to each league. This wire is spun over silk-thread, and before spun is made flat from round as it was, when first drawn, and in flattening generally lengthens one seventh at least; so that its first length of twenty two inches is changed into that of an hundred and eleven leagues. But this wire may be lengthened a fourth in flattening, instead of a seventh, and in consequence be sixscore leagues in extent. This should seem a prodigious extension, and yet is nothing.

The cylinder of silver of forty-five marks, and twenty two inches length, requires only to be covered with one ounce of leaf gold. It is true, the gilding will be light, but it will always be gilding; and, though the cylinder in passing the engine attains the

the

the length of a hundred and twenty leagues, the gold will still continue to cover the silver without variation. We may see how exceedingly small the ounce of gold, which covers the cylinder of silver of forty-five marks, must become, in continuing to cover it throughout so vast an extent. Mr. Reaumur adds to this consideration, that it is easy to distinguish, that the silver is more gilt in some than in other places; and he finds, by a calculation of wire the most equally gilt, that the thickness of the gold is $\frac{1}{105000}$ th of a line, or twelfth part of an inch; so enormous a smallness, that it is as inconceivable to us, as the infinite points of the geometricians. It is, however, real, and produced by mechanical instruments, which, though ever so fine to our senses, must still be very gross in fact. Our understanding is lost and confounded in the consideration of such objects; and how much more in the *infinitely Small of God!*

ELECTRUM.

Lib. 33.
c. 3.

It is necessary to observe, says Pliny, whom I copy in all that follows, that in all kinds of gold there is always some silver, more or less: sometimes a tenth, sometimes a ninth or an eighth. There is but one mine in Gaul from whence gold is extracted, that contains only a thirtieth part of silver, which makes it far more valuable than all others. This gold is called *Albicratense*, of *Albicate*, (an ancient place in Gaul near Tarbæ.) There were several mines in Gaul, which have been since either neglected or exhausted. Strabo mentions some of them, amongst which are those of Tarbæ, that were, as he says, *very fruitful in gold*. For, without digging far, they found it in quantities large enough to fill the palm of the hand, which had no great occasion for being refined. They had also abundance

Strab. l. 4.
p. 190.

abundance of gold dust, and gold in grains of equal ^{Buds;} goodnefs with the other.

To the gold, continues Pliny, which was found to have a fifth part of silver in it, they gave the name of ELECTRUM. It might be called white gold, because it came near that colour, and is paler than the other.) The most antient people seemed to have set a great value upon it. Homer, in his ^{Odyf. l. 4.} description of Menelaus's palace, says, it shone uni-^{v. 71.}versally with gold, electrum, silver, and ivory. The electrum has this property peculiar to it, that it brightens much more by the light of lamps than either gold or silver.

S E C T. IV.

Silver-mines.

SILVER-MINES, in many respects, resemble ^{Plin. l. 33.} those of gold, The earth is bored, and long ^{c. 6.} caverns cut on the right or left, according to the course of the vein. The colour of the metal does not enliven the hopes of the workmen, nor the ore glitter and sparkle as in the others. The earth which contains the silver is sometimes reddish, and sometimes of an ash colour; which the workmen distinguish by use. As for the silver, it can be only refined by fire, with lead, or with * pewter-ore. This ore is called *galena*, and found commonly in the veins of silver mines. The fire only separates these substances; the one of which it reduces into lead or pewter, and the other into silver; but the last always swims at top, because it is lightest, almost like oil upon water.

There were silver-mines in almost all the provinces of the Roman empire. That metal was

* This ore is the rude and mixed substance which contains the metal. It is commonly called the Marcasite stone, especially with relation to gold and silver.

found in Italy near Vercellæ; in Sardinia, where there was abundance of it; in several places of the Gauls; even in Britain; in Alface, witness Strasburgh, which took its name *Argentoratum*, as Colmar did *Argentaria*, from it; in Dalmatia and Pannonia, now called Hungary; and, lastly, in Spain and Portugal, which produced the finest gold.

What is most surprising in the mines of Spain, is, that the works, begun in them by Hannibal's *
 Plin. *ibid.* orders, subsist in our days, says Pliny; that is to say, above three hundred years; and that they still retain the names of the first discoverers of them, who were all Carthaginians. One of these mines, amongst the rest, exists now, and is called *Bebulo*. It is the same from which Hannibal daily extracted three hundred pounds of silver, and has been run fifteen hundred paces in extent, and even through the mountains, by the † Accitanian people; who, without resting themselves, either by night or day, and supporting themselves only by the aid of their lamps, have drawn off all the water from them. There are also veins of silver, discovered in that country, almost upon the surface of the earth.

For the rest, the ancients easily knew when they were come to the end of the vein, which was when they found allum; after that, they searched no farther, though lately, (it is still Pliny who speaks) beyond the allum, they have found a white vein of copper, which served the workmen as a new token, that they were at the end of the vein of silver.

The discovery of the metals we have hitherto spoken of, is a wonder we can never sufficiently admire. There was nothing more hidden in nature than gold and silver. They were buried deep in

* *When he went thither to besiege Saguntum.*

† *The people of Murcia and Valentia, which were part of the district of new Carthage.*

the earth, mingled with the hardest stones, and in appearance perfectly uselefs; the parts of these precious metals were so confounded with foreign bodies, so imperceptible from that mixture, and so difficult to separate, that it did not seem possible to cleanse, collect, refine, and apply them to their uses. Man, however, has surmounted this difficulty, and, by experiments, has brought his first discoveries to such perfection, that one would imagine gold and silver were formed from the first in solid pieces, and were as easily distinguished as the flints, which lie on the surface of the earth. But was man of himself capable of making such discoveries? Cicero* says, in express terms, that God had in vain formed gold, silver, copper, and iron, in the bowels of the earth, if he had not vouchsafed to teach man the means, by which he might come at the veins, that conceal those precious metals.

S E C T. VI.

Product of gold and silver mines, one of the principal sources of the riches of the antients.

IT is easy to conceive that mines of gold and silver must have produced great profits to the private persons and princes who possessed them, if they took the least trouble to work them.

Philip, the father of Alexander the Great, had gold-mines near Pydna, a city of Macedonia, from which he drew yearly a thousand talents, that is to say, three millions. He had also other mines of gold and silver in Thessaly and Thrace; and it appears, that these mines subsisted as long as the

Diod. 1. 16.

Justin. 1. 8.

C. 3.

Strab. 1. 7.

p. 331.

* Aurum & argentum, æs & ferrum frustra natura divina genuisset, nisi eadem docuisset quemadmodum ad eorum venas perveniretur. *De Divinat.* l. 1. n. 116.

kingdom of Macedonia; for* the Romans, when they had conquered Perseus, prohibited the use and exercise of them to the Macedonians.

Xenoph.
de ration.
redit.

The Athenians had silver mines not only at Laurium in Attica, but particularly in Thrace, from which they were great gainers. Xenophon mentions many citizens enriched by them. Hipponius had six hundred slaves: Nicias, who was killed in Sicily, had a thousand. The farmers of their mines paid daily to the first fifty livres, clear of all charges, allowing an obolus † a day for each slave; and as much in proportion to the second, which amounted to a considerable revenue.

Xenophon, in the treatise wherein he proposes several methods for augmenting the revenues of Athens, gives the Athenians excellent advice upon this head, and exhorts them, above all, to make commerce honourable; to encourage and protect those, who applied themselves to it, whether citizens or strangers; to advance money for their use, taking security for the payment; to supply them with ships for the transportation of merchandise; and to be assured, that, with regard to trade, the opulence and strength of the state consisted in the wealth of individuals, and of the people. He insists very much in relation to mines, and is earnest that the republic should cultivate them in its own name, and for its own advantage, without being afraid of injuring particulars in that conduct; because they sufficed for the enriching both the one and the other, and that mines were not wanting to workmen, but workmen to the mines.

But the produce of the mines of Attica and Thrace was nothing in comparison with what the Spanish mines produced. The Tyrians had the

* *Metalli quoque Macedonici, quod ingens vestigal erat, locutiones tolli placebat. Liv. l. 45. n. 18.*

† *Six oboli made one drachma, which was worth ten pence French a hundred drachmas a mina, and sixty minæ, a talent.*

first profits of them; the inhabitants of the country not knowing their value. The Carthaginians succeeded them; and as soon as they had set foot in Spain, perceived the mines would be an inexhaustible source of riches for them. Pliny informs us, Plin. l. 33. c. 6. that one of them alone supplied Hannibal daily with three hundred pounds of silver, which amounts to twelve thousand six hundred livres; as the same Pliny observes elsewhere.

Polybius, cited by Strabo, says, that in his time Ibid. c. 9. there were forty thousand men employed in the mines in the neighbourhood of Carthagera, and that they paid daily twenty-five thousand drachmas to the Roman people, that is, twelve thousand five hundred livres.

History mentions private persons, who had immense and incredible revenues. Varro speaks of Varr. apud Plin. l. 33. c. 10. one Ptolomy, a private person, who, in the time of Pompey, commanded in Syria, and maintained eight thousand horse, at his own expences; and had generally a thousand guests at his table, who had each a gold cup, which was changed at every course. This is nothing to Pythius of Bithynia, Plin. ibid. Herod. l. 7. c. 27. who made king Darius a present of the *Plantane* and *Vine*, so much extolled in history, both of massy gold, and feasted the whole army of Xerxes one day in a splendid manner, though it consisted of seventeen hundred thousand men; offering that prince five months pay for that prodigious host, and the necessary provisions for the whole time. From what source could such enormous treasures arise, if not principally from the mines of gold and silver possessed by these particulars?

We are surprised to read in Plutarch, the account of the sums carried to Rome, for the triumphs of Paulus Emilius, Lucullus, and many other victorious generals.

But all this is inconsiderable to the endless millions amassed by David and Solomon, and employed

Eloth and
Ezioneg-
ber.

2 Chron.
viii. 18.

2 Chron.
ix. 13.

ployed in the building and ornaments of the temple of Jerufalem. Thofe immense riches, of which the recital aftonifhes us, were partly the fruits of the commerce eftablifhed by David in Arabia, Perfia, and Indoftan, by the means of two ports he had caufed to be built in Idumæa, at the extremity of the Red fea; which trade Solomon muft have confiderably augmented, as, in one voyage only, his fleet brought home four hundred and fifty talents of gold, which amount to above one hundred and thirty-five millions of livres. Judæa was but a fmall country, and neverthelefs the annual revenue of it in the time of Solomon, without reckoning many other fums, amounted to fix hundred and fixty-fix talents of gold, which make near two hundred millions of livres. Many mines muft have been dug in thofe days, for fupplying fo incredible a quantity of gold; and thofe of Mexico and Peru were not then difcovered.

S E C T. VI.

Of coins and medals.

THOUGH commerce began by the exchange of commodities, as appears in Homer; experience foon made the inconvenience of that traffic evident, from the nature of the feveral merchandifes, that could neither be divided, nor cut without confiderable prejudice to their value; which obliged the dealers in them, by little and little, to have recourfe to metals, which diminiſhed neither in goodnefs nor fabric by divifion. Hence from the time of Abraham, and without doubt before him, gold and ſilver were introduced in commerce, and, perhaps, copper alfo for the leſſe wares. As frauds were committed in regard to the weight and quality of the metal, the civil government and public authority interpoſed, for eſta-
bliſhing

blishing the security of commerce, and stamped metals with impressions to distinguish and authorize them. From thence came the various dyes for money, the names of the coiners, the effigies of princes, the years of consulships, and the like marks.

The Greeks put enigmatical hieroglyphics upon their coins, which were peculiar to each province. The people of Delphos represented a dolphin upon theirs: this was a kind of speaking blazonry: the Athenians the bird of their Minerva, the owl, the symbol of vigilance, even during the night: the Bœotians a Bacchus, with a bunch of grapes and a large cup, to imply the plenty and deliciousness of their country: the Macedonians a shield, in allusion to the force and valour of their soldiery: the Rhodians the head of Apollo, or the sun, to whom they dedicated their famous Colossus. In fine, every magistrate took pleasure to express in his money the glory of his province, or the advantages of his city.

The making bad money has been practised in all ages and nations. In the first payment made by the * Carthaginians of the sum, to which the Romans had condemned them at the end of the second Punic war, the money brought by their ambassadors was not of good alloy, and it was discovered, upon melting it, that the fourth part was bad. They were obliged to make good the deficiency by borrowing money at Rome. Antony, Plin. l. 33. c. 9. the Triumvir, at the time of his greatest necessity, caused iron to be mixed with the money coined by his order.

This bad coin was either made by a mixture of copper, or wanted more or less of its just weight.

* Carthagenenses eo anno argentum in stipendium impositum primùm Romam advexerunt. Id quia probum non esse quæstores renunciaverant, ex percentibusque pars quarta decocta erat pecuniâ Romæ mutua sumptâ intertrimentam suppleverunt. *Liv. l. 32. n. 2.*

A pound of gold and silver ought to be, as Pliny observes, fourscore and sixteen, or an hundred drachmas in weight. Marius Gratidianus, brother of the famous Marius, when he was prætor, suppressed several disorders at Rome, relating to the coin, by wise regulations. The people, always sensible of amendments of that kind, to express their gratitude, erected statues to him in all the quarters of that city: It was * this Marius, whom Sylla, to avenge the cruelties committed by his brother, ordered to have his hands cut off, his legs broken, and his eyes put out, by the ministration of Catiline.

Flor. l. 3.
c. 21.
Senec. de
ira, l. 3.
c. 18.

The inconveniencies of exchanges were happily remedied by the coining of gold and silver species, that became the common price for all merchandise, of which the painful, and often useless, carriage, was thereby saved. But the antient commerce was still in want of another advantage, which has been since wisely contrived. I mean the method of remitting money from place to place, by bill directing the payment of it.

It is not easy to distinguish with certainty the difference between coins and medals, opinions differing very much upon that head. What seems most probable is, that a piece of metal ought to be called coin, when it has, on one side, the head of the reigning prince, or some divinity, and is always the same on the reverse. Because money being intended to be always current, the people ought to know it with ease, that they may not be ignorant of its value. Thus the head of Janus, with the beak of a galley on the reverse, was the first money of Rome. Servius Tullius, instead of the head of a ship, stamped that of a sheep, or an ox,

Plin. l. 33.
c. 3.

* M. Mario, cui vicatim populus statuas posuerat, cui thurr & vino Romanus Populus supplicabat. L. Sylla perfringi crura, oculos erui, amputari manus iussit; & quasi toties occideret, quoties vulcerabat, paulatim & per singulos artus laceravit. *Senec.*

on it, from whence came the word *pecunia*, because those animals were of the kind called *pecus*. To the head of Janus, a woman armed was afterwards substituted, with the inscription ROMA; and on the other side, a chariot drawn by two or four horses, of which were the pieces of money called *Bigati*, and *Quadrigati*. Victories were also put on them, *Victoriati*. All these different species are allowed to be coins, as are those which have certain marks on them; as an X, that is to say *Denarius*; an L, *Libra*; an S, *Semis*. These different marks explain the weight and value of the piece.

Medals are pieces of metal, which generally express on the reverse some considerable event.

The parts of a medal are its two sides, of which the one is called the face or head, and the other the reverse. On each side of it there is a field, which is the middle of the medal; the circumference or border; and the exergue, which is the part at the bottom of the piece, upon which the figures represented by the medal are placed. Upon these two faces the type, and the inscription or legend, are distinguished. The figures represented are the type; the inscription or legend is the writing we see on it, and principally that upon the border or circumference of the medal.

To have some idea of the science of medals, it is necessary to know their origin and use; their division into antient and modern, into Greek and Roman; what is meant by the medals of the early or later empire; of the great or small bronze; what a series is in the language of antiquarians. But this is not the proper place for explaining all these things. The book of father Joubert the jesuit, on the knowledge of medals, contains what is necessary to be known, when a profound knowledge of them is not required.

I content myself with informing young persons, who are desirous to study history in all its extent, that the knowledge of medals is absolutely necessary

Mr. Tille-
mont.

to that kind of learning. For history is not to be learnt in books only, which do not always tell the whole, or the truth of things. Recourse must therefore be had to pieces, which support it; and which neither malice nor ignorance can injure or vary; and such are the monuments which we call medals. A thousand things, equally important and curious are to be learnt from them, which are not to be found elsewhere. The pious and learned author of the memoirs upon the history of the emperors gives us a proof and model of the use which may be made of the knowledge of medals.

As much may be said of antique seals and carved stones, which have this advantage of medals, that being of a harder substance, and representing the figures upon them in hollow, they preserve them perpetually in all their perfection; whereas medals are more subject to spoil, either by being rubbed, or by the corrosion of saline particles, to which they are always exposed. But to make amends, the latter being all of them far more abundant than the former in their various species, they are of much greater use to the learned.

The royal academy of *inscriptions and polite learning*, established and renewed so successfully under the preceding reign, and which takes in all erudition, antient and modern for its object, will not a little contribute to preserve amongst us, not only a good taste for inscriptions and medals, which consists in a noble simplicity; but one in general for all works of wit, that are principally founded upon antient authors, whose writings this academy make their peculiar study. I dare not express here all that I think of a society, into which I am admitted, and of which I am a member. I was chosen into it upon its being revived, without making any interest for so honourable a place, and indeed without knowing any thing of it; an introduction, in my opinion, highly worthy of learned Bodies. I could wish

with

wish that I had merited it better, and had discharged the functions of a fellow of the academy with greater abilities.

S E C T. VII.

Of pearls.

THE pearl is an hard, white, clear substance, which forms itself in the inside of a certain kind of oysters.

The testaceous fish, in which the pearls are found, is three or four times as large as the common oyster. It is commonly called *pearl*, or *mother of pearl*.

Each mother of pearl generally produces ten or twelve pearls. An author, however, who has treated of their production, pretends to have seen to the number of an hundred and fifty in one of them, but in various degrees of perfection. The most perfect always appear the first, the rest remain under the oyster, at the bottom of the shell.

Pearl-fishing amongst the antients was followed principally in the Indian seas, as it still is, as well as in those of America, and some parts of Europe. The divers, under whose arms a cord is tied, of which the end is made fast to the bark, go down into the sea several times successively, and after having torn the oysters from the rocks, and filled a basket with them, they come up again with great agility.

This fishing is followed in a certain season of the year. The oysters are commonly put into the sand, where they corrupt by the extraordinary heat of the sun; and opening of themselves shew their pearls, which, after that, it is sufficient to clean and dry.

The other precious stones are quite rough, when taken from the rocks, where they grow, and derive their

their lustre only from the industry of man. Nature alone furnishes the substance which art must finish by cutting and polishing. But, as to pearls, that clear and shining * water, for which they are so much esteemed, comes into the world with them. They are found compleatly polished in the abysses of the sea, and nature puts the last hand to them before they are torn from their shells.

The † perfection of pearls, according to Pliny, consists in their being of a glittering whiteness, large, round, smooth, and of a great weight, qualities seldom united in the subject.

Plin. l. 9.
c. 35.

It is chimerical to imagine, that pearls take birth from dew drops; that they are soft in the sea, and only harden when the air comes to them; that they waste and come to nothing, when it thunders, as Pliny and several authors after him say.

Many things are highly prized only for being scarce, whose ‡ principal merit consists in the danger people are at to get them. It is strange that men should set so small a value upon their lives, and should judge them of less worth than shells hidden in the sea. If it were necessary, for the acquiring of wisdom, to undergo all the pains taken to find some pearl of uncommon beauty and magnitude, (and as much may be said of gold, silver, and precious stones) we ought not to be a moment in resolving to venture life, and that often for such inestimable treasure. Wisdom is the greatest of all fortunes; a pearl the most frivolous of riches: men, however, do nothing for the former, and hazard every thing for the latter.

* In the terms of jewellers, they call the shining colour of pearls water, from their being supposed to be made of water. Hence the pearl-pendants of Cleopatra were said to be inestimable, both for their water and large size.

† Dos omnis in candore, magnitudine orbe, livore, pondere; haud promptis rebus. Plin. l. 9. c. 35.

‡ Anima hominis quæsitâ maxime placent.

Plin. ibid.

S E C T. VIII.

P U R P L E.

STUFFS dyed with purple were one of the most considerable branches of the commerce of the antients, especially of Tyre, which by industry and extreme skill had carried that precious dye to the highest possible degree of perfection. The purple disputed value with gold itself in those remote times, and was the distinguishing mark of the greatest dignities of the universe, being principally appropriated to * princes, kings, senators, consuls, dictators, emperors, and those to whom Rome granted the honour of a triumph.

The purple is a colour, compounded between red and violet, taken from a sea-fish covered with † a shell, called also *The purple*. Notwithstanding various treatises written by the moderns upon this colour so highly prized by the antients, we are little acquainted with the nature of the liquor which produced it. Aristotle and Pliny have left many remarkable things upon this point, but such as are more proper to excite, than fully to satisfy curiosity. The latter, who has spoken the most at large upon the preparation of purple, has confined all he says of it to a few lines. These might suffice for the description of a known practice in those times; but is too little to give a proper idea of it to ours, after the use of it has ceased for many ages.

Arist. de
Hist.
Anim. l. 5.
c. 15.
Plin. l. 9.
c. 38.

Pliny divides the several species of shells, from which the purple dye is taken, into two kinds; the first of which includes the small kind of *Buccinum*, so called from the resemblance between that fish's shell and a hunting-horn; and the second the shells called purple, from the dye they contain.

Plin. l. 9.
c. 39.

* Color nimio lepore vernans, obscuritas rubens, nigredo sanguinea regnantem discernit, dominum conspicuum facit, & præstat humano generi ne de conspectu principis possit errari. *Cassiod. l. 1. Var. Ep. 2.*

† From thence purple habits are called in Latin, conchyliatæ vestes.

It is believed that this latter kind were called also *Murex*.

Jul. Pol-
lux. l. 1.
c. 4.
Cassiod.
l. 1.
Var. Ep. 2.

Some authors affirm, that the Tyrians discovered the dye we speak of by accident. An hungry dog having broke one of these shells with his teeth upon the sea-side, and devoured one of these fish, all around his mouth and throat were dyed by it with so fine a colour, that it surpris'd every body that saw it, and gave birth to the desire of making use of it.

Plin. l. 9.
c. 36—39.

The purple * of Getulia in Africa, and that of † Laconia in Europe, were in great estimation; but the Tyrian in Asia was preferred to all others; and that principally which was twice dipt, called for that reason *dibapha*. A pound of it was sold at Rome for a thousand denarii, that is, five hundred livres.

*Memoirs of
the Acad.
of Sciences.
An 1711.*

The *Buccinum* and *Murex* scarce differed in any thing but the bigness of shell, and the preparation of them. The *Murex* was fished for generally in the open sea; whereas the *Buccinum* was taken from the stones and rocks to which it adhered. I shall speak here only of the *Buccinum*, and shall extract a small part of what I find upon it, in the learned dissertation of Monsieur Reaumur.

The liquor could not be extracted from the *Buccinum*, without employing a very considerable length of time for that purpose. It was first necessary to break the hard shell, that covered them. This shell being broke at some distance from its opening, or the head of the *Buccinum*, the broken pieces were taken away. A small vein then appeared, to use the expression of the antients; or with greater propriety of speech, a snail reservoir, full of the pro-

* Vestes Getulo murice testas.
Robes with Getulian purple dy'd.

HOR.

† Nec Laonicas mihi
Trahunt honestæ purpuras clientæ.
*Nor do my noble clients wives with care
Laconia's purple spin for me to wear.*

HOR.

per liquor for dying purple. The colour of the liquor contained in this small reservoir, made it very distinguishable, and differs much from the flesh of the animal. Aristotle and Pliny say, it is white; and it is indeed inclining to white, or between white and yellow. The little reservoir, in which it is contained, is not of equal bigness in all the *Buccina*; it is, however, commonly about a line, the twelfth part of an inch in breadth, and two or three in length.—It was this little reservoir the ancients were obliged to take from the *Buccinum*, in order to separate the liquor contained in it. They were under a necessity of cutting it from each fish, which was a tedious work, at least with regard to what it held: for there is not above a large drop of liquor in each reservoir. From whence it is not surprising that fine purple should be of so high a price amongst them.

Aristotle and Pliny say indeed, that they did not take the pains to cut these little vessels from the smaller fish of this kind separately, but only pounded them in mortars, which was a means to shorten the work considerably. Vitruvius seems even to give this as the general preparation. It is, however, not easy to conceive, how a fine purple colour could be attained by this means. The excrements of the animal must considerably change the purple colour, when heated together, after being put into the water. For that substance is itself of a brown, greenish colour, which, no doubt, it communicated to the water, and must very much have changed the purple colour; the quantity of it being exceedingly greater than that of the liquor.

In the preparation of purple, the cutting out the small reservoir of liquor from each *Buccinum*, was not the whole trouble. All those small vessels were afterwards thrown into a great quantity of water, which was set over a slow fire for the space of ten hours. As this mixture was left so long upon the fire, it was impossible for it not to take the
purple

Architect.
l. 7. c. 13.

purple colour: it took it much sooner, as I am well convinced, says Mr. Reaumur, by a great number of experiments. But it was necessary to separate the fleshy parts, or little vessels, wherein the liquor was contained; which could not be done without losing much of the liquor, but by making those fleshy membranes dissolve in hot water, to the top of which they rose at length in scum, which was taken off with great care.

This was one manner in which the antients made the purple dye; that was not intirely lost, as is believed, or at least, was discovered again about fifty years ago by the royal society of England. One species of the shells from which it is extracted, a kind of *Buccinum*, is common on the coast of that country. The observations of an Englishman upon this new discovery, were printed in the journals of France in 1686.

Another *Buccinum*, which gives also the purple dye, and is evidently one of those described by Pliny, is found upon the coast of Poitou. The greatest shells of this kind are from twelve to thirteen lines (of an inch) in length, and from seven to eight in diameter, in the thickest part of them. They are a single shell turned spirally, like that of a garden snail, but somewhat longer.

In the journal of the learned for 1686, the various changes of colour through which the *Buccinum's* liquor passes are described. If instead of taking out the vessel which contains it according to the method of the antients, in making their purple, that vessel be only opened, and the liquor pressed out of it, the linnen or other stuffs, either of silk or wool, that imbibe this liquor, will appear only of a yellowish colour. But the same linnen or stuffs, exposed to a moderate heat of the sun, such as it is in summer-mornings, in a few hours take very different colours. That yellow begins at first to incline a little to the green; thence it becomes of a lemon colour. To that succeeds a livelier green, which

which changes into a deep green; this terminates in a violet colour, and afterwards fixes in a very fine purple. Thus these linnens or stuffs, from their first yellow, proceed to a fine purple through all the various degrees of green. I pass over many very curious observations of Monsieur Reaumur's upon these changes, which do not immediately come into my subject.

It seems surprising, that Aristotle and Pliny, in speaking of the purple dye, and the shells or several countries from which it is extracted, should not say a word of the changes of colour, so worthy of remark, through which the dye passes before it attains the purple. Perhaps not having sufficiently examined these shells themselves, and being acquainted with them only from accounts little exact, they make no mention of changes which did not happen in the ordinary preparation of purple; for, in that, the liquor being mingled in cauldrons with a great quantity of water, it turned immediately red.

Mr. Reaumur, in the voyage he made in the year 1710, upon the coast of Poitou, in considering the shells called *Buccinum*, which the sea in its ebb had left upon the shore, he found a new species of purple dye, which he did not search after; and which, according to all appearances, had not been known to the antients, though of the same species with their own. He observed that the *Buccina* generally thronged about certain stones, and arched heaps of sand, in such great quantities, that they might be taken up there by handfuls, though dispersed and single every-where else. He perceived, at the same time, that those stones or heaps of sand were covered with certain grains, of which the form resembled that of a small oblong bowl. The length of these grains was somewhat more than three lines, (a quarter of an inch) and their bigness something above one line. They seemed to him to contain white liquor inclining to yellow. He pressed out the juice of some of them upon his ruffle, which

at first seemed only a little soiled with it; and he could perceive with difficulty, only a small yellowish speck here and there in the spot. The different objects, which diverted his attention, made him forget what he had done; and he thought no farther of it, till casting his eyes, by accident, upon the same ruffle, about a quarter of an hour after, he was struck with an agreeable surprize, to see a fine purple colour on the places where the grains had been squeezed. This adventure occasioned many experiments, which give a wonderful pleasure in the relation, and shew what great advantage it is to a nation to produce men of a peculiar genius, born with a taste and natural disposition for making happy discoveries in the works of nature.

Mr. Reaumur remarks, that the liquor was extracted from these grains, which he calls *the eggs of purple*, in an infinitely more commodious manner, than that practised by the antients for the liquor of the *Buccinum*. For there was nothing more to do, after having gathered these eggs, than to have them well washed in the sea-water, to take off as much as possible the filth which might change the purple colour by mixing with it; there was, I say, nothing more to do than to put them into clean cloths. The liquor was then pressed out, by twisting the ends of these cloths different ways, in the same manner almost that the juice is pressed out of gooseberries to make jelly. And to abridge this trouble still more, small presses might be used, which would immediately press out all the liquor. We have seen before, how much time and pains were necessary for extracting the liquor from the *Buccina*.

Plin. l. 22.
c. 2.

The *Coccus* or *Coccum* supplied the antients with the fine colour and dye we call scarlet, which in some measure disputed beauty and splendor with purple. Quintilian* joins them together; where

* Quid non adultus concupiscet, qui in purpuris repit? Nondum prima verba exprimit, & jam coccum intelligit, jam conchylium poscit. Quintil. l. 1. c. 1.

he complains, that the parents of his times dressed their children, from their cradles in scarlet and purple, and inspired them in that early age, with a taste for luxury and magnificence. Scarlet, according to * Pliny, supplied men with more splendid garments than purple, and at the same time more innocent, because it was not necessary to hazard life in attaining it.

Scarlet is generally belived the seed of a tree, of the holm-tree kind. It has been discovered to be a small round excrescence, red, and of the bigness of a pea, which grows upon the leaves of a little shrub, of the holm species, called *ilex aculeata cocciglandifera*. This excrescence is caused by the bite of an insect, which lays its eggs in it. The Arabians term this grain *Kermes*; the Latins, *Coccus* and *vermiculas*; from whence the words *vermilion*, and *Cuscum* or *quisquilium*, are derived. A great quantity of it is gathered in Provence and Languedoc. The water of the Gobelins's river is proper for dying scarlet.

There are two kinds of scarlet. The scarlet of France or of the Gobelins, which is made of the grain I have mentioned; and the scarlet of Holland, which derives itself from cochineal. This is a drug that comes from the East-Indies. Authors do not agree upon the nature of cochineal. Some believe it a kind of worm, and others that it is only the seed of a tree.

The first kind is seldom used since the discovery of cochineal, which produces a much more beautiful and lively scarlet than that of the *Kermes*, which is deeper, and comes nearer to the Roman purple. It has, however, one advantage of the cochineal-

* Transalpina Gallia herbis Tyrium atque conchylium tingit, omnesque alios colores. Nec querit in profundis murices—ut inveniat per quod matrona adultero placeat, corruptor insidietur nuptæ: Stans & in sicco carpit, quo fruges modo. *Plin.*

scarlet; which is, that it does not change colour when wet falls upon it, as the other does, that turns blackish immediately after.

S E C T. IX.

Of silken stuffs.

SILK, as Monsieur Mahudal observes in the dissertation * he has given us on this subject, of which I shall make great use in this place; silk, I say, is one of the things made use of for many ages almost through all Asia, in Africa, and many parts of Europe, without peoples knowing what it was; whether it was, that the people's amongst whom it grew, gave strangers little access to them; or that, jealous of an advantage peculiar to themselves, they apprehended being deprived of it by foreigners. It was undoubtedly from the difficulty of being informed of the origin of this precious thread so many singular opinions of the most antient authors took birth.

Herod. l.
3. c. 106.

To judge of the description Herodotus makes of a kind of wool much finer and more beautiful than the ordinary kind, and which, he says, was the growth of a tree in the Indies, (the most remote country known by the eastern people of his times to the eastward) that idea seems the first they had of silk. It was not extraordinary, that the people sent into that country to make discoveries, seeing only the bags of the silk-worms hanging from the trees in a climate, where those insects breed, feed upon the leaves, and naturally ascend the branches, should take those bags for lumps of wool.

It is likely, that Theophrattus, upon the relation of those mistaken persons, might conceive these

* *Memoirs of the academy of Inscriptions, Vol. V.*

a real species of trees, and rank them in a particular class, which he enumerates, of trees bearing wool. There is good reason to believe Virgil of the same opinion :

Velleraque ut foliis depectant tenuia Seres.

Georg. l. 2. v. 121.

As India's sons

Comb the soft slender fleeces of the bough.

Aristotle, though the most antient of the naturalists, has given a description of an insect that comes nearest the silk-worm. It is where he speaks of the different species of the caterpillar, that he describes one, which comes from an horned worm, to which he does not give the name of *Βόμβυξ*, till it has shut itself up in a cod or bag, from whence, he says, it comes out a butterfly; it passes through these several changes, according to him, in six months.

Arist. l. 5:
hist. anim.
c. 19.

About four hundred years after Aristotle, Pliny, to whom that philosopher's history of animals was perfectly known, has repeated the same fact literally in his own. He places also, under the name *Bombyx*, not only this species of worm, which, as some report produced the silk of Cos; but several other caterpillars found in the same island, that he supposes to form there the cods or bags, from which, he says, the women of the country spin silk, and make stuffs of great fineness and beauty.

Plin. l. 11:
c. 22, 23.

Pausanias, that wrote some years after Pliny, is the first who informs us, that this worm was of Indian extraction; and that the Greeks called it *Ζηρύς*, from whence it derived the name of *Seres*, the inhabitants of the Indies, amongst whom we are since convinced, this insect was first found.

Pausan. l.
6. p. 394.

The worm, which produces silk, is an insect still less wonderful, for the precious matter it supplies for the making of different stuffs, than for

the various forms it takes, either before or after its having wrapped itself up in the rich bag, or cod, it spins for itself. From the grain or egg it is at first, it becomes a worm of considerable size, and of a white colour inclining to yellow. When it is grown large, it incloses itself within its bag, where it takes the form of a kind of grey bean, in which there seems neither life nor motion. It comes to life again to take the form of a butterfly, after having made itself an opening through its tomb of silk. At last, dying in reality, it prepares itself, by the egg or seed it leaves, a new life, which the fine weather and the heat of the summer are to assist it to resume. In the first volume of the *Speſtacle de la Nature*, may be ſeen a more extenſive and more exact deſcription of theſe various changes.

It is from this bag or cod, into which the worm ſhuts itſelf, that the different kinds of ſilken manufactures are made, which ſerve not only for the luxury and magnificence of the rich, but the ſubſiſtance of the poor, who ſpin, wind, and work them. Each bag or cod is found to contain more than nine hundred feet of thread; and this thread is double, and glued together throughout its whole length, which in conſequence amounts to almoſt two thouſand feet. How wonderful it is, that out of a ſubſtance ſo flight and fine, as almoſt to eſcape the eye, ſtuſſis ſhould be compoſed of ſuch ſtrength, and duration, as thoſe made of ſilk! But what luſtre, beauty, and delicacy, are there in thoſe ſtuſſis! It is not ſurpriſing, that the commerce of the antients conſiſted conſiderably in them; and that, as they were very ſcarce in thoſe times, their price ran exceding high. Vopifcus * aſſures us, that the emperor Aurelian, for that reaſon, reſuſed

* Vellem holofericam neque ipſe in veſtuario ſuo habuit, neque alteri utendum dedit. Ec cuna ab eo uxor ſua peteret, ut unico pallio blattco Serico uteretur, ille reſpondit: *Atſit, ut auro ſil: penſetur.* Libra enim auri tunc libra Serici fuit. *Vopif. in Aurel.*

the empress his wife an habit of silk, which she earnestly solicited him to give her; and that he said to her: *The gods forbid that I should purchase silk at the price of its weight in gold*; for the price of a pound of silk was at that time a pound of gold.

It was not till very late, that the use of silk was known and became common in Europe. The historian Procopius dates the æra of it about the middle of the fifth century, under the the emperor Justinian. He gives the honour of this discovery to two monks, who, soon after their arrival at Constantinople from the Indies, heard, in conversation, that Justinian, was extremely solicitous about depriving the Persians, of their silk trade with the Romans. They found means to be presented to him, and proposed a shorter way to deprive the Persians of that trade, than that of a commerce with the Ethiopians, which he had thoughts of setting on foot; and this was, by teaching the Romans the art of making silks for themselves. The emperor, convinced by the account they gave him of the possibility of the means, sent them back to Serinda (the city's name where they had resided) to get the eggs of the insects, which they told him could not be brought alive. Those monks, after their second voyage, returning to Constantinople, hatched the eggs, they had brought from Serinda, in warm dung. When the worms came out of them, they fed them with white mulberry leaves, and demonstrated by the success of that experiment all the mechanism of silk in which the emperor had desired to be informed.

From that time the use of silk spread by degrees into several parts of Europe. Manufactures of it were set up at Athens, Thebes, and Corinth. It was not till about 1130, that Roger, king of Sicily, established one at Palermo. It was at that time, in this island and Calabria, workment in silk were first seen, who were part of the booty that prince brought from the cities of Greece I have

Procop.
l. 2. de
bell. Van-
dal.

mentioned, which he conquered in his expedition to the Holy Land. In fine, the rest of Italy and Spain having learnt of the Sicilians and Calabrians to breed the worms, and to spin and work their silk, the stuffs made of it began to be manufactured in France, especially in the south parts of that kingdom, where mulberry-trees were raised with most ease. Lewis XI, in 1470, established silken manufactures at Tours. The first workmen employed in them were brought from Genoa, Venice, Florence, and even from Greece. Works of silk were, however, so scarce even at court, that Henry II. was the first prince that wore silk stockings which he did at the nuptials of his sister.

They are now become very common, but do not cease to be one of the most astonishing wonders of nature. Have the most skilful artificers been able hitherto to imitate the curious work of the silkworm? Have they found the secret to form so fine, so strong, so even, so shining and so extended a thread? Have they a more valuable substance for the fabric of the richest stuffs? Do they know in what manner this worm converts the juice of a leaf into threads of gold? Can they give a reason why a matter, liquid before the air comes to it, should condense and extend to infinitude afterwards? Can we explain how this worm comes to have sense to form itself a retreat for the winter, within the innumerable folds of the silk, of which itself is the principal; and to expect, in that rich tomb, a kind of resurrection, which supplies it with the wings its first birth had not given it? These are the reflections made by the author of the new commentary upon Job, upon account of these words: *Quis * posuit in ventibus sapientiam? Who hath given Wisdom to certain animals, that have the industry to spin?*

* This, Mr. Rollin says in the margin, is the sense, according to the Hebrew of the 36th verse of the 38th chapter of Job: Which in the English version is only, Who hath put wisdom in the inward parts.

C O N C L U S I O N.

FROM what has been said hitherto, we may conclude commerce one of the parts of government, capable of contributing the most to the riches and plenty of a state: and therefore that it merits the particular attention of princes and their ministers. It does not appear indeed, that the Romans set any value upon it. Dazzled with the glory of arms, they would have believed it a disgrace to them to have applied their cares to the interest of trade, and in some measure to become merchants: they, who believed themselves intended by fate to govern mankind, and were solely intent upon the conquest of the universe. Neither does it seem possible, that the spirit of conquest and the spirit of commerce should not mutually exclude each other in the same nation. The one necessarily introduces tumult, disorder, and desolation, and carries trouble and confusion along with it into all places: the other, on the contrary, breathes nothing but peace and tranquillity. I shall not examine in this place, whether the aversion of the Romans for commerce were founded in reason; or if a people, solely devoted to war, are thereby the happier. I only say, that a king who truly loves his subjects, and endeavours to plant abundance in his dominions, will spare no pains to make traffic flourish and succeed in them without difficulty. It has been often said, and it is a maxim generally received, that commerce demands only liberty and protection: liberty within wise restrictions, in not tying down such as exercise it to the observance of inconvenient, burthenome, and frequently useles regulations; protection in granting them all the supports they have occasion for. We have seen the vast expences

flourish in Egypt; and how much glory the success of his measures acquired him. An intelligent and well-inclined prince will intermeddle only in commerce, to banish fraud and bad arts from it by severity, and will leave all the profits to his subjects, who have the trouble of it; well convinced, that he shall find sufficient advantages from it by the great riches it will bring into his dominions.

I am sensible that commerce has its inconveniencies and dangers. Gold, silver, diamonds, pearls, rich stuffs, in which it consists in a great measure, contribute to support an infinity of pernicious arts which tend only to enervate and corrupt a people's manners. It were to be desired, that the commerce might be removed from a Christian nation, which regards only such things as promote luxury, vanity, effeminacy, and idle expences. But this is impossible. As long as bad desires shall have dominion over mankind, all things, even the best, will be abused by them. The abuse merits condemnation, but is no reason for abolishing uses, which are not bad in their own nature. This maxim will have its weight with regard to all the sciences I shall treat of in the sequel of this work.

T H E
 H I S T O R Y
 O F T H E
 A R T S and S C I E N C E S
 O F T H E
 A N C I E N T S, &c.

I N T R O D U C T I O N.

*Of the liberal arts. Honours rendered those who
 excelled in them.*

WE come now to treat of the *arts* which are call *Liberal*, in opposition to such as are *Mechanic*, because the first are considered as the most noble and more immediately dependent upon the understanding. These arts are principally architecture, sculpture, painting, and music.

The arts as well as sciences have had their happy ages, in which they have appeared with greater splendor, and cast a stronger light: but, as the^{*} historian observes, this splendor, this light, was soon obscured, and the duration of these times of perfection of no great continuance. It was longer in

^{*} Hoc idem evenisse grammaticis, plasticis, pictoribus, sculptoribus, quisquis temporum notis inspicerit reperiet, & eminentia cuiusq; operis arctissimis temporum claustris circumdata. *Paterc.* l. 1.

Greece than in any other part of the world. To begin the reign of the liberal arts no higher than the time of Pericles, and make it endure only to the death of Alexander's first successors, (and each of these *Æras* may be extended both at their beginning and end,) the space will be at least two hundred years, during which appeared a multitude of persons illustrious for excelling in all the arts.

It is not to be doubted but rewards, honours, and emulation, contributed very much in forming these great men. What ardour must the laudable custom have excited, which prevailed in many cities of Greece, of exhibiting in the shews such as succeeded best in the arts of instituting public disputes between them, and of distributing prizes to the victors, in the sight and with the applauses of an whole people!

Greece, as we shall soon see, thought herself obliged to render as much honour to the celebrated Polygnotus, as she could have paid to Lycurgus and Solon; to prepare magnificent entries for him into the cities where he had finished some paintings; and to appoint, by a decree of the Amphitryons, that he should be maintained at the public expence in all the places to which he should go.

What honours have not the greatest princes paid in all ages to such as distinguished themselves by the arts! We have seen Alexander the Great, and Demetrius Poliorcetes, forget their rank to familiarize themselves with two illustrious painters, and come where they worked, to pay homage, in some manner, to the rare talents and superior merit of those extraordinary persons.

One of the greatest emperors that reigned in the West since Charlemagne, shewed the value he set upon painting when he made Titian Count Palatine, and honoured him with the golden key, and all the orders of knighthood.

*Car. R. R.
of the life of
Titian.*

Francis I, king of France, his illustrious rival as well in the actions of peace as those of war, outdid him much, when he said to the lords of his court of Leonardo da Vinci, then expiring in his arms: *You are in the wrong to wonder at the honour I pay this great painter; I can make a great many such Lords as you every day, but only God can make such a man as him I now lose.* *Vasari in the life of Leonardo da Vinci.*

Princes who speak and act in this manner, do themselves at least as much honour as those whose merit they extol and respect. * It is true, the arts, by the esteem kings profess for them, acquire a dignity and splendor that render them more illustrious and exalted: but the arts, in their turn, reflect a like lustre upon kings, and ennoble them also in some measure, in immortalizing their names and actions by works transmitted to the latest posterity.

Paterculus, whom I have already cited upon the short duration of arts when they have attained their perfection, makes another very true remark, confirmed not only by the experience of the remote, but later, ages; which is, † that great men in every kind, arts, sciences, policy, and war, are generally cotemporaries.

If we recal the times when Apelles, Praxiteles, Lyfippus, and other excellent artists flourished in Greece, we find her greatest poets, orators, and philosophers, were then alive. Socrates, Plato, Aristotle, Demosthenes, Isocrates, Thucydides, Xenophon, Æschylus, Euripides, Sophocles, Aristophanes, Menander, and many others, lived all of them almost in the same age. What men, what

* De pictura, arte quondam nobili, tunc cum expeteretur a regibus populisq; & illos nobilitante, quos dignata esset posteris tradere. *Plin. l. 35. c. 1.*

† Quis abunde mirari potest, quod eminentissima cujusq; professionis ingenia in eandem formam & in idem aetati temporis * congruant spatium. *Petere. l. 1. c. 16.*

* Sic Lipsius legit, pro *congruens.*

generals, had Greece at the same time? Had ever the world any so consummate?

The Augustan age had the same fate in every respect. In that of Lewis XIV, what a number of great men lived of every kind, whose names, actions, and works, will celebrate that glorious reign for ever?

It seems as if there were certain periods of time, in which I know not what spirit of perfection universally diffuses itself in the same country throughout all professions, without it being possible to assign how or why it should happen so. We may say, however that all arts and talents are allied in some manner to each other. The taste of perfection is the same in whatever depends upon genius. If cultivation be wanting, an infinity of talents lie buried. When true taste awakes, those talents deriving mutual aid from each other, shine out in a peculiar manner. The misfortune is, that this perfection itself, when arrived at its supreme degree, is the forerunner of the decline of arts and sciences, which are never nearer their ruin, than when they appear the most remote from it: Such are the instability and variation of all human things!



CHAPTER III.
OF ARCHITECTURE.

ARTICLE I.

Of Architecture in general.

SECT. I.

Rise, progress, and perfection of Architecture.

IT is not to be doubted but the care of building houses immediately succeeded that of cultivating lands, and that architecture is not of a much later date than agriculture. Hence Theodoret Theodor. orat. 4. de Provid. p. 359. calls the latter the eldest sister of architecture. The excessive heats of summer, the severity of winter, the inconvenience of rain, and the violence of wind, soon instructed mankind to seek for shelter, and provide themselves a retreat to defend them against the inclemencies of weather.

At first, these were only little huts, built very rudely with the branches of trees, and very indifferently covered. In the time of Vitruvius, they Vitr. l. 1. c. 1. shewed at Athens, as curious remains of antiquity, the roofs of the Areopagus, made of clay; and at Rome in the temple of the capitol, the cottage of Romulus, thatched with straw.

There were afterwards buildings of wood, which suggested the idea of columns and architraves. Those columns took their model from the trees which were used at first to support the roof, and the architrave is only the large beam, as its name implies,

implies, that was laid between the columns and the roof.

The workmen, in consequence of their application to building, became every day more industrious, and expert. Instead of those slight huts with which they contented themselves at first, they began to erect walls of stone and brick upon solid foundations, and to cover them with boards and tiles. In process of time, their reflections, founded upon experience, led them on to the knowledge of the just rules of proportion; the taste of which is natural to man, the author of his being having implanted in him the invariable principles of it, to make him sensible that he is born for order in all things. * Hence it is, as St. Austin observes; that in a building, where all the parts have a mutual relation to each other, and are ranged each in its proper place, the symmetry catches the eye, and occasions pleasure: whereas if the windows, for instance, are ill disposed, some large and others small, some placed higher and some lower, the irregularity offends the sight, and seems to do it a kind of injury, as St. Austin expresses it.

It was therefore by degrees, that architecture attained the height of perfection, to which the masters in the art have carried it. At first it confined itself to what was necessary to man in the uses of life; having nothing in view but solidity, healthfulness, and conveniency. An house should be durable; situated in an wholesome place, and have all the conveniencies that can be desired. Architecture afterwards laboured to adorn buildings, and make them more splendid, and for that reason called in other arts to its aid. At last came pomp, grandeur,

* Itaque in hoc ipso ædificio singula bene considerantes, non possumus non offendi, quod unum ostium videmus in latere, alterum prope in medio, nec tamen in medio collocatum. Quippe in rebus fabricatis, nulla cogente necessitate, iniqua dimensio partium facere ipsi adspectui velut quamdam videtur injuriam. *S. Augustin. de ord.* l. 2. c. 11. n. 34.

and magnificence, highly laudable on many occasions, but soon strangely abused by luxury.

The holy Scripture speaks of a city built by Cain, Gen. iv. 17. after God had cursed him for the murder of his brother Abel; which is the first mentioned of edifices in history. From thence we learn the time and place in which architecture had its origin. The descendants of Cain, to whom the same Scripture ascribes the invention of almost all the arts, carried this no doubt to a considerable height of perfection. And it is certain, that after the deluge, men, before they separated from each other, and dispersed themselves into the different regions of the world, resolved to signalize themselves by a superb building, which again drew down the wrath of God upon them. Asia therefore was the cradle of architecture, where it had its birth, where it attained a great degree of perfection, and from whence it spread into the other parts of the universe.

Babylon and Nineveh, the vastest and most magnificent cities mentioned in history, were built by Nimrod, Noah's great grandson, and the most ancient of conquerors. I do not believe, that they were carried at first to that prodigious magnificence, which was afterwards the astonishment of the world; but certainly they were very great and extensive from thenceforth, as the * names of several Gen. x. v. 11, 12. other cities, built in the same times after the model of the capital, testify.

The erection of the famous pyramids, of the lake Moeris, the labyrinth, of the considerable number of temples in Egypt, and of the obelisks which are to this day the admiration and ornament of Rome, shew with what ardour and success the Egyptians applied themselves to architecture.

It is however neither to Asia nor Egypt that this art is indebted for that degree of perfection, to

* Erech, *the long city*. Rehoboth, *the broad city*. Babel, *the great city*. *According to the Hebrews.*

which

which it attained; and there is reason to doubt whether the buildings, so much boasted by both, were as estimable for their justness and regularity, as their enormous magnitude; in which perhaps their principal merit consisted. The designs, which we have of the ruins of Persepolis, prove that the kings of Persia, of whose opulence ancient history says so much, had but indifferent artists in their pay.

However it be, it appears from the very names of the three principal orders of architecture, that the invention, if not perfection, of them is to be ascribed to Greece, and that it was she who prescribed the rules, and supplied the models of them. As much may be said with regard to all the other arts, and almost all the sciences. Not to speak in this place of the great captains, philosophers of every sect, poets, orators, geometricians, painters, sculptors, architects, and, in general, of all that relates to the understanding, which Greece produced: whither we must still go as to the school of good taste in every kind, if we desire to excel.

It is a misfortune that there is nothing written by the Greeks upon architecture now extant. The only books we have of theirs upon this subject, are the structures of those ancient masters still subsisting, whose beauty, universally acknowledged, has for almost two thousand years been the admiration of all good judges: works infinitely superior to all the precepts they could have left us; * practice in all things being infinitely preferable to theory.

For want of Greeks, Vitruvius, a Latin author, will come in to my assistance. His being architect to Julius and Augustus Cæsar (for according to the most received opinion he lived in their times) gives good reason to presume upon the excellency of his work, and the merit of the author. And the

* In omnibus serè minus valent præcepta, quam experimenta.
Quintil.

Critics accordingly place him in the first class of the great geniuses of antiquity. To this first motive may be added the character of the age in which he lived, when good taste prevailed universally, and the emperor Augustus piqued himself upon adorning Rome with buildings equal to the grandeur and majesty of the empire; which made him say, * that he found the city of brick, but left almost entirely of marble. I had great occasion for so excellent a guide as Vitruvius, in a subject entirely new to me, I shall make great use of the notes Mr. Perrault has annexed to his translation of this author, as well as of Mr. Chambrai's reflections in his work intitled, *Ancient and modern architecture compared*, which I know is in high esteem with the judges; and those of Mr. Felibian, in his book, called, *Of the principles of architecture*, &c.

The ancients, as well as we, had three sorts of architecture; the civil, the military, and the naval. The first lays down rules for all public and private buildings for the use of citizens in time of peace. The second treats of the fortification of places, and every thing of that kind relating to war: And the third the building of ships, and whatever is consequential of, or relates to it. I shall speak here only of the first; intending to say something elsewhere of the two others; and shall begin by giving a general idea of the several orders of building.

* Urbem, neque pro majestate imperii ornatam, & inundationibus incendiisque obnoxiam, excolunt adeo, ut jure sit gloriatum, maritimoream se relinquere, quam lateritiam accepisset. *Sueton. in Aug. c. 28.*

S E C T. II.

Of the three orders of architecture of the Greeks, and the two others, which have been added to them.

THE occasion there was for erecting different sorts of buildings made artists also establish different proportions, in order to have such as were proper for every kind of structure, according to the magnitude, strength, splendor and beauty, they were directed to give them: and from these different proportions they composed different orders.

Order, as a term of architecture, signifies the different ornaments, measures and proportions of the columns and pilasters, which support or adorn great buildings.

There are three orders of the architecture of the Greeks, the Doric, Ionic, and Corinthian. They may with reason be called the supreme perfection of the orders, as they contain not only all that is fine, but all that is necessary in the art; there being only three ways of building, the solid, the middle, and the delicate, which are all perfectly executed in these three orders.

To these the Latins have added two others, the Tuscan and Composite orders, which are far below the former in value and excellency.

I. *Doric Order.*

The Doric order may be said to have been the first regular idea of architecture, and as the eldest son of this art, had the honour to be also the first in building temples and palaces. The antiquity of its origin is almost immemorial: Vitruvius however ascribes it with probability enough to a prince of Achaia, named Dorus, the same evidently who gave his name to the Dorians, and being sovereign
of

of Peloponnesus, caused a magnificent temple to be erected in the city of Argos to the goddess Juno. That temple was the first model of this order; in imitation of which, the neighbouring people built several others: the most famous of these was that consecrated by the inhabitants of the city of Olympia to Jupiter, surnamed the Olympic.

The essential character and specific quality of the Doric order is solidity. For this reason it ought principally to be used in great edifices and magnificent structures, as in the gates of citadels and cities, the outsides of temples, in public halls, and the like places, where delicacy of ornaments seems less consistent: whereas the bold and gigantic manner of this order has a wonderful happy effect, and carries a certain manly and simple beauty, which forms properly what is called the grand manner.

II. *Ionic Order.*

After the appearance of these regular buildings, and famous Doric temples, architecture did not confine itself long to these first essays: the emulation of the neighbouring people soon enlarged and carried it to its perfection. The Ionians were the first rivals of the Dorians; and as they had not the honour of the invention, they endeavoured to refine upon the authors. Considering, therefore, that the form of a man, such for example as Hercules was, from which the Doric order had been formed, was too robust and heavy to agree with sacred mansions and the representation of heavenly things, they composed one after their own manner, and chose a model of a more delicate and elegant proportion, which was that of a woman, having more regard to the beauty than solidity of the work, to which they added abundance of ornaments.

Vitr. l. 4,
c. 1.

Amongst the celebrated temples built by the people of Ionia, the most memorable, though the most antient, is the famous temple of Diana at Ephesus, of which I shall soon speak.

III. Corinthian Order.

The Corinthian order, which is the highest degree of perfection architecture ever attained, was invented at Corinth. Though its antiquity be not exactly known, nor the precise time in which Callimachus lived, to whom Vitruvius gives the whole glory of it, we may judge, however, from the nobleness of its ornaments, that it was invented during the magnificence and splendor of Corinth, and soon after the Ionic, which it much resembles, except only in the capital or chapter. A kind of chance gave birth to it. Callimachus having seen, as he passed by a tomb, a basket, which some body had set upon a plant of Acanthus or bearsfoot, was struck with the accidental symmetry and happy effect produced by the leaves of the plant, growing through and incircling the basket; and though the basket with the Acanthus had no natural relation to the capital of a column and a massy building, he imitated the manner of it in the columns he afterwards made at Corinth, establishing and regulating by this model the proportions and ornaments of the Corinthian order.

This Callimachus was called by the Athenians *κατάτεχνος*, *expert and excellent in art*, from his delicacy and address in cutting marble: and according to Pliny and Pausanias, he was also called *κακίζοτεχνος*, because he was never contented with himself, and was always retouching his works, with which he was never entirely satisfied: full of superior ideas of the beautiful and the grand, he never found the execution sufficiently equal to them; *semper calumniator sui, nec finem habens diligentiae*, says Pliny.

IV. Tuscan

Vitr. l. 4.
c. 1.

Plin. l. 34.
c. 9.
Pausan.
l. 1. p. 48.

IV. *Tuscan Order.*

The Tuscan order, according to the general opinion, had its origin in Tuscany, of which it retains the name. Of all the orders it is the most simple, and has the fewest ornaments. It is even so gross, that it is seldom used except for some rustic building, wherein there is occasion only for a single order; or at best for some great edifice, as an amphitheatre, or other the like works.

In Mr. Chambrai's judgment the Tuscan column, without any architrave, is the only one that deserves to be used; and to confirm his opinion of this order, he cites an example of it from Trajan's pillar, one of the most superb remains of the Roman magnificence now in being, and which has more immortalized that emperor, than all the pens of historians could have done. This mausolæum, if it may be called so, was erected to him by the senate and people of Rome, in acknowledgment of the great services he had done to his country. And that the memory of them might subsist throughout all ages, and endure as long as the empire, they caused them to be engraven in marble, and in the richest stile that ever was conceived. Architecture was the writer of this ingenious kind of history: and because she was to record a Roman, she did not make use of the Greek orders, though incomparably more perfect, and more used even in Italy than the two others of their own growth; lest the glory of that admirable monument should in some measure be divided, and to shew at the same time, that there is nothing so simple to which art cannot add perfection. She chose therefore the column of the Tuscan order, which till then had been only used in gross and rustic things, and made their rude mass bring forth the choicest and most noble master-piece of art in the world, which time has spared and preserved

erved entire down to us, amidst the infinity of ruins, with which Rome abounds. And indeed it is a kind of wonder to see that the Colisæum, the theatre of Marcellus, the great Circus, the baths of Dioclesian, Caracalla, and Antoninus, the superb mole of Adrian's burying-place, the Septizonum of Severus, the Mausolæum of Augustus, and so many other structures, which seemed to be built for eternity, are now so defaced and ruinous, that their original form can scarce be discerned, whilst Trajan's pillar, of which the structure seems far less durable, still subsists entire in all its parts.

V. *Composite Order.*

The Composite order was added to the others by the Romans. It participates and is composed of the Ionic and Corinthian, which occasioned its being called the Composite: but it has still more ornaments than the Corinthian. Vitruvius, the father of the architects, says nothing of it.

Mr. Chambrai objects strongly against the bad taste of the modern Compositors, who, amidst so many examples of the incomparable architecture of the Greeks, which alone merits that name, abandoning the guidance of those great masters, take a quite different route, and blindly give into that bad taste of art, which has by their means crept into the orders under the name of Composite.

Gothic architecture.

That which is remote from the antient proportions, and is loaded with chimerical ornaments, is called the Gothic architecture, and was brought by the Goths from the north.

There are two species of Gothic architecture; the one antient, the other modern. The antient is that which the Goths brought from the north in
the

the fifth century. The edifices built in the antient Gothic manner were massy, heavy, and gross. The works of the modern Gothic stile were more delicate, easy, light, and of an astonishing boldness of workmanship. It was long in use, especially in Italy. It is surprizing, that Italy, abounding with monuments of so exquisite a taste, should quit its own noble architecture, established by antiquity, success, and possession, to adopt a barbarous, foreign, confused, irregular, and hideous manner. But it has made amends for that fault, by being the first to return to the antient taste, which is now solely and universally practised. The modern Gothic continued from the thirteenth century till the re-establishment of the antient architecture in the fourteenth. All the antient cathedrals are of Gothic architecture. There are some very antient churches built entirely in the Gothic taste, that want neither solidity nor beauty, and which are still admired by the greatest architects, upon account of some general proportions remarkable in them.

A plate of the five orders of architecture, of which I have spoken, will enable youth, whom I have always in view, to form some idea of them. I shall prefix to it an explanation of the terms of art, which Mr. Camus, fellow of the academy of sciences, and professor and secretary of the academy of architecture, was pleased to draw up expressly for my work. At my request he abridged it very much, which makes it less compleat than it might otherwise have been.

S E C T. III.

Explanation of the terms of art, relating to the five orders of architecture.

AMongst the Greeks, an order was composed of columns and an entablature. The Romans added pedestals under the columns of most orders to increase their height.

The **COLUMN** is a round pillar, made either to support or adorn a building.

Every column, except the Doric, to which the Romans give no base, is composed of a base, a shaft, and a capital or chapter.

The **BASE** is that part of the column, which is beneath the shaft, and upon the pedestal, when there is any. It has a plinth, of a flat and square form like a brick, called in Greek *πλαθῆ* and mouldings, that represent rings, with which the bottoms of pillars were bound, to prevent their cleaving. These rings, when large, are called *Tori*, and, when small, *Astragals*. The *Tori* generally have hollow spaces cut round between them, called *Rundels*, *Scotia* or *Trochylus*.

The **SHAFT** of the column is the round and even part extending from the base to the capital. This part of the column is narrower at top than at bottom. Some architects are for giving the column a greater breadth at the third part of their height, than at the bottom of their shaft. But there is no instance of any such practice amongst the antients. Others make the shaft of the same size from the bottom to the third, and then lessen it from the third to the top. And some are of opinion, that it should begin to lessen from the bottom.

The **CAPITAL** is that upper part of the column which is placed immediately upon the shaft.

The **ENTABLATURE** is the part of the order
above

above the columns, and contains the architrave, the frieze, and the cornish.

The *Architrave* represents a beam, and lies next immediately to the capitals of the columns. The Greeks call it *Epistyle*, Ἐπιστυλιον.

The *Frieze* is the space between the architrave and the cornish. It represents the cieling of the building.

The *Cornish* is the beginning of the whole order. It is composed of several mouldings, which projecting over one another, serve to shelter the order from the waters of the roof.

The *Pedestal* is the lowest part of the order. It is a square body, containing three parts: The *foot*, which stands on the area or pavement; the *die*, that lies upon the foot; and the *wave* (cymatium) which is the cornish of the pedestal, upon which the column is placed.

Architects do not agree among themselves about the proportion of the columns to the entablature and pedestals. In following that of Vignola, when an order with pedestals is to be made to an height given, the height must be divided into nineteen equal parts, of which the column, with its base and capital, is to have twelve, the entablature three, and the pedestal four. But if the order is to have no pedestal, the height given must be divided into fifteen parts only, of which the column is to have twelve, and the entablature three.

It is by the diameter of the bottom of the shaft of the columns that all the parts of the orders are regulated. But this diameter has not the same proportion with the height of the column in all the orders.

The semidiameter of the bottom of the shaft is called *module* or *model*. This model serves as a scale to measure the smaller parts of the orders. Many architects divide it into thirty parts, so that the whole diameter contains sixty, which may be called *minutes*.

OF ARCHITECTURE.

The difference between the relation of the heights of columns to their diameters, and between their bases, capitals, and entablatures, forms the difference between the five orders of architecture. But they are principally to be distinguished by the capitals; except the Tuscan, which might be confounded with the Doric, if only their capitals were considered.

The Doric and Ionic pillars have in their capitals only mouldings in the form of rings with a flat square stone over them, called *Plinth* or *Abacus*. But the Doric is easily distinguished from the Tuscan order; the frieze is plain, and in the Doric adorned with *Triglyphs*, which are long, square rustics, not unlike the ends of several beams which project over the architrave to form a roof or ceiling. This ornament is affected by the Doric order, and is not to be found in the others.

The Ionic capital is easily distinguished by its volutes, ears, or spiral rolls, projecting underneath the plinth or abacus.

The Corinthian capital is adorned with two rows of eight leaves each, and with eight small volutes, which project between the leaves.

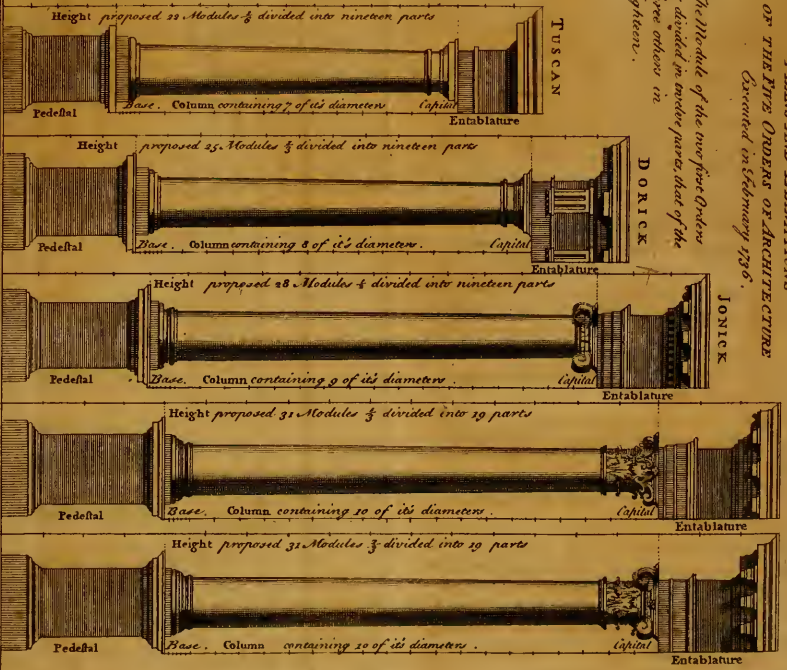
And lastly, the Composite capital is compounded from the Corinthian and Ionic capitals. It has two rows of eight leaves, and four great volutes, which seem to project under the abacus.

To relate at large all the particularities affected by the different orders, it would be necessary to expatiate upon particulars much more than is consistent with the plan of my work.

Mr. Buache, Fellow of the academy of sciences, has given himself the trouble to trace the plan of the five orders of architecture in the plate annexed.

PLANS AND ELEVATIONS
OF THE FIVE ORDERS OF ARCHITECTURE
Executed in February 1786.

The Module of the five first Orders is divided in twelve parts, that of the three others in eighteen.



These Five Orders of Columns or Pillars, used in Civil Architecture after the Greeks and Romans, who invented them, are executed according to the System of the Quadrats upon the same Scale of Modules, & excepted by the Proportions of J. Andron, which seem to Buildings of the King of France, & other Builders compared & erected by different Modern Architects, & last of all by M. de Mazarin.

ARTICLE II.

Of the architects and buildings most celebrated by the antients.

I Can only touch very lightly upon this subject, which would require whole volumes to treat it in its extent; and shall make choice of what seems most proper to inform the reader, and satisfy his just curiosity, without excluding what the Roman history may supply, as I have before observed.

The Holy Scripture, in speaking of the building of the tabernacle, and afterwards of the temple of Jerusalem that succeeded it, tells us one circumstance highly to the honour of architecture, which is, that God vouchsafed to be the first architect of those two great works, and traced the plans of them himself with his own divine hand, which he afterwards gave to Moses and David, to be the models for the workmen employed in them. This was not all. That the execution might fully answer his designs, *he filled Bezaleel with the Spirit of God,* Exod. xxv. 8, 9. 1 Chron. xxviii. 19. whom he had appointed to preside in building the tabernacle; that is to say, in the express words of the Scripture, *he had filled him with the Spirit of God in wisdom, and in understanding, and in knowledge, and in all manner of workmanship. To devise cunning works, to work in gold, and in silver, and in brass. And in cutting of stones to set them, and in carving of timber, to work in all manner of workmanship. And he joined Aholiab with him, whom he had filled with wisdom as well as all the other Artisans, that they may make all that I have commanded thee.* It is said in like manner, that Hiram, who was employed by Solomon in building the temple, *was filled with wisdom, and understanding, and cunning, to work in* 1 Kings, vii. 14.
all

all works of brass. The words I have now quoted especially those from Exodus, shew that the knowledge, skill, and industry of the most excellent workmen are not their own, but the gift of God, which they seldom know the origin, and make the use they ought. We must not expect to find simplicity of sentiments amongst the Pagans, of whom we have to speak.

I shall pass over in silence the famous building of Babylonia and Egypt, that I have mentioned more than once elsewhere, and in which brick was used with so much success. I shall only insert here a remark from Vitruvius, that has some relation to them.

Vitruv.
l. 2, c. 8.

This excellent architect observes, that the ancients in their buildings made most use of brick because brick-work is far more durable than that of stone. Hence there were many cities, in which both the public and private buildings, and even the royal palaces, were only of brick. Among many other examples, he cites that of Mausolus king of Caria. In the city of Halicarnassus, says he, the palace of the potent king Mausolus is walled with brick, though universally adorned with the marble of Proconnesus; and those walls are * still very fine and entire, cased over with a plaister as smooth as glass. It cannot however be said, that this king could not build walls of more costly materials, who was so powerful, and at the same time had so great a taste for fine architecture, as the superb buildings, with which he adorned his capital, sufficiently prove.

* *Vitruvius lived 350 years after Mausolus.*

I. *Temple of Ephesus.*

The temple of Diana, of Ephesus, was deemed one of the seven wonders* of the world.

Ctesiphon or Chersiphron (for authors differ in the name) made himself very famous by building this temple. He traced the plans of it, which were partly executed under his own direction, and that of his son Metagenes; and the rest by other architects, who worked upon it after them, for the space of two hundred and twenty years, which that superb edifice took up in building. Ctesiphon worked before the LXth olympiad. Vitruvius A. M. 34⁶⁴.
Plin. l. 36.
c. 14.
Vitr. l. 3.
c. 1.

says, that the form of this temple is *dipteric*, that is to say, that it was surrounded with two rows of columns in form of a double portico. It was almost one hundred and forty two yards in length, and seventy two in breadth. * In this edifice there were one hundred and twenty seven columns of marble sixty feet high, given by as many kings. Thirty six of these columns were carved by the most excellent artists of their times. Scopas, one of the most celebrated sculptors of Greece, finished one of them, which was the finest ornament of this magnificent structure. All Asia had contributed with incredible ardour to the erecting and adorning it.

Vitruvius relates the manner of getting the marble for this pile. Though the account seems a little fabulous, I shall, however, repeat it. A shepherd, named Pyxodorus, often drove his sheep to feed in the country about Ephesus, at the time when the Ephesians proposed to bring the marble that was necessary for building the temple of Diana, from Paros, Proconnesus, and other places. One day, whilst he was with his flock, it happened, two

* See plate and further description of this temple, as the sixth species of the temples of the ancients, a little lower.

rams that were fighting missed each other in their career, and one of them hit his horn so violently against a rock, that he struck off a piece of it which seemed so exquisitely white to the shepherd that immediately leaving his flock upon the mountain, he ran with that splinter to Ephesus, at that time in great difficulty about the importation of marble. Great honours were instantly decreed him. His name Pyxodorus was changed into Evangelus, which signifies *the messenger of good news*; and to this day, adds Vitruvius, the magistrate of the city goes every month to sacrifice upon the spot; and in case he fails to do so, is subject to a severe penalty.

Vitr. l. 10.
c. 6. It was not sufficient to have found marble; it was necessary to remove it into the temple, after being worked upon the spot, which could not be executed without difficulty and danger. Ctesiphon invented a machine, which very much facilitated the carriage of it. His son Metagenes invented another for carrying the architraves. Vitruvius has left us the description of both these machines.



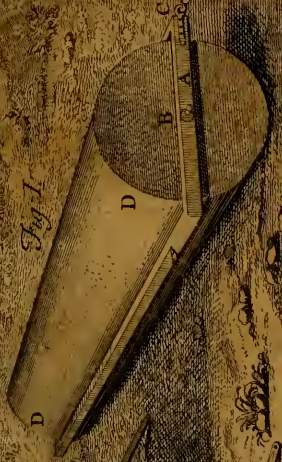
Fig. III.



Fig. II.



Fig. I.



Machines of Ceyphion, Helvænes and Lucænes

by means of great wheels

S. Bayre fculp.

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PLATE II. explained.

*The machines of Ctesiphon, Metagenes, and Paconius,
for removing great stones.*

C TESIPHON observing that the ways Vitr. l. 10. c. 6. were not firm enough to bear the weight of vast columns, from the quarry to Ephesus, upon carriages, and that the wheels would sink into the ground, and frustrate the endeavour of removing them in that manner, he contrived a frame, as in *Fig. 1.* of four pieces of wood, four inches square; two of them, something more than the length of the column AA, crossed at the ends by the other two, something more than its diameter.

At each end of the column, in the center, he affixed a large iron pin, barbed at the ends within the stone, and well sealed with lead; these came through iron rings in the cross pieces of the frame, B.

To each corner of the frame, on the side the machine was to be drawn, poles of oak were joined, by iron hooks to strong iron rings, C.

When the oxen drew at these poles, the columns DD turned round in the manner of a rolling-stone, and were drawn with no great difficulty to Ephesus; eight thousand paces. These pillars were only rough hewn at the quarry.

Fig. 2. Upon the model of the former machine, Metagenes, the son of Ctesiphon, contrived another for the carriage of architraves. He made strong and broad wheels, of about twelve feet in diameter DD, in the middle of which he fixed the architraves EE with large iron pins in the center, at each end of them, F. The pins came through a ring of iron in a frame, like that of *Fig. 1.* to which poles for the beasts to draw by were affixed in the same manner $\Phi\Phi$.

Fig.

Fig. 3. In the time of Vitruvius, Paconius undertook to bring from the mines the base, for a vast statue of Apollo, of twelve feet high, eight broad and six thick. His machine, though not unlike that of Metagenes, was of a different make. It consisted of two strong wheels of fifteen feet high *HH*. Into these he fixed the ends of the stone *G*. Through the whole circumference of both these wheels, at only a foot's distance from each other he drove round spokes two inches thick, *II*. Round these spokes the cable *K* was wound, which, when drawn by the oxen, set the machine a moving; but Vitruvius says, that the cable never drawn from any fixed or central point, the engine continually turned either to the right or left, in such a manner, that it could not be made to perform what it was designed for. Mr. Perrault expresses his surprize at this, as, says he, by adding only another cable, to draw equally on each side at the same time, it might have been made a better machine than that of Metagenes. He adds, that it was strange a man could have sense enough to invent such an engine; and not know so easy an expedient to rectify its operations.]

In præf.
l. 7.

The same Vitruvius informs us, that Demetrius, whom he calls the servant of Diana, *servus Dianæ*, and Pæonius, the Ephesian, finished the building of this temple, which was of the Ionic order. He does not precisely mark the time when these two architects lived.

The frantic extravagance of a private man destroyed in one day the work of two hundred years. Every body knows that Herostratus, to immortalize his name, set fire to this famous temple, and consumed it to ashes. This happened on the day that Alexander the Great was born; which suggests the frigid conceit to an historian; that Diana was

so busy at the labour of Olympia, that she could not spare time to preserve her temple.

The same Alexander, who was insatiably fond of every kind of glory, offered afterwards to supply the Ephesians with all the expences necessary for the rebuilding of their temple, provided they would consent; that he should have the sole honour of it, and that no other name should be added to his in the inscription upon it. The Ephesians did not approve this condition: but they covered their refusal with a flattery, with which that prince seemed satisfied, in answering him, *That it was not consistent for one god to erect a monument to another.* The temple was rebuilt with still greater magnificence than the first.

2. Buildings erected at Athens, especially under Pericles.

I should never have done, if I undertook to describe all the famous buildings with which the city of Athens was adorned. I shall place the Piræum at the head of the rest, because that port contributed most to the grandeur and power of Athens. Before Themistocles, it was a simple hamlet, the Athenians, at that time, having no port but Phalerus, which was very small and incommodious. Themistocles, whose design was to make the whole force of Athens maritime, rightly observed, that, to accomplish a design truly worthy of so great a man, it was necessary to provide a secure retreat for a very considerable number of ships. He cast his eyes upon the Piræum, which, by its natural situation, afforded three different ports within the same inclosure. He immediately caused it to be worked upon with the utmost dispatch, took care to fortify it well, and soon put it into a condition to receive numerous fleets. This port was about two leagues (forty stadia) from the city; an advantageous

Cor. Nep.
in Themist. c. 6.
Plut. in Themist.
p. 121.
Thucyd.
c. 1. p. 62.
Paulan. l.
1. p. 1.
&c.

vantageous situation, as Plutarch observes, for removing from the city the licentiousness which generally prevails in ports. The city might be supported by the Piræum, and the Piræum by the city, without prejudice to the good order it was necessary to observe in the city. Pausanias mentions a great number of temples, which adorned this part of Athens, that in a manner formed a second city distinct from the first.

Cic. l. 1. r.
de orat.
n. 62.

Pericles joined these two parts by the famous wall, that extended two leagues, and was the beauty and security of both the Piræum and the city: it was called *the long wall*. Demetrius Phaleræus, whilst he governed Athens, applied himself particularly in fortifying and embellishing the Piræum. The arsenal, built at that time, was looked upon as one of the finest pieces of work Greece ever had. Demetrius gave the direction of it to Philo, one of the most famous architects of his time. He discharged that commission with all the success which could be expected from a man of his reputation.

Vitr. l. 7.
in præfat.

* When he gave an account of his conduct in the public assembly, he expressed himself with so much elegance, perspicuity, and precision, that the people of Athens, excellent judges in point of eloquence, conceived him as fine an orator as he was an architect, and admired no less his talent for speaking than his ability for building. The same philosopher was charged with the alterations it was thought proper to make in the magnificent temple of Ceres and Proserpine at Eleusis, of which I shall soon speak.

Plut. in
Pericl.
p. 158.

To return to Pericles, it was under his equally long and glorious government, that Athens, in

* Gloriantur Athenæ armamentario suo, nec sine causa: est enim illud opus & impensa & elegantia visendum. Cujus architecturæ Philonem ita facundè rationem institutionis suæ in theatro reddidisse constat, ut disertissimus populus non minorem laudem eloquentiæ ejus, quam arti tribuerit. *Val. Max. l. 8. c. 12.*

riched with temples, porticoes, and statues, became the admiration of all the neighbouring states, and rendered herself almost as illustrious by the magnificence of her buildings, as she was for the glory of her military exploits. Pericles, finding her the depositary and dispenser of the public treasures of Greece, that is to say, of the contributions paid by the several states, for the support of troops and fleets, believed, after having sufficiently provided for the security of the country, that he could not employ the sums that remained to better purpose, than to adorn and improve a city, that was the honour and great defence of all the rest.

I do not examine here whether he were in the right or not; for this conduct was imputed to him as a crime; nor whether this use of the public money was conformable to the intention of those who supplied it: I have said elsewhere what we ought to think of it; and content myself with observing, that a single man inspired the Athenians with a taste for all the arts; that he set all the able hands to work, and raised so lively an emulation amongst the most excellent workmen in every kind, that, solely intent upon immortalizing their names, they used their utmost endeavours, in all the works committed to their care, to surmount each other, and surpass the magnificence of the design by the beauty and spirit of the execution. One would have believed, that there was not one of those buildings but must have required a great number of years, and a long succession of men, to compleat: and yet, to the astonishment of every body, they had been all carried to so supreme a degree of perfection during the government of one man; and that too in no considerable number of years, considering the difficulty and excellency of workmanship.

Another consideration, which I have already touched upon elsewhere, still infinitely exalts their

value: I only copy Plutarch in this place, and should be very glad if I could come near the energy and vivacity of his expressions. Facility and expedition do not generally communicate solid and lasting graces, nor perfect beauty to works: but time, united with labour, pays delay with usury, and gives the same works a force capable of preserving, and of making them triumph, through all ages. This renders the works of Pericles the more admirable, which were finished in so short a time, and yet had so long a duration. For, from the moment they came from the workman's hands, they had the beauty and spirit of antiques; and even now, says Plutarch, that is to say, about six hundred years after, they have the freshness of youth, as if but lately finished; so much do they still retain a bloom of grace and novelty, that prevents time itself from diminishing their beauty, as if they possessed within themselves a principle of immortal youth, and an animating spirit incapable of growing old.

Plutarch afterwards mentions several temples and superb edifices, in which the most excellent artists had been employed. Pericles had chosen Phidias to preside in erecting these structures. He was the most famous architect, and, at the same time, the most excellent sculptor and statuary of his times. I shall speak of him presently, when I come to treat of the article of sculpture.

3. *The Mausoleum.*

The superb monument which Artemisia erected for her husband Mausolus, king of Caria, was one of the most famous buildings of antiquity, as it was thought worthy of being ranked amongst the seven wonders of the world. I shall cite, in the following article upon sculpture, what Pliny says of it.

4. *City and light-house of Alexandria.*

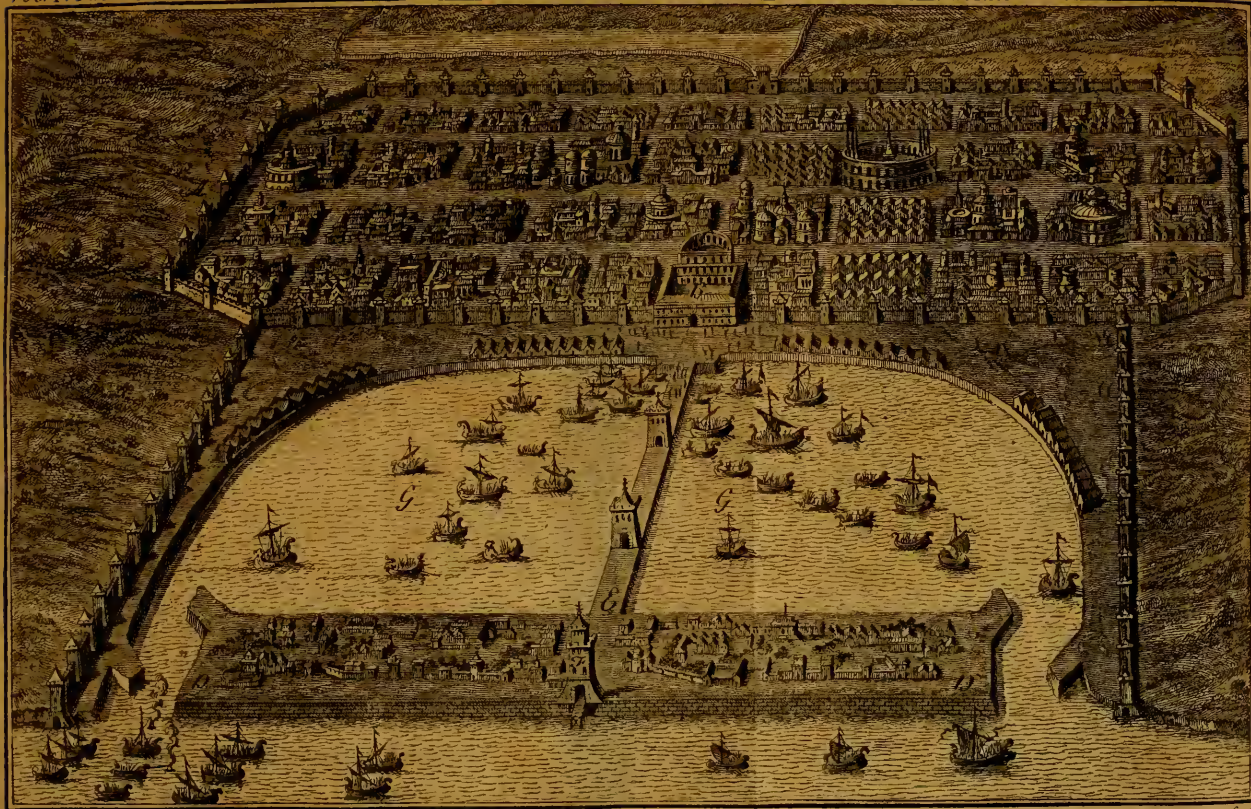
It is natural to expect, that whatever derives itself from Alexander, must have something great, noble, and majestic in it; which are the characters of the city he caused to be built, and called after his name in Egypt. He charged Dinocrates with the direction of this important undertaking. The history of that architect is very singular.

He was a Macedonian. Confiding in his genius Vitr. in præfat. l. 2. and great ideas, he set out for the army of Alexander, with design to make himself known to that prince, and to propose views to him as he conceived would suit his taste. He got letters of recommendation from his relations and friends to the great officers and leading men at the court, in order to obtain a more easy access to the king. He was very well received by those to whom he applied, who promised to introduce him as soon as possible to Alexander. As they deferred doing it from day to day, under pretence of wanting a favourable opportunity, he took their delays to imply evasion, and resolved to present himself. His stature was advantageous, his visage agreeable, and his address spoke a person of condition. Relying therefore upon his good mien, he stripped himself of his usual habit, anointed his whole body with oil, crowned himself with a wreath of poplar, and throwing a lion's skin over his shoulders, took a club in his hand, and in that equipage approached the throne, upon which the king sat dispensing justice. The novelty of his sight having opened his way through the crowd, he was perceived by Alexander, who, surpris'd at his appearance, ordered him to approach, and asked him who he was. He replied, "I am Dinocrates the Macedonian, an architect, who bring thoughts and designs to

“ Alexander worthy his greatness.” The king gave him the hearing. He told him, that he had formed a design of cutting mount Athos into the form of a man, that should hold a great city in his left hand, and in his right a cup to receive all the rivers, which ran from that mountain, and to pour them into the sea. Alexander, relishing this gigantic design, asked him whether there were lands enough about this city to supply corn for its subsistence? And having been answered, that it would be necessary to bring that by sea, he told him that he applauded the boldness of his design, but could not approve the choice of the place he had pitched upon for the execution of it. He however retained him near his person, adding, that he would employ his ability in other undertakings.

Alexander accordingly, in the voyage he made into Egypt, having discovered a port there, that was very well sheltered and of easy access, surrounded by a fertile country, and abounding with conveniencies on account of its neighbourhood to the Nile, he commanded Dinocrates to build a city adjoining to it, which was called Alexandria after his name. The architect's skill and the prince's magnificence vied with each other in embellishing it, and seemed to exceed themselves in order to render it one of the greatest and most superb cities of the world. It was inclosed within a vast extent of walls, and fortified with towers. I had a port, aqueducts, fountains, and canals of great beauty; an almost infinite number of houses for the inhabitants, squares, lofty edifices, public places for the celebration of games and shews; in a word, temples and palaces so spacious, and in so great a number, that they took up almost the third part of the whole city. I have observed elsewhere in what manner Alexandria became the center of the commerce of the east and west.

Strab. l. 17.
p. 791, &c.



A View of the City & Port of Alexandria & Isle of Pharos. W. R. Jones sculp
A, The City B, The Kings Palace C, The Theatre adjoining to it D, the Island of Pharos E, The narrow way that
joyns it to the Town F, The light house G, The Port.
Published Feb. 1754. by J. & P. Knapton

A considerable structure, afterwards erected in the neighbourhood of this city, still rendered it more famous; I mean the light-house of the island of Pharos, Sea-ports were usually fortified with towers, as well for their defence, as to guide those who sailed in the night, by the means of fires kindled upon them. These towers were at first of a very simple species: but Ptolomæus Philadelphus caused one so great and magnificent to be erected in the island of Pharos, that some have ranked it amongst the wonders of the world: it cost eight hundred talents, that is to say, one million eight hundred thousand livres.

The isle of Pharos was about seven stadia, or something more than a quarter of a league, from the continent. It had a pomontory or rock against which the waves of the sea broke. It was upon this rock Ptolomæus Philadelphus built the tower of Pharos of white stone, of surprising magnificence, with several arched stories not unlike the tower of Babylon, which had eight such stories. He gave the direction of this work to a celebrated architect called Sostratus, who cut this inscription upon the tower: *Sostratus of Cnidos, son of Dexiphanes, to the gods preservers, in favour of those who go by sea.* In the history of Philadelphus, the reader may see what has been said upon this inscription.

An author, who lived about six hundred years ago, speaks of the tower of Pharos, as of an edifice subsisting in his time. The height of the tower, according to him, was three hundred cubits, that is to say, four hundred and fifty feet, or an hundred and fifty yards. A manuscript scholiast upon Lucian, cited by Isaac Vossius, affirms, that for its size it might be compared with the pyramids of Egypt; that it was square, that its sides were almost a stadium, near two hundred and eight yards; that its top might be descried an hundred miles, or about thirty or forty leagues.

Strab. ibid.
Plin. l. 36.
c. 12.

The Nubi-
an Geogra-
pher.

It. Voss.
ad Pomp.
Mel.
p. 205.

Tzetzes
Chil. 2.
hist. 33.

This tower soon took the name of the island, and was called Pharos; which name was afterwards given to other towers erected for the same use. The isle on which it was built became a peninsula in process of time. Queen Cleopatra joined it to the main land by a mole, and a bridge from the mole to the island: a considerable work, in which Dexiphanes, a native of the isle of Cyprus, presided. She gave him by way of reward a considerable office in her court, and the direction of all the buildings she afterwards caused to be erected.

Vitr. 1. 10.
§. 33.

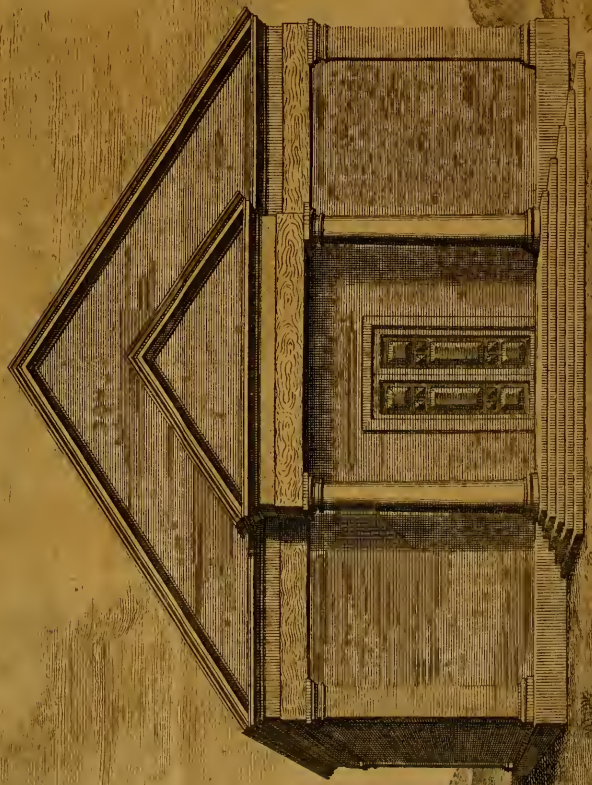
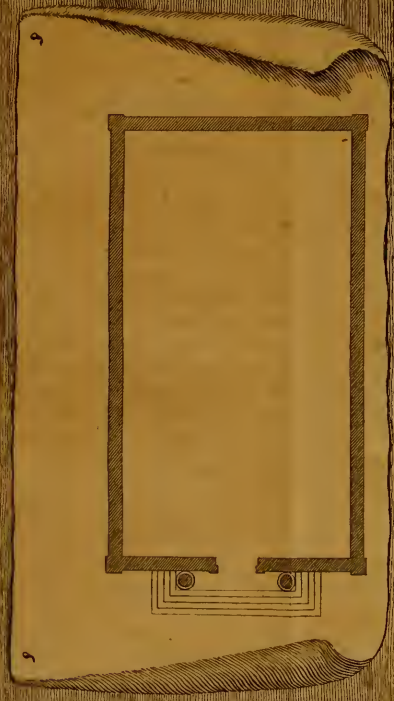
We find from more than one example, that expert architects were very much honoured and esteemed amongst the ancients. The inhabitants of Rhodes had settled a considerable pension upon Diognetus, one of their citizens, to reward him for the machines of war which he had made for them. It happened that a foreign architect, who called himself Callias, had made a model in little, of a machine capable, as he pretended, of lifting and removing any weight whatsoever, and thereby excelling all other machines. Diognetus, judging the thing absolutely impossible, was not ashamed to confess that it surpassed his skill. The pension of the latter was transferred to Callias, as far the more expert artist. When Demetrius Poliorcetes was preparing to make his terrible *Helepolis* approach the walls of Rhodes, which he besieged, the inhabitants called upon Callias to make use of his machine. He declared it to be too weak to remove so great a weight. The Rhodians then perceived the enormous fault they had committed, in treating a citizen to whom they had such great obligations with so much ingratitude. They beseeched Diognetus in the most earnest manner to assist his country, exposed to the utmost danger. He refused at first, and remained for some time inflexible to their intreaties. But when he saw the priests, and the most noble children
of

of the city, bathed in their tears, come to implore his aid, he complied at last, and could not withstand so moving a spectacle. The question was to prevent the enemy's approaching their formidable machine to the wall. He effected it without much difficulty, having laid the land under water, over which the Helepolis was to pass, which rendered it absolutely useless, and obliged Demetrius to raise the siege, by an accommodation with the Rhodians. Diognetus was loaded with honours, and double his former pension settled upon him.

5. *The four principal temples of Greece.*

Vitruvius says, that there were amongst others Vitruv. in præf. l. 7. four temples in Greece, entirely built of marble, and adorned with such exquisite ornaments, that they were the admiration of all good judges, and became the rule and model of buildings in the three orders of architecture. The first of these structures is the temple of Diana at Ephesus. The second that of Apollo in the city of Miletus: Both these were of the Ionic order. The third is the temple of Ceres and Proserpine at Eleusis, which Ictinus Her. l. 3. c. 65. Strab. l. 9. p. 395. built in the Doric order, of extraordinary dimensions, capable of containing thirty thousand persons: for there were as many, and often more, at the celebrated procession of the feast of Eleusis. This temple at first had no columns without, in order to leave the more room for the sacrifices. But Philo afterwards, when Demetrius Phalereus governed Athens, placed some pillars in the front, to render the edifice more majestic. The fourth is the temple of Jupiter Olympius at Athens, of the Corinthian order. Pisistratus had begun it, but Vitr. ibid. it remained unfinished after his death, upon account of the troubles in which the republic was involved. More than three hundred years after, Antiochus Epiphanes,

Liv. l. 41. n. 20. Epiphanes, king of Syria, took upon him to defray the expences that were necessary for finishing the body of the temple, which was very large, and the columns of the portico. Cossutius, a Roman citizen, who had made himself famous amongst the architects, was chosen to execute this great work. He acquired great honour by it, this pile being esteemed to have very few equal to it in magnificence. The same Cossutius was one of the first amongst the Romans who built in the Grecian taste. He gives me occasion to speak of several edifices at Rome, which often employed Greek architects, and thereby in some measure to resume my plan.



1. Temple of Fortune near the Porta Cellina at Rome. J. Dugan, sculp.

[In order to render this article upon architecture the more useful and entertaining, it was thought proper to add here the following plates of the seven different kinds of ancient temples, with a brief description of each of them. The reader may observe that all the different orders of architecture are introduced in them.]

TEMPLE I. Plate 3.

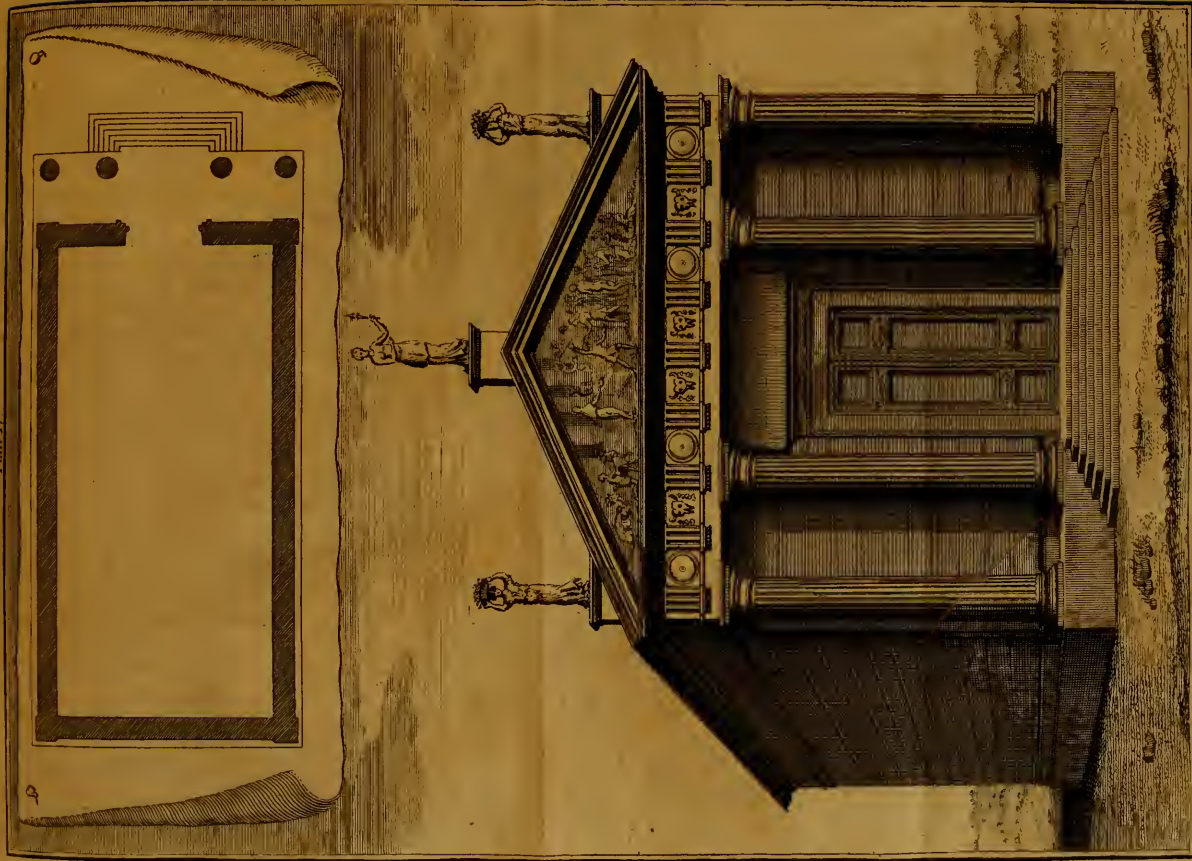
Of Fortune.

THIS kind of temples were called *Antæ* or *Parastatæ*, because they had no pillars at their angles, but only pilasters, which the ancients called *Antæ* or *Parastatæ*. The examples Vitruvius gives of them are three temples of Fortune at Rome, especially that near the *Porta Collina*. As he does not describe it particularly, Mr. Perrault thought proper to make it of the Tuscan order, which suits the most simple of all temples, and an *Aræstyle*, that is to say, one having few pillars. There was a necessity for giving it a double pediment upon account of its having two different coverings, that of the temple, and that of the portico, supported by the two Tuscan pillars. The height of those pediments, according to Vitruvius, was considerable.

TEMPLE II. Plate 4.

Of Ceres and Proserpine at Eleusis.

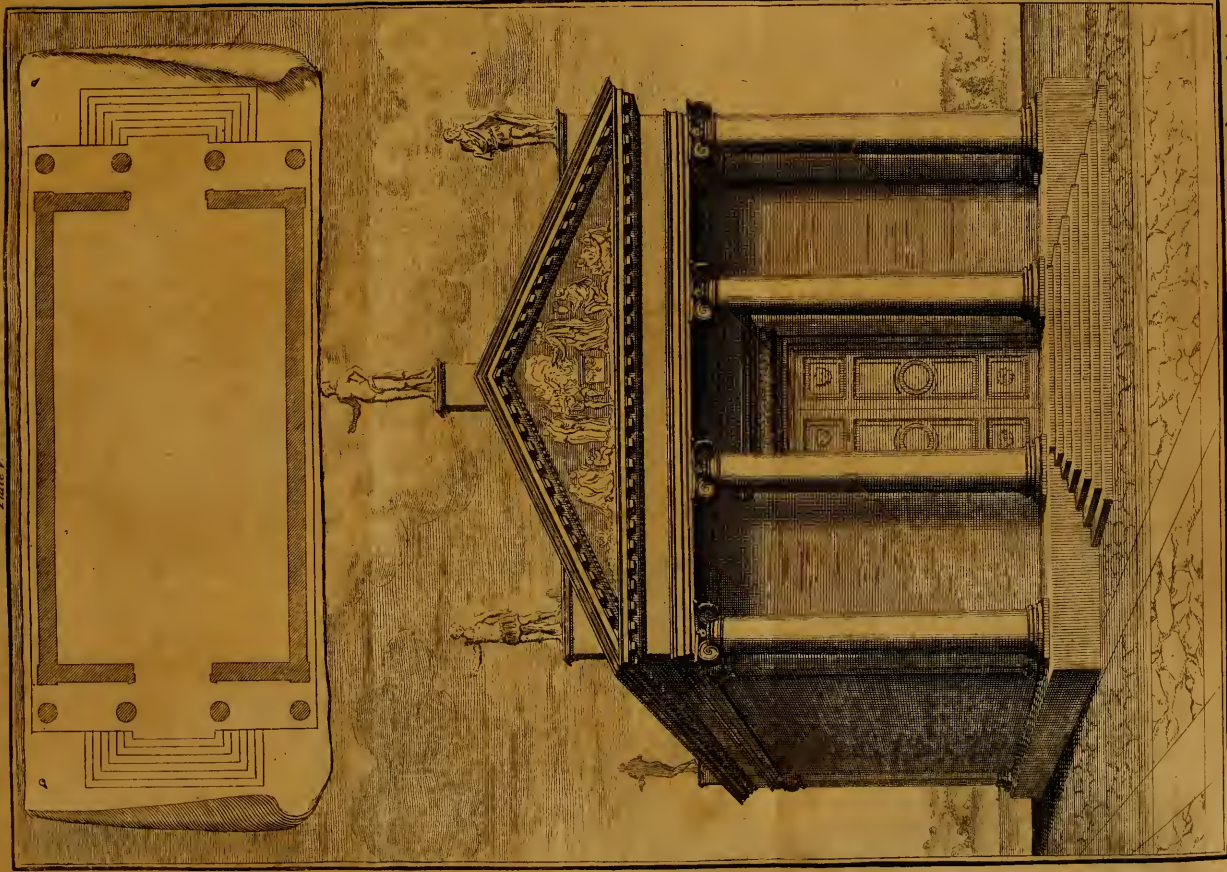
THIS second species of temple was called *Prostylos*, from having pillars only in front. It is called also *Tetrastylos*, that is to say, having four pillars in front. The example of this is the temple of Ceres Eleusina, mentioned above as one of the four principal temples of Greece. It was begun by Ictinus, and finished by Philo, who made it a Prostyle or Tetrastyle, by adding columns to its front. The basso relievo in the pannel of its pediment represents a piece of history related by Pausanias, who says, that, near the temple of Ceres Eleusina, were two large stones, that lay upon one another, from between which the priests went annually in procession to take a writing, that contained the ceremonies to be observed in the sacrifices during the rest of the year. And because the ancients used to represent upon the pediments of their temples the particular manner in which the sacrifices were performed in them, and the sacrifices of this temple, which changed every year, could not be represented, it was thought proper to put this piece of history upon the front of it, as it shews one of the principal circumstances relating to these ceremonies; which was to take the writing, that prescribed the order to be observed in the sacrifices during the year, from betwixt the stones.



II. Temple of Ceres & Proserpine at Sicily's.

J. B. Smith Sculp.

Plate II.



III. Temple of Concord at Rome.

J. Bagnin sculp.

TEMPLE III. Plate 5.

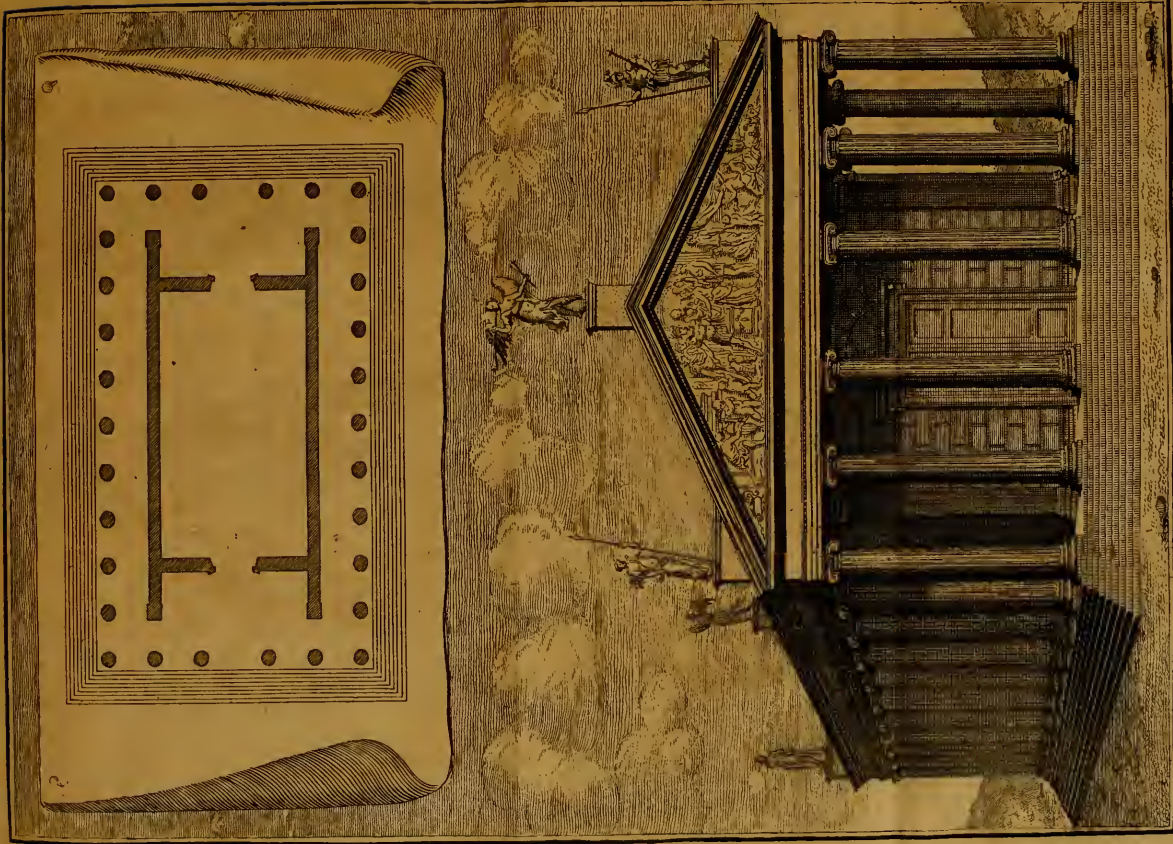
Of Concord at Rome.

THIS kind of temple is called *Amphiprostylos*, that is, a double Prostyle, having pillars both before and behind it. It is also a Tetrastyle, as well as a Prostyle. This example is of the Composite order, for the sake of diversifying the plates; and is taken from the ruins of the temple of Concord still to be seen at Rome. It is called Composite, from being composed of the Ionic and Corinthian orders, having the volutes and eggs of the former, and the plinth of the latter.

TEMPLE IV. Plate 6.

Of virtue and honour at Rome.

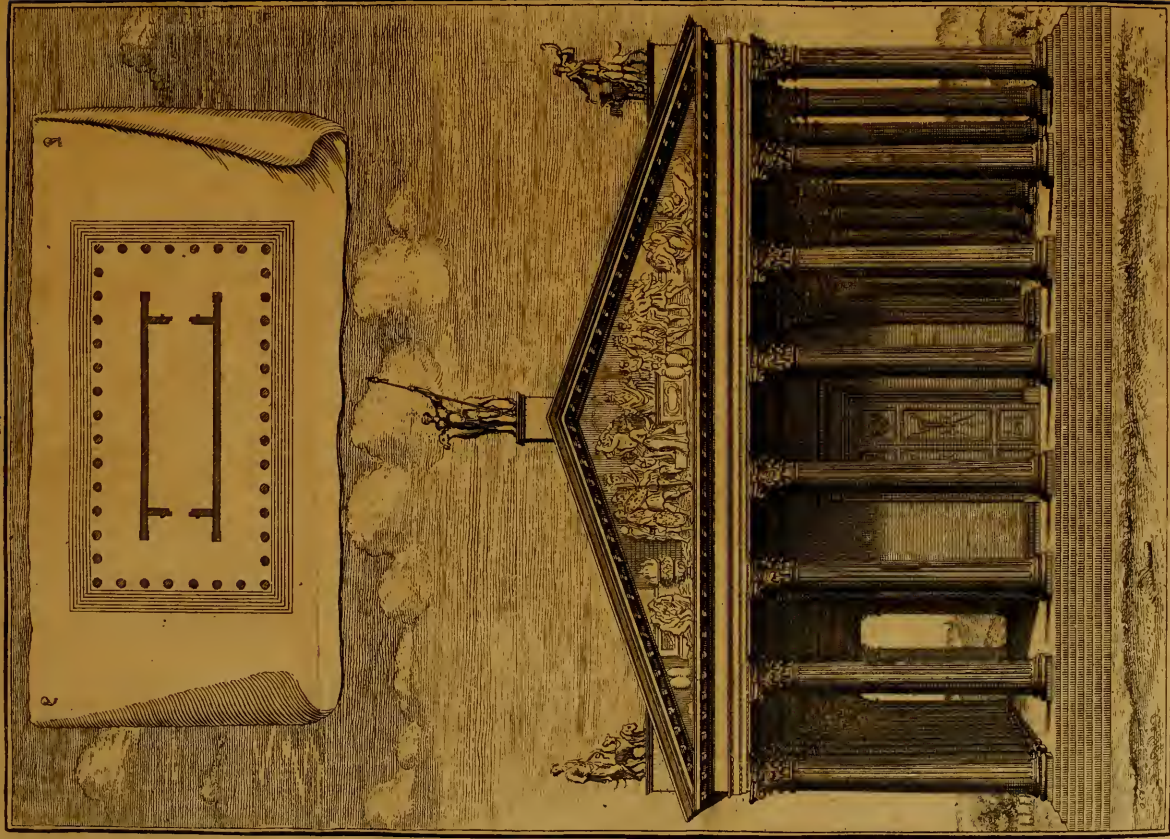
THIS fourth kind of temple is called *Periptera*, from having pillars all around it. It is an *Hexastyle*, that is, having six pillars in front: it has eleven on each side, including those at the corners. The example Vitruvius gives of it is the temple of virtue and honour built by Marius and adorned with a portico all around it by Mutius the architect. St. Augustin mentions this temple and tells us, that the fore-part of it was dedicated to virtue, and the back-part to honour, in order to establish a refined morality; to which Vitruvius adds a circumstance, omitted by that Saint, that makes for the same effect: *viz.* that this temple had no *posticum*, or back-door, as most others had which intimates, that it is not only necessary to pass through virtue to arrive at honour, but that honour obliges her votaries to return also through virtue that is to say, to persevere and improve in it. In the plan there is a back-door designed, conformable to what Vitruvius lays down as essential to this kind of temples. The elevation is of the Ionic order that all the orders might be here represented (as is said before) with all the different kinds of temples.



IV. Temple of Virtue & Honour at Rome.

J. B. Guillemeau sculp.





V. Temple of Diana in the City of Magnesia.

St. Martin's School

TEMPLE V. Plate 7.

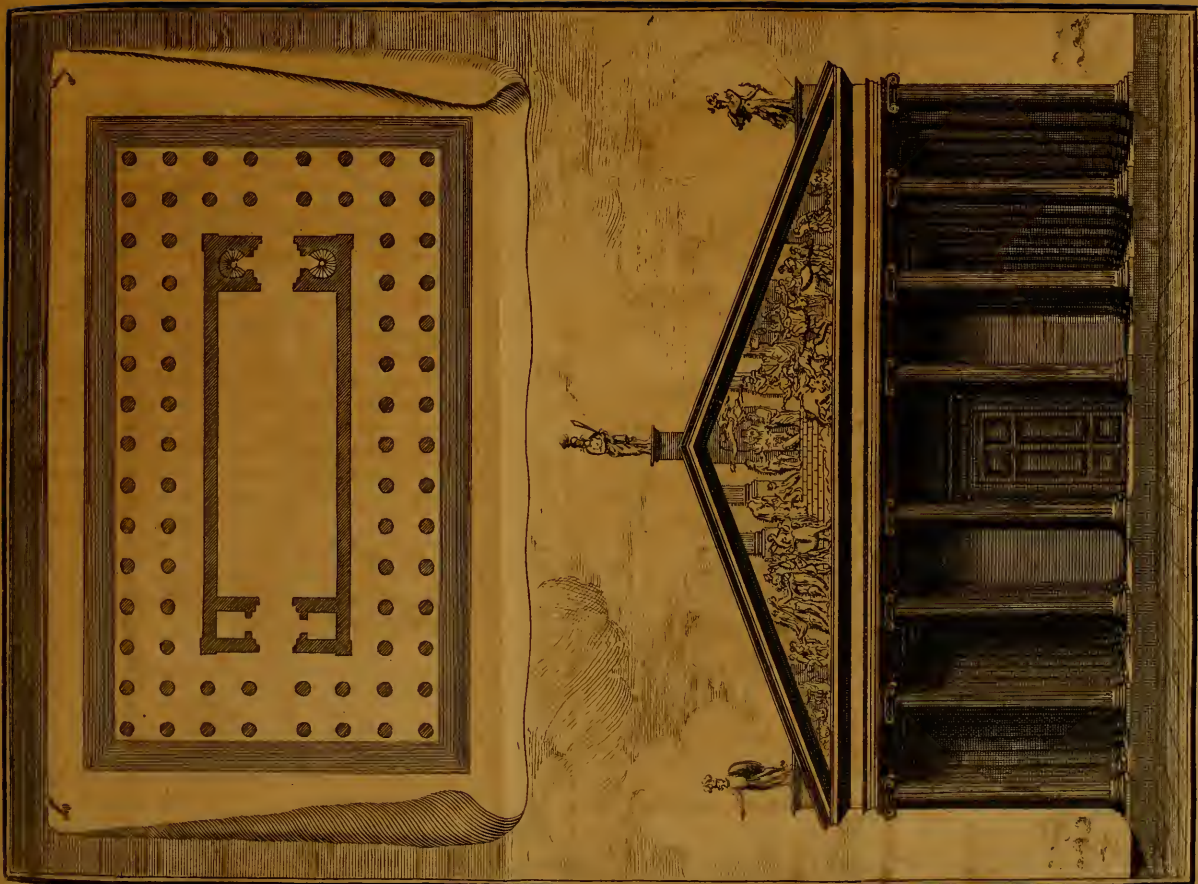
Of Diana in the city of Magnesia.

THIS fifth kind of temple is called *Pseudo-diptera*, that is, false or imperfect Diptera, because it had not the double rows of pillars which the Diptera had. It is an *Ostostyle*, that is, having eight pillars in front; and a *Systyle*, or having its pillars close, there being only two diameters of pillar between each of them. It has fifteen pillars on the sides, including those at the corners. Vitruvius says, there were no examples of this kind of temple at Rome, wherefore he cites that of Diana at Magnesia, built by Hermogenes Alabandinus, the first and most celebrated architect of antiquity, who was the inventor of this kind of temple. The space between the walls and the pillars was two intercolumniations, and the breadth of the base of a pillar, or five diameters of a pillar. There was also a temple of Apollo of this kind at Magnesia, built by Mnestes.

TEMPLE VI. Plate 8.

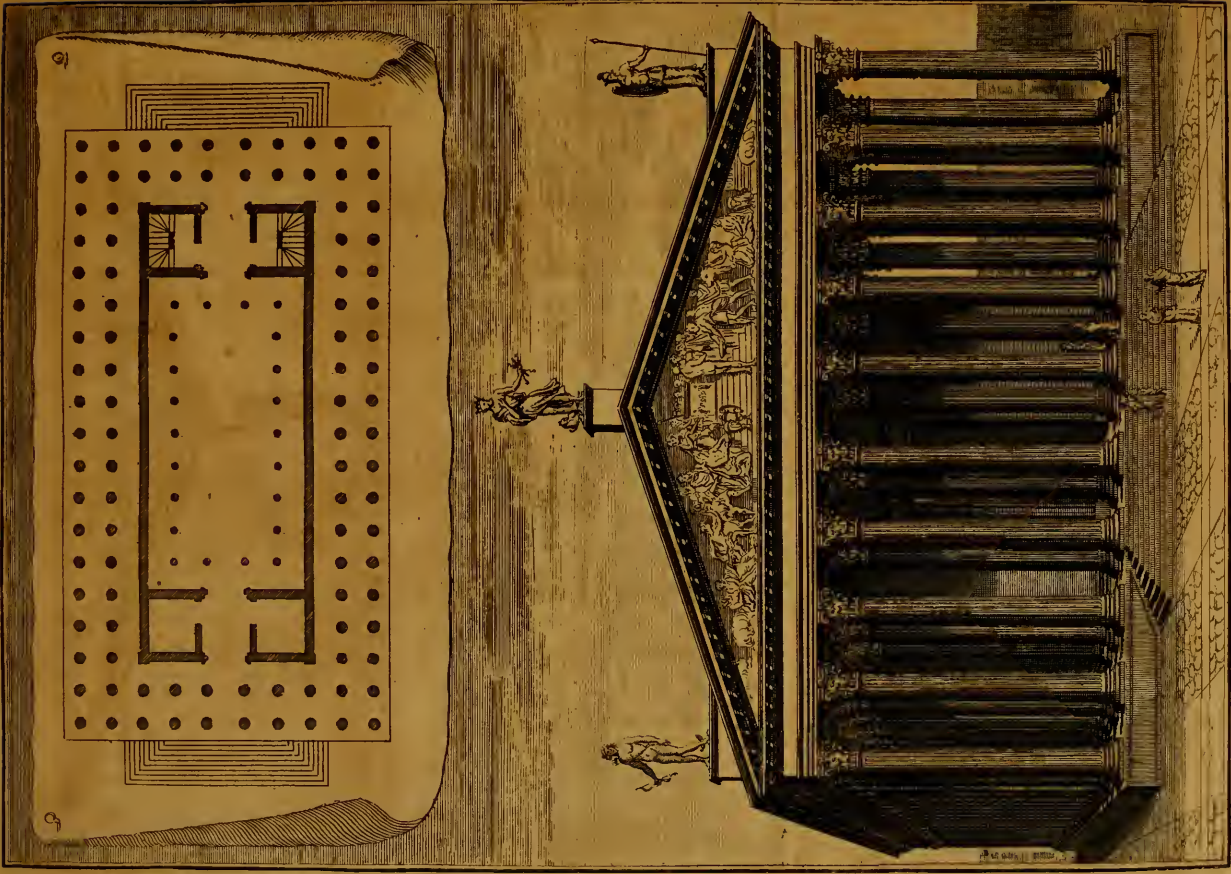
Of Diana at Ephesus.

THIS sixth kind of temple is called *Dipteris* from having two rows of pillars all round it. It is an *Oestyle*, that is to say, having eight pillars in front of the Ionic order, according to the example cited by Vitruvius, which is the temple of Diana at Ephesus built by Ctesiphon, the first of the four principal temples of Greece: Pliny tells us, it had been seven times rebuilt. It is represented in the plate as an *Eustyle*, that is to say, having its intercolumniations of two diameters, and the fourth of a pillar, in order to render it in some measure conformable to the proportions given by Pliny; for which reason also the space between the two middle pillars is somewhat larger than ordinary. For Pliny tells us, that the architrave in the middle was so exceeding large, that it was feigned the goddess placed it there herself, upon the architect's despairing of being able to do it. Stairs are represented in the plan; because the same author says, there were stairs to go up to the top of the temple made all of a piece out of one tree, and that of the vine too.



VI. Temple of Diana at Ephesus.

J. B. Smith del.



VIII. Temple of Jupiter Olympius at Athens.

of Basire deluge

T E M P L E VII. Plate 9.

Of Jupiter Olympius at Athens.

THE seventh kind of temple is called *Hypætra*, that is, open and exposed to the weather. It is a *Decastyle*, having ten pillars in front; and a *Prostyle*, that is to say, having its pillars close to each other. Vitruvius says, there were no temples of that kind at Rome, and gives that of Jupiter Olympius as an example of it; which, he tells us, in the preface of his seventh book, was built at Athens by Cossutius, a Roman architect. Pausanias says, it had pillars within it that formed a Peristyle, which is essential to this kind of temple: but this Peristyle could be represented on this plate only in the plan. Pausanias also relates the ceremony represented on the pediment; which is the priest sawing the altar of Jupiter with a mixture of ashes brought from the Prytanæum, and the water of the river Alpheus; this was done every year on the nineteenth of February. He tells us besides, that there was an ascent to this altar of several steps.]

6. *Celebrated buildings at Rome.*

The art of building was almost as soon known in Italy as Greece, if it be true, that the Tuscans had not had any communication with the Greeks, who they invented the particular order, which retain their name to this day. The tomb which Porfenna king of Etruria, caused to be erected for himself during his life-time, shews the great knowledge they had in those days of this art. This structure was of stone, and built almost in the same manner as the labyrinth of Dædalus in the island of Crete if the tomb were such as Varro has described it in a passage cited by Pliny.

Plin. l. 36.
c. 13.

Tarquinius Priscus had a little before erected very considerable works at Rome. For it was he who first inclosed that city with a wall of stone and laid the foundations of the temple of Jupiter Capitolinus, which his grandson Tarquinius Superbus finished at a great expence, having for that purpose called in the best workmen from Etruria. The Roman citizens were not dispensed with from sharing in that work, which, though very * painful and laborious, being added to the fatigues of war they did not think too heavy; so much joy they conceived, and so much honour they thought it to build the temples of their gods with their own hands.

The same † Tarquinius Priscus raised two other works, not so splendid indeed in outward appearance but far more considerable in regard to labour and

* Qui cum haud parvus & ipse militiæ adderetur labor, minùs tam men plebs gravabatur, se templa deùm exædificare manibus suis *Liv. l. 1. n. 56.*

† Quæ (plebs) posthac & ad alia, ut specie minora, sic labori aliquanto majoris, traducebatur opera: fores in circo faciendas cloacamq; maximam receptaculum omnium purgamentorum urbi sub terram agendam: quibus duobus operibus vix nova hæc magnificentiæ quicquam adæquare potuit. *Liv. ibid.*



Expugnationem prætorii utitur in pariter facte. Anno MDCXXVII vires pulchri
 lectura. Magna prætorii utitur in pariter facte. Anno MDCXXVII vires pulchri
 mo hoc fignere arte exornata et nihil coloribus sunt expugnationem exhibet. Magna præ
 videtur, et certam ad hunc usque magis est utitur in pariter facte. Anno MDCXXVII vires pulchri
 quos. Accipitur supra exornata prætorii, et post eam. Anno MDCXXVII vires pulchri
 prætorii prætorii cum manibus certam in manibus prætorii. Anno MDCXXVII vires pulchri



expenſe: works, ſays Livy, to which the magnificence of our days, in its moſt ſupreme degree, has ſcarce been capable of producing any thing comparable.

One of theſe works was the ſubterraneous ſewers and canals that received all the dirt and filth of the city; the remains of which ſtill raiſe admiration and aſtoniſhment from the boldneſs of the undertaking, and the greatneſs of the expence it muſt neceſſarily have coſt to compleat it. And, indeed, of what thickneſs and ſolidity muſt theſe vaulted water-courſes have been, which ran from the extremity of the city as far as the Tyber, to ſupport, for ſo many ages, without ever giving way in the leaſt, the enormous weight of the vaſt ſtreets of Rome erected upon them, through which an infinity of carriages of immense weight were continually paſſing!

M. Scaurus, to adorn the ſtage of a theatre Plin. 1. 36. c. 2. during his edileſhip, which was to continue only a month at moſt, had cauſed three hundred and ſixty columns of marble to be prepared, many of which were thirty-eight feet high. When the time for the ſhews was expired, he had all thoſe pillars carried into his own houſe. The undertaker, for making good the common ſewers, obliged that edile to give him ſecurity for repairing the damage, that the carriage of ſo many heavy pillars might occaſion to thoſe vaults, which from the time of Tarquinius Priſcus, that is to ſay, for almoſt eight hundred years, had continued immoveable; and ſtill bore ſo exceſſive a load without giving way.

Befides which, theſe ſubterraneous canals contributed exceedingly to the cleanlineſs of the houſes and ſtreets, as well as to the purity and wholeſome- neſs of the air. The water of ſeven brooks, which had been united together, and which was frequently turned into theſe ſubterraneous beds, cleaned them

entirely, and carried off along with them all the filth into the Tyber.

Works of this kind, though hid under the earth, and buried in darkness, will no doubt appear to every good judge more worthy of praise, than the most magnificent edifices, and most superb palaces. These suit the majesty of kings indeed, but do not exalt their merit, and, properly speaking, reflect no honour but on the skill of the architect: whereas the others argue princes, who know the true value of things; who do not suffer themselves to be dazzled by false splendor; who are more intent upon the public utility than their own glory; and who are studious to extend their services and beneficence to the latest posterity: objects worthy the ambition of a prince!

After the Tarquins were expelled Rome, the people, having abolished monarchical government, and resumed the sovereign authority, were solely intent upon extending the bounds of their empire. When, in process of time, they came to have more commerce with the Greeks, they began to erect more superb and more regular buildings. For it was from the Greeks that the Romans learned to excel in architecture. Till then their edifices had nothing to recommend them but their solidity and magnitude. Of all the orders they knew only the Tuscan. They were almost entirely ignorant of sculpture, and did not even use marble: at least they neither knew how to polish it, nor make pillars and other works of it, that by their beauty and excellent workmanship might make a magnificent appearance when applied in proper places.

Plin. 1. 35.
c. 6.

It was not, properly speaking, till towards the latter times of the republic, and under the emperors, that is to say, when luxury was grown to a great height at Rome, that architecture appeared there in all its splendor. What a multitude of superb buildings and magnificent works were erected, which

still

still adorn Rome! The pantheon, the baths, the amphitheatre called the Colisæum, the aqueducts, the causeways, the pillars of Trajan and Antonine, and the famous bridge over the Danube, built by the order of Trajan. This work alone would have sufficed to have immortalized his name. It had twenty piles to support the arches, each sixty feet thick, and hundred and fifty high, without including the foundations, and an hundred and seventy feet distant from one another, which makes in all a breadth of fifteen hundred fourscore and ten yards. This was, however, that part of the whole country in which the Danube was narrowest, but at the same time deepest and most rapid; which seemed an obstacle not to be surmounted by human industry. It was impossible to make dams in it for laying the foundation of the piles. Instead of which, it was necessary to throw into the bed of the river a prodigious quantity of different materials, and by that means to form a kind of bases equal to the height of the water, in order afterwards to erect the piles upon them, and the whole superstructure of the bridge. Trajan made this bridge with the view of using it against the Barbarians. His successor Adrian, on the contrary, apprehended its being used by the Barbarians against the Romans, and caused the arches of it to be demolished. Apollodorus of Damascus was the architect who presided in erecting this bridge: he had been employed in many other works by Trajan. His end was very unfortunate.

The emperor Adrian had caused a temple to be built in honour of Rome and of Venus, at the extremities of which they were placed, each sitting upon a throne: there is reason to believe that he had drawn the plan, and given the dimensions himself, because he piqued himself upon his excelling in all arts and sciences. After it was built, Adrian sent the draught of it to Apollodorus. He remem-

Dio. l. 68.
p. 776.Dio. l. 69.
p. 789,
790.

bered, that, one day inclining to give his opinion upon a building Trajan was discoursing about to Apollodorus, that architect had rejected what he said with contempt, as talking of what he did not understand. It was therefore by way of insult, and to shew him that something great and perfect might be done without him, that he sent him the design of this temple, with express order to let him know his opinion of it. Apollodorus was naturally no flatterer, and saw plainly the affront intended him. After having praised the beauty, delicacy, and magnificence of the building, he added, that, since he was ordered to give his opinion of it, he could not deny but it had one fault; which was, that, if the goddesses should have an inclination to rise up, they would be in danger of breaking their heads, because the arch of the roof was too confined, and the temple not high enough. The emperor was immediately sensible of the gross and irreparable fault he had committed, and was inconsolable upon it. But the architect paid for it, and his too great ingenuity, which was not perhaps sufficiently reserved and respectful, cost him his life.

Sueton. in
Ner. c. 31.

I have not ranked, in the number of the magnificent buildings of Rome, the palace called the Golden House, which Nero caused to be erected there, though perhaps nothing like it was ever seen, either for the extent of its walls, the beauty of its gardens, the number and delicacy of its porticoes, the sumptuosity of its buildings, or the gold, pearls, jewels, and other precious materials with which it glittered. I do not think it allowable to give the name of magnificence to a palace built with the spoils, and cemented with the blood of the Roman citizens. Whence, says Suetonius, the buildings of Nero were more destructive to the empire than all his other follies: *Non in aliâ re damnosior quam in ædificando.*

Cicero

Cicero had passed a still more severe judgment upon it, who held no expences to be really laudable, but such as had the public utility in view; as the walls of cities and citadels, arsenals, ports, aqueducts, causeways, and others of a like nature. He carried his rigour so far, as to condemn theatres, piazza's, and even new temples; and supported his opinion by the authority of Demetrius Phaleræus, who absolutely condemned the excessive expences of Pericles in such structures.

The same Cicero makes excellent reflections upon the buildings of private persons: for there is certainly a difference to be made in this point, as well as all others, in regard to princes. * He is for having persons of the first rank in the state lodged in an honourable manner, and that they should support their dignity by their habitations; but at the same time that their houses should not be their principal merit, and that the master should do honour to the dwelling, and not the dwelling to the master. He recommends to the great men that build carefully to avoid the excessive expences incurred by the magnificence of structures: expences, which become of fatal and contagious example to a city; the generality not failing, and making it a merit to imitate, and sometimes even to exceed, the great. Palaces thus multiplied are said to do honour to a city. They rather dishonour it, because they corrupt it, by rendering luxury and pomp continually necessary, by the costliness of furniture, and the other expensive ornaments, required in lofty buildings; which are, besides, often the cause of the ruin of families.

* Ornanda est dignitas domo, non ex domo dignitas tota quaerenda: nec domo dominus, sed domino domus honestanda est—Cavendum est etiam, praesertim si ipse aedifices, ne extra modum sumptu & magnificentia prodeas. Quo in genere multum mali in exemplo est: studiosè enim pleriq; praesertim in hac parte, facta principum imitantur.

Cato, in his book upon rural life, gives very wise advice. * When, says he, to build is the question, we should deliberate a great while, (and often not build at all;) but, when to plant, we should not deliberate but plant directly.

Vitruv.
præfat.
l. 10.

In case we build, prudence requires our taking good precautions. “ Formerly, says Vitruvius, “ there was a severe but very just law at Ephe- “ sus, by which the architects who undertook a “ public building, were obliged to declare what “ it would cost, and to do it for the price they had “ demanded, for the performance of which their “ whole estate was bound. When the work was “ finished, they were publicly honoured and re- “ warded, if the expence was according to their “ estimate. If the expence exceeded the agreement “ only a fourth, the public paid the surplus. But, “ if it went beyond that, the architect made good “ the deficiency. It were to be wished, continues “ Vitruvius, that the Romans had such a regulation “ in regard to their buildings, as well public as “ private: it would prevent the ruin of abundance “ of persons.”

This is a very just reflection, and argues a very estimable character in Vitruvius, and a great fund of probity, which indeed distinguishes itself throughout his whole work, and does him no less honour than his great capacity. He followed his profession with a noble disinterestedness, very uncommon in those who practise it. † Reputation, not gain, was his motive. He had learned from his masters, that an architect ought to stay till he is desired to un-

Præfat. l. 6.

* *Ædificare diu cogitare oportet, conferere cogitare non oportet, sed facere.*

† *Ego autem, Cæsar, non ad pecuniam parandam ex arte dedi studium, sed potius tenuitatem cum bona famâ quam abundantiam cum infamia sequendam probavi. Cæteri architecti rogant & ambiunt, ut architectentur: mihi autem a præceptoribus est traditum, rogatum non rogantem oportere suscipere curam, quod ingenuus color movetur pudore petendo rem suspiciosam. Nam beneficium dantes, non recipientes, ambiuntur. Vitruv.*

dertake

undertake a work; and that he cannot, without shame, make a demand, that shews him interested in it: because every body knows people do not solicit others to do them good, but to receive it from them.

He requires in his profession an extent of knowledge, that occasions astonishment. According to Vitruvius, an architect must be both ingenious and laborious: for capacity without application, and application without capacity, never make an excellent artist. He must therefore know how to design, understand geometry, not be ignorant of optics, have learnt arithmetic, know much of history, have well studied philosophy, with some knowledge of music, physic, civil law, and astronomy. He afterwards proceeds to shew particularly, in what manner each of these branches of learning may be useful to an architect.

When he comes to philosophy, besides the knowledge necessary to his art, to be derived from physics, he considers it with regard to morals. The study of philosophy, says he, serves also to render the architect more compleat, who ought to have a soul great and bold, without arrogance, equitable and faithful, and, what is still more important, entirely exempt from avarice: for it is utterly impossible ever to do any thing well, or to attain any excellence without fidelity and honour. He ought therefore to be disinterested, and to have less in view the acquiring of riches, than honour and reputation, by architecture; never acting any thing unworthy of so honourable a profession: for this is what philosophy prescribes."

Vitruvius has not thought fit to require in his architect the talent of eloquence, which it is often proper even to distrust, as a very happy saying Plutarch has preserved explains. It was occasioned by a considerable building that the Athenians intended

tended to erect, for the execution of which two architects offered themselves to the people. The one, a fine speaker, but not very expert in his art, charmed and dazzled the whole assembly by the elegant manner in which he expressed himself in explaining the plan he proposed to follow. The other, as bad an orator as he was an excellent architect, contented himself with telling the Athenians: * *Men of Athens, I will do what he has said.*

I conceived, that I could not conclude this article upon architecture better, than with giving some idea of the ability and manners of him, who, in the opinion of all good judges, practised and taught it with most reputation.

* "Ἄνδρες Ἀθηναῖοι, ὡς ἕτερος εἶπεν, ἐγὼ ποιήσω.



CHAPTER IV.
OF SCULPTURE.

SECT. I.

Of the different species of sculpture.

SCULPTURE is an art, which by the means of a design or plan and of solid matter, imitates the palpable objects of nature. Its matter is wood, stone, marble, ivory; different metals, as gold, silver, copper; precious stones, as agate, and the like. This art includes also casting or founding, which is subdivided into the art of making figures of wax, and that of casting them in all sorts of metals. By sculpture I understand here all these different species.

The sculptors and painters have often had great disputes amongst themselves upon the pre-eminence of their several professions; the first founding the preference upon the duration of their works, and the latter opposing them with the effects of the mixture and vivacity of colours. But, without entering into a question not easy to decide, sculpture and painting may be considered as two masters, that have but one origin, and whose advantages ought to be common; I might almost say the same art, of which design is the soul and rule, but which work in a different manner, and upon different materials.

It is difficult and little important to trace, thro' the obscurity of remote ages, the first inventors of sculpture. Its origin may be dated with that of the

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the world, and we may say that God was the first statuary, when, having created all beings, he seemed to redouble his attention in forming the body of man, for the beauty and perfection of which he seems to have wrought with a kind of satisfaction and complacency.

Exodus
xxxi.

Long after he had finished this master-piece of his all-powerful hands, he was willing to be honoured principally by the sculptor's application in building the ark of the covenant, of which himself gave the idea to the legislator of the Hebrews. But in what terms does he speak to the admirable artist he thought fit to employ in it? *I have chosen* says he to his prophet, *a man of the tribe of Judah, and I have filled him with the spirit of God, in wisdom, and in understanding, and in knowledge, and in all manner of workmanship. To devise cunning works to work in gold, and in silver, and in brass. And in cutting of stones, to set them, and in cutting of timber to work in all manner of workmanship.* Does not this seem as if the question were the inspiration of the prophet himself to give laws to his people. He speaks in the same manner in respect to the workmen that are to build and adorn the temple of Jerusalem.

Nothing could exalt the merit of sculpture so much as so noble a destination, if it had fulfilled faithfully. But, long before the building of the temple, and even the tabernacle, it had shamefully prostituted itself for hire to idolatry, which by its means filled the world with statues of false divinities, and exposed them for the adoration of the people. * We find in the Scripture, that one c

* Also the singular diligence of the artificer did help to set forward the ignorant to more superstition. For he, peradventure, willing to please in authority, forced all his skill to make the resemblance of the best fashion. And so the multitude, allured by the grace of the work, took him now for a god, who a little before, was but honoured as a man. And this was an occasion to deceive the world. Wisd. xi. 18, 19, 20, 21.

he causes which had conduced most to the spreading of this impious worship, had been the extreme beauty which the workmen, in emulation of each other, had exerted themselves to give those statues: The admiration, excited by the view of these excellent works of art, was a kind of enchantment, which, by strongly affecting the senses, conveyed the illusion to the mind, and drew in the multitude. It is against this universal delusion Jeremiah admonished the Israelites to beware, when they should see in Babylon the statues of gold and silver carried about in pomp upon the days of solemnity. At that time, says the prophet, when the whole multitude, filled with veneration and awe, shall prostrate themselves before the idols (for the captivity, in which the people of God were in a strange land, would not admit them to express themselves aloud) say within yourselves: IT IS ONLY THOU, O LORD, Baruch vi. 6. THAT OUGHT TO BE ADORED.

It must be owned also that sculpture did not contribute a little to the corruption of manners, by the nudity of the images, and representations contrary to modesty, as the Pagans themselves have confessed. I thought it proper to premise this remark, that, in what I shall say hereafter in praise of sculpture, the reader may see I distinguish the excellency of the art in itself, from the abuse which men have made of it.

The first sculptors made their works of earth, Plin. l. 34. c. 12. whether they were statues, or moulds and models. This made the statuary Pasiteles say, that the works which were either cast, or cut with a chissel or graver, owed their being to the art of making figures of earth, called *Plastice*. It is said that Demaratus, the father of Tarquinius Priscus, who took refuge from Corinth in Etruria, brought thither abundance of workmen with him, who ex-

* Auxere & artem vitiorum irritamenta. *Plin. Proœm. l. 33.*

celled in that art; and introduced the taste for it there, which afterwards communicated itself to the rest of Italy. The statues erected in that country to the gods, were at first only of earth, to which for their whole ornament, was added a red colour. We ought not to be ashamed of the men, says Pliny, who adored such gods. They set no value upon gold and silver, either for themselves or their deities. Juvenal calls a statue, like that erected by Tarquinius Priscus, in the temple of the father of the gods :

*Fictilis, & nullo violatus Jupiter auro,
A Jove of earth, nor yet by gold profan'd.*

It was very late before they began † to set up golden or gilt statues at Rome. This was first done in the consulship of P. Corn. Cethegus, and M. Bæbius Tamphilus, in the 571st, or 573d year of Rome.

A. M. 3820.
Plin. l. 35. c. 12. Portraits were afterwards made also of plaister and wax, the invention of which is ascribed to Lyfistratus of Sicyone, the brother of Lyfippus.

We find that the antients made statues of almost all sorts of wood. There was an image of Apollo at Sicyone made of box. At Ephesus, according to some writers, that of Diana was of cedar, as well as the roof of the temple. The lemon-tree, the cypress, the palm, the olive, the ebony, the vine; in a word, all trees not subject to rot, or to be worm-eaten, were used for statues.

Plin. l. 36. c. 4. Marble soon became the most usual, and the most esteemed material for works of sculpture. It is be-

* Hæ tum effigies deorum erant laudatissimæ. Nec poenitet non illorum, qui tales deos coluere. Aurum enim & argentum ne diis quidem conficiebant. *Plin.*

† Acilius Glabrio duumvir, statuam auratam, quæ prima omnium in Italia statua aurata est, patri Glabrioni posuit. *Liv.* l. 40. p. 34.

believed that Dipænes and Scyllis, both of Crete, were the first who used it at Sicyone, which was long, in a manner, the centre and school of arts: They lived about the 50th olympiad, a little before A. M. 3424. Cyrus reigned in Persia.

Bupalus and Anthermus, two brothers, made themselves famous for the art of carving marble, in the time of Hipponax, that is to say, in the 60th olympiad. That poet had a very ugly face. A. M. 3464. They made his portrait in order to expose it to the laughter of spectators. Hipponax conceived a more than poetic fury against them, and made such virulent verses upon them, that, according to some, they hanged themselves through grief and shame. But this fact cannot be true, because there were works of their making after that time.

At first the artists used only white marble, Plin. l. 36. brought from the isle of Pharos. It was reported, c. 6. that, in cutting these blocks of marble, they sometimes found natural figures of a Silenus, a god Pan, a whale and other fishes. Jasper and spotted marble became afterwards the fashion. It was brought principally from the quarries of Chio, and soon was commonly found in almost all countries.

It is believed, that the manner of cutting large blocks of marble into many thin pieces, to cover the walls of houses, was invented in Caria. The palace of king Mausolus at Halicarnassus is the most antient house that had these incrustations of marble, which were one of its greatest ornaments.

The use of ivory, in works of sculpture, was known from the earliest ages of Greece. Ho- Odyss. Δ. mer speaks of them, though he never mentions v. 73. elephants.

The art of casting gold and silver is of the greatest antiquity, and cannot be traced to its origin. The gods of Laban, which Rachel stole, seem to have been of this kind. The jewels offered to Rebecca were of cast gold. Before the Israelites left Egypt,

Egypt, they had seen cast statues, which they imitated in casting the golden calf, as they did afterwards in the brazen serpent. From that time all the nations of the east cast their gods, *deos conflantes*; and God forbid his people to imitate them upon pain of death. In the building of the tabernacle, the workmen did not invent the art of founding: God only directed their taste. It is said, that Solomon caused the figures used in the temple, and elsewhere, to be cast near Jericho, because it was a clayey soil, *in argillosa terra*: which shews that they had even then the same manner of founding great masses as we have.

It were to be wished, that the Greek or Roman authors had informed us in what manner the antients cast their metals in making figures. Plin. l. 37. We find, by what Pliny writes upon that head, that they sometimes made use of stone-moulds. Vitruv. l. 2. c. 7. Vitruvius speaks of a kind of stones found about the lake Volsenus, and in other parts of Italy, which would bear the force of fire without breaking, and of which moulds were made for casting several sorts of works. Plin. l. 54. c. 14. The antients had the art of mingling different metals in the mould, to express different passions and sentiments by the diversity of colours.

There are several manners of carving metals and precious stones: for in both the one and the other they work in relief, and in hollow, which is called engraving. The antients excelled in both ways. The basso relievo's, which we have of theirs, are infinitely esteemed by good judges: and as to engraved stones, as the fine agates and, crystals, of which there are abundance in the king of France's cabinet, it is generally said, that there is nothing so exquisite as those of the antient masters.

Though they engraved upon almost all kinds of precious stones, the most finished figures, which we have of theirs, are cut upon onyxes, which

is a kind of agate not transparent, or on cornelians, which they found more fit for engraving than any other stones, because they are more firm and even, and cut more neatly; and also because there are different colours that run one above the other in the onyx, by the means of which in relievo the bottom continues of one colour, and the figures of another. To engrave upon gems and crystals they used, as now, the point of a diamond.

The antients highly extolled the gem in the ring of Polycrates, tyrant of Samos, which he threw into the sea, and was brought back to him by a very extraordinary accident: in Pliny's time it was pretended to be at Rome. It was, according to some, a sardonix; to others an emerald. That of Pyrrhus was no less esteemed; upon which might be seen Apollo with his harp and the nine muses, each with their particular symbol: And all this not the effect of art but of nature: *non arte, sed sponte naturæ.* Plin. l. 7. c. 1.

The art of sculpture was principally employed upon cups used at feasts: these pieces were very rich and curious, as well as of the most costly materials.

One of the greatest advantages the art of making portraits ever received, for the eternising its works, is that of engraving upon wood and copper-plates, by the means of which a great number of prints are taken off, that multiply a design almost to infinity, and convey the artist's thoughts into different parts, which before could only be known from the single piece of his own work. There is reason to wonder, that the antients, who engraved so many excellent things upon hard stones and crystals, did not discover so fine a secret, which indeed did not appear till after printing; and was, no doubt, an effect and imitation of it. For the impression of figures and cuts did not begin to be used till the end of the fourteenth century. The world is indebted

for the invention of them to a goldsmith, that worked at Florence.

After having related, by way of abridgment, the greatest part of what employed the sculpture of the antients, it remains for me to give an account of some of those who practised it with most success and reputation.

S E C T. II.

Sculptors most celebrated amongst the antients.

THOUGH sculpture had its birth in Asia and Egypt, it was from Greece, properly speaking, that it derived its lustre and perfection. Not to mention the first rude essays of this art, which always carry with them the marks of their infantile state, Greece produced, especially in the time of Pericles * and after him, a multitude of excellent artists, who laboured, in emulation of each other, to place sculpture in honour by an infinite number of works, which have been, and will be, the admiration of all ages. Attica †, fertile in quarries of marble, and still more abundant in happy genius's for the arts, was soon enriched with an infinite number of statues.

I shall mention here only such of them, as were most distinguished by their ability and reputation. The most celebrated are Phidias, Polycletus, Myron, Lysippus, Praxiteles, and Scopas.

There is another still more illustrious than all I have named, but in a different way: this is the famous Socrates. I ought not to envy sculpture the honour she had of reckoning Socrates amongst her

* Multas artes ad animorum corporumq; cultum nobis eruditissima omnium gens (Græca) invenit. *Liv.* l. 39. c. 8.

† Exornata eo genere operum eximiè terra Attica, & copia domestici marmoris, & ingenio artificum. *Liv.* l. 31. n. 26. *These marbles were dug in the Pentelic mountain, which was in Attica.*

pupils. He was the son of a statuary, and was one himself; before he commenced philosopher. The three graces, which were carefully preserved in the citadel of Athens, were generally ascribed to him. They were not naked, as it was usual to represent them, but covered: which shews what inclination he had at that time for virtue. He said, that this art had taught him the first precepts of philosophy; and that, as sculpture gives form to its subjects by removing its superfluities, so that science introduces virtue into the heart of man, by gradually retrenching all his imperfections.

Diog.
Laert. in
Socr.

PHIDIAS:

Phidias, for many reasons, deserves to be placed at the head of the sculptors. He was an Athenian, and flourished in the 83d olympiad; happy times, wherein, after the victories obtained over the Persians, abundance, the daughter of peace, and another of arts, produced various talents by the protection Pericles afforded them! Phidias was not one of those artists who only know how to handle the tools of their profession. He had a mind adorned with all the knowledge that could be useful to a man of his profession; history, poetry, fable, geometry, and optics. A fact, not a little curious, will shew in what manner the latter was useful to him.

A. M.
3596.

Alcamenes and he were each employed to make a statue of Minerva, in order that the finest of them might be chosen, and placed on a very high column. When the two statues were finished, they were exposed to the view of the public. The Minerva of Alcamenes, when seen near, seemed admirable, and carried all the voices. That of Phidias, on the contrary, was thought insupportable; a great open mouth, nostrils which seemed drawn in, and something rude and gross throughout the whole visage.

Phidias and his statues were ridiculed. *Set them*, said he, *where they are to be placed*: which was accordingly done alternately. The Minerva of Alcamenes appeared then like nothing, whilst that of Phidias had a wonderful effect from its air of grandeur and majesty, which the people could never sufficiently admire. Phidias received the approbation his rival had before, who retired with shame and confusion, very much repenting that he had not learnt the rules of optics.

The statues, so much extolled before the times we now speak of, were more estimable for their antiquity than merit. Phidias was the first who gave the Greeks a taste for the Fine in nature, and taught them to copy it. * Hence, as soon as his works appeared, they were universally admired; and what is still more astonishing than that he made admirable statues, is, his making so many of them: for their number, according to authors, seems incredible; and he perhaps is the only one that ever united so much facility with such perfection.

Pausan. in
Attic.
p. 62.

I believe he worked with great pleasure upon a block of marble, found in the Persian camp after the battle of Marathon, in which those Barbarians were entirely defeated. They had assured themselves of victory, and had brought that stone thither, in order to erect it as a trophy. Phidias made a Nemesis of it, the goddess whose function it is to humble and punish the insolent pride of men. The natural hatred of the Greeks for the Barbarians, and the grateful pleasure of avenging their country, undoubtedly animated the sculptor's genius with new fire, and lent new force and address to his hands and chissel.

Id. in
Bœot.
p. 548.

At the price of the spoils taken from the same enemies, he made a statue of Minerva also for the

* Quinti Hortensii admodum adolescentis ingenium, ut Phidiaz figuram, simul aspectum & prebaturum est. *Cic. de clar. Orat. n. 228.*

Platæans. It was of wood gilt. The face, as well as the hands and feet, were of Pentelic marble.

His talent lay principally in representing the gods. His imagination was great and noble; so that, * according to Cicero, he did not copy their features and resemblance from any visible objects, but by the force of genius formed an idea of true beauty, to which he continually applied himself, and which became his rule and model, and directed his art and execution.

Hence Pericles, who had an higher opinion of him than of all the other architects, made him director and a kind of superintendant of the buildings of the republic. When the Parthenon, that magnificent temple of Minerva, was finished, of which some remains not ill preserved still charm travellers, and it was to be dedicated, which consisted in setting up the statue of the goddess in it, Phidias was charged with the work, in which he excelled himself. He made a statue of gold and ivory, of twenty-six cubits (or thirty-nine feet) high. The Athenians chose to have it of ivory, which at that time was much more scarce and valuable than the finest marble.

How rich soever this prodigious statue was, the Plin. l. 36. sculptor's art infinitely surpassed the materials of it. c. 5. Phidias had carved, upon the convex part of Minerva's shield, the battle of the Athenians with the Amazons; and, upon the concave, that of the giants with the gods; upon the buskins of the goddess he added the battle of the Centaurs and Lapithæ; on the pedestal the birth of Pandora, with all that fable says of it. Cicero, Pliny, Plutarch, Pausanias, and several other great writers of anti-

* Phidias, cum faceret Jovis formam aut Minervæ, non contem-
plabatur aliquem a quo similitudinem duceret: sed ipse in mente in-
sidebat species pulchritudinis eximia quædam, quam intuens, in eaq;
defixus, ad illius similitudinem artem & animum dirigebat. *Cic. in
Orat. n. 9.*

quity, all connoisseurs, and eye-witnesſes of it, have ſpoke of this ſtatuë. Their teſtimony leaves no room to doubt its having been one of the fineſt pieces of workmanſhip that ever was in the world.

Plut. in
Pericl.
p. 169.

Some aſſure us, ſays Plutarch, that Phidias put his name upon the pedeaſtal of his Minerva at Athens. Pausanias does not mention this circumſtance, which Cicero entirely denies, who ſays expreſſly, that * Phidias, not being permitted to put his name to the ſtatuë, had cut his portrait upon the goddeſs's ſhield. Plutarch adds, that Phidias had repreſented himſelf in the form of an old man, quite bald, raiſing a large ſtone with both his hands; and had alſo repreſented Pericles fighting with an Amazon, but in ſuch an attitude, that his hand, which was extended to throw a javelin hid part of his face.

The moſt excellent artiſts have always affected to inſert their names in their works, in order to partake of the immortality they gave others. Myron, † that famous ſtatuary, to immortalize his name, put it in characters almoſt imperceptible, upon one of the thighs of the ſtatuë of Apollo. Pliny relates, that two Lacedæmonian architects, Saurus and Batrachus, without accepting any reward, built ſome temples in a part of the city of Rome, which Octavia cauſed afterwards to be incloſed with galleries. They flattered themſelves, that they ſhould have liberty to ſet their names upon them, which indeed ſeems the leaſt recompence due to their generous diſinterreſtedneſs. But we find that, in thoſe days, the perſons, who employed the moſt able artiſts, took all poſſible precautions to avoid ſharing the eſteem and attention of poſterity with ſimple workmen. Theſe were abſolutely reſuſed their demand. Their addreſs how-

* Phidias ſimilem ſui ſpeciem incluſit in clypeo Minervæ, cum inſcribere non licerët. *Tuſcul.* l. 1. n. 34.

† Signum Apollinis pulcherrimum, cujus in femore literulis minutis argenteis nomen inſcriptum Myronis. *Cic. Verrin. de ſign.* n. 93.

ever supplied them with an amends. They threw in, by way of ornament, lizards and frogs upon the bases and capitals of all the columns. The name of Saurus was implied by the lizard, which the Greeks call σαύρα, and that of Batrachus by the frog, which they call βάτραχος.

The prohibition I speak of was not general in Greece, of which we shall soon see a very extraordinary instance in relation to Phidias himself: it was perhaps peculiar to Athens. However it was, his having given the two portraits a place in the shield of Minerva was made criminal. Nor was that all; Menon, one of his pupils, demanded to be heard, and made himself his accuser. He alledged that he had applied to his own use part of the * forty-four talents of gold, which were to have been used in the statue of Minerva. Pericles had foreseen what would happen, and by his advice Phidias had used the gold in his Minerva in such a manner, that it could easily be taken out and weighed. It was weighed accordingly, and to the accuser's shame found to amount to the forty-four talents. Phidias, who plainly saw that his innocence would not secure him against the malignant jealousy of those who envied him, and the intrigues of Pericles's enemies, who had hatched this affair against him, withdrew privately to Elis.

Plut. in
Pericl.
P. 169.

He there conceived thoughts of avenging himself upon the injustice and ingratitude of the Athenians, in a manner pardonable and allowable in an artist, if ever revenge could be so: which was by employing his whole industry in making a statue for the Eleans, that might eclipse his Minerva, which the Athenians looked upon as his masterpiece. This he effected. His Jupiter Olympius

* In supposing the proportion of gold to silver as ten to one, forty-four talents of gold amounted to four hundred and forty talents, that is to say, to one million three hundred and twenty thousand livres, something less than sixty thousand pounds sterling.

Lucian in
imaginib.
p. 31.

was a prodigy of art, and so perfectly such, that, to set a just value upon it, it was thought that it deserved to be ranked amongst the seven wonders of the world. Nor had he forgot any thing that might conduce to its perfection. Before he had entirely finished it, he exposed it to the view and judgment of the public, hiding himself in a corner, from whence he overheard all that was said of it. One thought the nose too thick, another the face too long; and different persons found different faults. He made the best use he could of all the criticisms that seemed to have any just foundation; convinced, says Lucian, who relates this fact, that many eyes see better than one. An excellent reflection in every kind of work!

Plin. 1. 34.
c. 8.

Quintil.
1. 12. c. 10.

Val. Max.
1. 3. c. 7.

Pausan.
1. 5. p. 303.

This statue of gold and ivory, sixty feet high, and of a proportionate magnitude, made all succeeding statuaries despair. None of them had the presumption only to imagine that they could imitate it: *Præter Jovem Olympium, quem nemo æmulatur*, says Pliny. According to Quintilian, the majesty of the work equalled that of the god, and even added to the religion of all who saw it: *Ejus pulcritudo adjecisse aliquid etiam receptæ religioni videtur, ad cõ majestas operis deum æquavit*. Those who beheld it, were struck with astonishment, and asked whether the god had descended from heaven to shew himself to Phidias, or Phidias had been carried thither to contemplate the god. Phidias himself, upon being asked from whence he had taken his idea of his Jupiter Olympius, repeated the three fine verses of Homer, in which the poet represents the majesty of that god in the most sublime terms; thereby signifying that the genius of Homer had inspired him with it.

At the base of the statue was this inscription: PHIDIAS THE ATHENIAN, THE SON OF CHARMIDES, MADE ME. Jupiter seems here to glory in a manner that he is the work of Phidias, and to declare

declare so by this inscription; tacitly to reproach the Athenians with their vicious delicacy, in not suffering that excellent artist to annex his name or portrait to the statue of Minerva.

Pausanias, who had seen and carefully examined this statue of Jupiter Olympus, has left us a very long and very fine description of it. The Abbé Gearyn has inserted it in his dissertation upon Phidias, which he has read in the academy of inscriptions, and was pleased to communicate to me. I have made use of it in what I have related of this famous statuary.

The statue of Jupiter Olympius raised the glory of Phidias to its highest degree, and established him a reputation, which two thousand years have not obliterated. He finished his labours with this great master-piece. The shop where he worked was preserved long after his death, and travellers used to visit it out of curiosity. The Eleans, in honour of his memory, instituted an office in favour of his descendants, the whole duty of which consisted in keeping this magnificent statue clean, and in preserving it from whatever might sully its beauty. Paus. l. 5.
P. 313.

P O L Y C L E T U S .

Polycletus was of Sicyone, a city of Peloponnesus, and lived in the 87th olympiad. Ageladus was his master, and several very famous sculptors his disciples, of which number was Myron, of whom we shall soon speak. He made several statues of brass, which were highly esteemed. One of them represented a beautiful young man, with a crown on his head, which was sold for an hundred talents, that is, an hundred thousand crowns. But what gave him the most reputation was the * statue of Plin. l. 34.
c. 8.
A. M.
3771.

* Fecit & quem canona artifices vocant, lineamenta artis ex eo etentes velut a lege quadam, solusque hominum artem ipse fecisse tunc opere judicatur. *Plin.*

a* Doryphorus, in which all the proportions of the human body were so happily united, that it was called *the Rule*; and the sculptors came from all parts, to form in themselves, by studying this statue, a just idea of what they had to do, in order to excel in their art. † Polycletus is universally admitted to have carried the art of sculpture to its highest perfection, as Phidias is for having been the first to place it in honour,

Ælian.

l. 14. c. 8.

Whilst he was at work upon a statue, by order of the people, he had the complaisance to hearken to all the advice they thought fit to give him, to retouch his work, and to change and correct in whatever displeas'd the Athenians. But he made another in private, in which he followed only his own genius, and the rules of art. When they were expos'd together to the view of the public, the people were unanimous in condemning the first and admiring the other. *What you condemn, say Polycletus to them, is your work; what you admire is mine.*

MYRON.

Little is known of this statuary. He was an Athenian, or at least pass'd for one, because the inhabitants of Eleutheria, the place of his nativity had taken refuge at Athens, and were regarded as citizens of it. He lived in the 84th olympiad. His works rendered him very famous, especially the cow, which he made in brass, and which gave occasion for abundance of fine Greek epigrams, inserted in the fourth book of the Anthologia, (*Flo rilega.*)

A. M.

3560.

LYSIPPUS.

Plin. l. 34.

c. 8.

A. M.

3676.

Lysippus was a Sicyonian, and lived in the time of Alexander the Great, in the 113th olympiad

* *So the guards of the king of Persia were called.*

† *Hic consummâsse hanc scientiam judicatur, & toreuticen sic eruditisse, ut Phidias aperuisse. Plin.*

He followed at first the business of a locksmith; but his happy genius soon induced him to take up a profession more noble and more worthy of him. He used to say, * that the Doryphorus of Polycletus had served him instead of a master. But the painter Eupompus directed him to a much better and more certain guide. For † upon Lysippus's asking him, which of his predecessors in the art of sculpture it was best to propose to himself as a model and master; *no man in particular*, replied he, *but nature herself*. He afterwards studied her solely, and made great improvements from her lessons.

He worked with so much ease, that, of all the artists, none made so great a number of statues as himself; they are said to amount to six hundred.

He made, amongst others, the statue of a man, rubbing himself after bathing, of exquisite beauty. Agrippa set it up in Rome before his baths. ‡ Tiberius, who was charmed with it, having attained the empire, could not resist his desire to possess it, though in the first years of his reign, in which he was sufficiently master of himself to moderate his passions: so that he removed the statue into his own chamber, and caused another very fine one to be put up in the same place. The people, who feared Tiberius, could not however refrain from crying out in the full theatre, that they desired the statue might be replaced: with which the emperor, now fond soever he was of the statue, was obliged to comply, in order to appease the tumult.

Lysippus had made several statues of Alexander, according to his several ages, having begun at his

* Polycleti Doryphorum sibi Lysippus aiebat magistrum fuisse, *Cic. in Brut. n. 296.*

† Eum interrogatum quem sequeretur præcedentium, dixisse, demonstrata hominum multitudine, naturam ipsam imitandam esse, non artificem. *Plin.*

‡ Minè gratum Tiberio principi, qui non quivit temperare sibi in eo, quanquam imperiosus sui inter initia principatus, transkultiq; in cubiculum, alio ibi signo substituto. *Plin.*

infancy.

infancy. * It is well known, that prince had for bad all statuaries but Lyfippus to make his statue as he had done all painters but Apelles to draw his picture; † rightly judging, says Cicero, that the skill of those two great masters, in perpetuating their own names, would also immortalize his: for it was not to please them he published that edict, but with a view to his own glory.

Amongst these statues, there was one of exquisite beauty, upon which Nero set an high value and was particularly fond of. But, as it was only of copper, ‡ that prince, who had no taste, and was struck with nothing but glare, thought fit to have it gilt. This new decoration, as costly as it was, made it lose all its value, by covering the delicacy of the art. All this gaudy supplement was obliged to be taken off, by which means the statue recovered part of its original beauty and value, notwithstanding the traces and scars the putting on and taking off the gold had left upon it. In the bad taste of Nero methinks I see that of some people, who industriously substitute the tinsel of conceits and wit-ticisms to the precious and inestimable simplicity of the antients.

Lyfippus is said to have added much to the perfection of statuary, in expressing the hair better than those who preceded him, and in making the heads less, and the bodies not so large, in order to make the statues seem higher. || Upon which Ly-

* Edicto vetuit nequis sibi præter Apellem pingeret, aut alium Lyfippo duceret æra fortis Alexandri vultum simulantia. *Hor. l. 2. Epist. ad Aug.*

† Neque enim Alexander gratiæ causâ ab Apelle potissimum pingi, & a Lyfippo fingi volebat, sed quod illorum artem cum ipse, tum etiam sibi, gloriæ fore putabat. *Cic. ad famil. l. 5. Epist. 12.*

‡ Quam statuam inaurari iussit Nero princeps, delectatus admodum illa. Dein, cum pretio perisset gratia artis, detractum est aurum; pretiosiorque talis existimatur, etiam circatricibus operis atque conficiuntur, in quibus aurum hæserat, remanentibus. *Plin.*

|| Vulgo dicebat ab illis (veteribus) factos, quales essent homines; a se quales viderentur esse.

ppus said of himself, *that others represented men in their statues as they were; but he, as they appeared;* that is to say, if I mistake not, in the manner that was most proper to make them appear with all their beauty. The chief point in sculpture, as well as in painting, is to follow and imitate nature: Polydorus, we see, made it his guide and rule. But art does not stop there. Without ever departing from nature, it throws in strokes and graces, which do not change, but only embellish, and catch the eye in a more lively and agreeable manner. * Demetrius, otherwise an excellent statuary, was reproached with confining himself too scrupulously to truth, and for being more studious of likeness than beauty in his works. This Polydorus avoided.

PRAXITELES.

Praxiteles lived in the 104th olympiad. We A.M. must not confound him with another Praxiteles, 3640. who made himself famous in the time of Pompey, by excellent works in the goldsmith's art. He we speak of is of the first rank among the statuaries. He worked chiefly in marble, and with extraordinary success.

Amongst the great number of statues made by Pausan. him, it would have been hard to know which to l. 1. p. 34. prefer, unless himself had informed us: which he does in a manner that has something singular enough in it. Phryne, the celebrated courtesan, was much in his favour. She had often pressed him to make her a present of one of the best of his works, and that which he believed the most finished; and he could not refuse it. But, when he was to judge which it was, he deferred doing so from day to day; whether he found it difficult to determine

* Demetrius tanquam nimius in ea (veritate) reprehenditur; & vitæ similitudinis quam pulchritudinis amantior. *Quintil.* l. 1. c. 10.
him-

himself, or rather strove to evade her warm and earnest solicitations, by protracting the affair. Persons of Phryne's profession seldom want industry and address. She found a means to get the secret out of Praxiteles, in spite of himself. One day when he was with her, she made his own servant, whom she had gained to her purpose, come running to tell him: "Your workhouse is on fire, and part of your works already spoiled: Which of them shall I save?" The master, quite out of his senses, cried out, "I am ruined and undone, if the flames have not spared my satyr and my Cupid. Be in no pain, Praxiteles, resumed Phryne immediately, there is nothing burnt: but now I know what I wanted." Praxiteles could hold out no longer. She chose the Cupid, which she afterwards set up at Thespiæ, a city of Bœotia, where she was born, and whither people went long after to see it out of curiosity. When Mummius took several statues from Thespiæ to send them to Rome, he paid some regard to this, because consecrated to a god. The Cupid of Verres, mentioned by Cicero, was also done by Praxiteles, though not the same with this.

It is undoubtedly of the first that mention is made in Mr. de Thou's memoirs. The fact is very curious, wherefore I shall transcribe it as related there: Mr. de Thou, when young, went into Italy with Mr. de Foix, whom the court sent thither. They were then at Pavia. Amongst other rarities which Isabella of Este, the duke of Mantua's grandmother, had disposed with great care and order, in a magnificent cabinet, Mr. de Thou was shewn an admirable piece of sculpture; this was a Cupid sleeping, made of the fine marble of Spezzia, by the celebrated Michael Angelo Buonarotti, who revived the arts of painting, sculpture, and architecture, which had long been neglected before him. De Foix, upon the account given him of this master-

*Upon the
coast of
Genoa.*

ster-

er-piece, went to see it. All his train, and De Thou himself, who had a very exquisite taste for works of this kind, after having attentively considered it on all sides, declared unanimously, that it was infinitely above all praise that could be given it.

When they had admired it for some time, another Cupid was shewn them, that had been wrapped up in a piece of silk. This monument of antiquity, such as the many epigrams written by Greece * of old in its praise represent it, was still soiled with the earth out of which it had been taken. Upon comparing the one with the other, the whole company were ashamed of having judged so much to the advantage of the first, and agreed that the ancient Cupid seemed instinct with life, and the modern a mere block of marble, without expression: some persons of the house then assured them, that Michael Angelo, who was more sincere than great artists generally are, had earnestly requested the Countess Isabella, after having made her a present of his Cupid, and seen the other, that the ancient should be shewn last; that the connoisseurs might judge, on seeing them both, how much the ancients excelled the moderns in works of this kind.

But the most judicious are sometimes mistaken, the same Michael Angelo himself has given us proof. Having made the figure of a Cupid, he carried it to Rome; and, having broken off one of his arms, which he kept, he buried the rest in a place which he knew was to be dug. This figure being found, it was admired by the connoisseurs, and sold for an antique to the cardinal San Gregorio. Michael Angelo soon undeceived them, producing the arm he had kept. There is nothing very extraordinary in having ability

There are two and twenty epigrams upon this Cupid in the fourth book of the Anthologia.

enough to imitate the antients so perfectly, as to deceive the eyes of the best judges; and at the same time so much modesty, as to confess ingenuously great superiority on their side, as we see Michael Angelo did.

Something like this is related on a different occasion. Joseph Scaliger, the most learned critic of his times, boasted that it was impossible for him to be deceived in regard to the stile of the antient. Six verses were sent abroad as lately discovered they are,

*Here, si querelis; ejulatu, fletibus,
Medicina feret miseris mortalium,
Auro parandæ lacrymæ contra forent.
Nunc hæc ad minuenda mala non magis valent,
Quam Næmia Præficæ ad excitandos mortuos.
Res turbidæ consilium non fletum expetunt.*

These verses, which are admirable, and have all the air of antiquity, deceived Scaliger so effectually, that he cited them in his commentary upon Varro, as a fragment from Trabea, not long since discovered in an antient manuscript. Trabea was a comic poet, and lived six hundred years after the foundation of Rome. They were, however, made up by Muretus, who played Scaliger, his rival and competitor, this trick.

Athen.

l. 13. p. 591.

We may believe that Praxiteles, abandoned as he was to Phryne, did not fail to employ the work of his hands for her, who had made herself the mistress of his heart. One of Phryne's statues was placed afterwards in Delphos itself, between those of Archidamus, king of Sparta, and Philip king of Macedon. How infamous this! If riches were a title to a place in that temple, she might well pretend to it: for her's were immense. She had the impudence (for by what other name can I call the fact I am going to relate?) to engage to rebuild

rebuild the city of Thebes at her own expence, provided this inscription were placed on it: ALEXANDER DESTROYED, AND PHRYNE REBUILT THEBES.

The inhabitants of the isle of Cos had demanded a statue of Venus from Praxiteles. He made two, of which he gave them their choice at the same price. The one was naked, the other covered; but the first was infinitely the most beautiful: *immensa differentia famæ*. The people of Cos had the wisdom to give the preference to the latter; convinced that decency, politeness, and modesty, did not admit them to introduce an image into their city, that might be of infinite prejudice to their manners: *Severum id ac pudicum arbitantes*. How many Christians does this chaste conduct disgrace? The Cnidians were less attentive in point of morals. They bought the rejected Venus with joy, which afterwards became the glory of their city; whither people went from remote parts to see that statue, which was deemed the most finished work of Praxiteles. Nicomedes, king of Bithynia, set so high a value upon it, that he offered to release all the debts the Cnidians owed him, which were very considerable, provided they would give it him. They thought it would dishonour and even impoverish them to sell for any price whatsoever a statue, which they considered as their glory and riches.

S C O P A S .

Scopas was both an excellent architect, and an excellent sculptor. He was of the island of Paros, and flourished in the 87th olympiad. Amongst all his works, his Venus held the first rank. It was even pretended, that it was superior to the so much renowned one of Praxiteles. It was carried to

Rome: * but, says Pliny, the number and excellency of the works, which abound in this city, obscure its lustre; besides which, the employments and affairs, that engross people here, scarce afford them time to amuse themselves with these curiosities; to consider and admire the beauties of which requires persons of leisure, and such as have no business, as well as places quiet and remote from noise.

Plin. l. 36. I have observed elsewhere, that the pillar, which he made for the temple of Diana at Ephesus, was reputed the finest in that building.

Ibid. c. 5. He also very much contributed to the beauty and ornament of the famous Mausolæum, erected by queen Artemisia, to the memory of her husband Mausolus, in the city of Halicarnassus, which was reckoned one of the seven wonders of the world, as well for its magnitude and loftiness of architecture, as the quantity and excellence of the works of sculpture, with which it was enriched. Several illustrious competitors divided the glory of this structure with Scopas. I purposely referred to this place the description Pliny has left of us part of this superb pile, because it relates more to sculpture than architecture.

The extent of this Mausolæum was sixty-three feet from north to south. The fronts not quite so broad, and the circumference † four hundred and eleven feet. It was thirty six feet and an half high, and had thirty-six pillars around it. Scopas undertook the east side, Timotheus had the south, Leocharis the west, and Briaxis the north. These

* Romæ quidem magnitudo operum eam (Venerem) obliterat, ac magni officiorum negotiorumq; acervi omnes a contemplatione tallium operum abducunt, quoniam otiosorum & in magno loci silentis apta admiratio talis est. Plin.

† There was apparently a wall round the Mausolæum, and some void space between it and that wall; which seems necessary to make up the extent of the circumference mentioned here.

were the most famous sculptors of those times. Artemisia died before they had finished the work: but they believed it not for their honour to leave it imperfect. It is doubted to this day, says Pliny, which of the four succeeded best: *Hodieque certant manus*. Pythis joined them, and added a pyramid to the top of the Mausolæum, upon which he placed a chariot of marble drawn by four horses. Anaxagoras of Clazomena said coldly when he saw it: *Here's a great deal of money turned into stone.*

Diog.
Laert. in
Anaxag.
Plin. l. 34.
c. 8.

I ought not to conclude this article, without mentioning a very singular dispute, in which two of the most celebrated statuaries I have spoken of were engaged, even after their deaths: these were Phidias and Polycletus. I have observed above, that the temple of Diana at Ephesus was not finished till after a long series of years. The question was, at a time Pliny does not fix, to place in it some statues of Amazons, very probably to the number of four. Several had been done by the greatest masters both dead and living. The majesty of the temple required, that none should be admitted which were not exquisitely finished. It was necessary, upon this occasion, to consult the most accomplished sculptors in being, how interested soever they might be in the dispute: Each gave himself the first place, and afterwards named those they believed to have succeeded best; and it was the sculptors who had the majority of these latter suffrages, that were declared victorious. Polycletus had the first place, Phidias the second, and Nestilas and Cylon the two others. Something of the same nature had happened long before, but on a different occasion. After the battle of Salamis, the Grecian captains, according to a custom observed in those times, were to set down on a paper in which they believed to have distinguished himself most in the action. Each named himself first, and Themis-

Plut. in
Themist.
p. 120.

tocles second; which was in reality giving him the first place.

Florem
hominum
libantibus.

Cic. in
Verr. de
sign. n.
125, 127.

Plin. l. 34.
c. 8.

Ibid. l. 36.
c. 5.

Æneid.
l. 2.

It is plain, that, in the short enumeration I have made of the antient statuaries, I have chosen only the very flower of the most famous. There are many others, and of great reputation, which I am obliged to omit, to avoid enlarging my work too much. Cicero highly extols the statue of Sappho in copper, done by the celebrated statuary Silanion. Nothing was more perfect than this statue: Verres had taken it from the Prytanæum of Syracuse. Pliny relates, that the same Silanion had cast the statue of Apollodorus, his brother sculptor, in brass, who was a passionate man, and violent against himself; and who often, in the heat of his disgust, broke his own works to pieces, because he could not carry them to that supreme degree of perfection, of which he had the idea in his thoughts. Silanion represented this furious humour in so lively a manner, that it did not seem so much to express Apollodorus, as rage itself in person: *Hoc in eo expressit, nec hominem ex ære fecit, sed iracundiam.*

The same Pliny also very much extols a Laocoon, which was in the palace of Titus, and gives it the preference to all other works of painting and sculpture. Three excellent artists, Agesander, Polydorus, and Athenodorus, Rhodians, had joined in executing it, and had made out of one stone Laocoon, his children, and the serpents in all their different folds. The work must have been admirable, if equal to the beautiful description of this fact in Virgil, or indeed if it came near it.

It remains for me to draw the character of those illustrious artists who excelled so much in representing the gods and men naturally. I shall do it after Quintilian and Cicero, two admirable painters of characters and portraits, but who generally cannot be copied without being spoiled.

The first having enumerated the different manners in painting, he continues thus: There is the same difference also in sculpture. For the first statuary of whom we have any account, Calon and Egeſias, worked in a rude manner, and almost in the Tuscan taste. Calamis came next, and his works had less constraint in them. Those of Myron afterwards had still a more natural and easy air. Polycletus added regularity and gracefulness to them. The first place is generally given to him: however, as there is nothing entirely perfect, his statues are said to want a little more force. And indeed he represented men with infinite graces, and better than they are: but he did not entirely come up to the majesty of the gods. It is even said, that the manly age confounded his skilful hands, for which reason he scarce ever expressed any thing but tender youth. But what Polycletus wanted fell to the share of Phidias and Alcamenes. However, Phidias was judged to have represented the gods better than men. Never did an artist use ivory with so much success; if we only consider his Minerva of Athens, and his Jupiter Olympius, the beauty of which seemed to improve the religion of the beholders, so much did the work express the majesty of the god. Lysippus and Praxiteles were reckoned to have copied nature best. For, as to Demetrius, he is blamed for having carried that care to excess, and for having confined himself more to resemblance than beauty.

The passage of Cicero is shorter, in which he also mentions several of the antients very little known. I observe, says he, that Canachus, in his statues, has something dry and rude. Calamis, rude as he is, has not so much of that character as Canachus. Myron does not come near enough to the just, though, strictly speaking, whatever comes from his hands is fine. Polycletus is much above them all, and in my opinion has attained perfection.

Cic. in
Brut.n.70.

I have already observed more than once, that sculpture is indebted to Greece for the supreme perfection to which it attained. The grandeur of Rome, which was to erect itself upon the ruins of that of Alexander's successors, long retained the rustic simplicity of its dictators and consuls, who neither esteemed, nor practised, any arts but those which were subservient to war, and the occasion of life. They did not begin to have a taste for statues, and the other works of sculpture, till after Marcellus, Scipio, Flaminius, Paulus Emilius, and Mummius, had exposed to the view of the Romans whatever Syracuse, Asia, Macedonia, Corinth, Achaia, and Bœotia, had of most excellent in the works of art. Rome saw with admiration the paintings and sculptures in brass and marble, with all that serves for the ornament of temples and public places. The people piqued themselves upon studying their beauties, discerning their excellencies, and knowing their value; and this kind of science became a new merit, but at the same time the occasion of an abuse fatal to the republic. We have seen that Mummius, after the taking of Corinth, in directing the persons who had undertaken the carriage of a great number of statues and paintings of the greatest masters to Rome, threatened them, if they lost or spoiled any of them upon the way, that they should make them good at their own costs and charges. Is not this * gross ignorance, says an historian, infinitely preferable to the pretended knowledge which soon succeeded it? Strange weakness of human nature! Is innocence then inseparable from ignorance, and cannot knowledge, and a taste estimable in itself, be attained,

* Non, puto dubites, Vinici, quin magis pro rep. fuerit, manere adhuc rudem Corinthiorum intellectum, quam in tantum ea intelligi; & quin hac prudentiâ illa imprudentia decori publico fuerit convenientior. *Vell. Patere.* l. 1. c. 23.

without the manners suffering thereby through an abuse, which sometimes, though unjustly, reflects reproach and disgrace upon the arts themselves?

This new taste for extraordinary pieces was soon carried to an excess. They seemed to contend, who should adorn their houses in town and country with most magnificence. The government of conquered countries supplied them with occasions of doing this. As long as their manners remained uncorrupt, the governors were not permitted to purchase any thing from the people they were set over; because, says Cicero, when the seller is not at liberty to sell things at the price they are worth, it is not a sale on his side, but a violence done to him: *Quod putabant ereptionem esse, non emptionem, cum venditori suo arbitrato vendere non liceret.* It is well known, * that these wonders of art, performed by the greatest masters, were very often without price. Nor indeed have they any other, than what the imagination, passion, and, to use Seneca's expression, the † phrensy of certain people set upon them. The governors of provinces bought what was highly esteemed for little or nothing: and these were very moderate; for most of them made their collections by force and violence.

History gives us instances of this in the person of Verres, prætor of Sicily, who was not the only one that acted in this manner. He indeed carried his impudence in this point to an inconceivable excess, which Cicero § knew not by what term to express: passion, phrensy, folly, robbery! He could find

* Qui modus est in his rebus cupiditatis, idem est æstimationis. Difficile est enim finem facere pretio, nisi libidini feceris. *Verr. de sign. n. 14.*

† Corinthiæ paucorum furore pretiosa. *De brev. vit. c. 12.*

§ Venio nunc ad istius, quemadmodum ipse appellat, studium; ut amici ejus, morbum & insaniam; ut Siculi, latrocinium. Ego, quo nomine appellem, nescio. *Ibid. n. 1.*

no name strong enough to convey the idea of it. Neither decency, sense of honour, nor fear of the laws, could restrain him. He reckoned himself in Sicily as in a conquered country. No statue, great or small, of any value or reputation, escaped his rapacious hands. In a word, * Cicero affirms, that the curiosity of Verres had cost Syracuse more gods, than the victory of Marcellus had cost it men.

* Sic habetote, plures esse a Syracusanis istius adventu deos, quam victoria Marcelli homines, desideratos. *Ibid.* n. 131.

CHAPTER V.
OF PAINTING,
ARTICLE I.

Of painting in general.

SECT. I.

Origin of painting.

PAINTING, like all other arts, was very Plin. 1. 35.
gross and imperfect in its beginnings. The c. 3.
shadow of a man marked by the outlines gave
birth to it, as well as to sculpture. The first man-
ner of painting therefore derived its origin from a
shadow, and consisted only in some strokes, which
multiplying by degrees formed design. Colour was
afterwards added. There was no more than one
at first in each draught, without any mixture;
which manner of painting was called *Monochromaton*,
that is to say, of one colour. The art at length
improving every day, the mixture of only four
colours was introduced: of which we shall speak
in its place.

I do not examine here the antiquity of painting.
The Egyptians boast themselves the inventors of it;
which is very possible: but it was not they who
placed it in honour and estimation. Pliny, in his
long enumeration of excellent artists in every kind,
and of master-pieces of art, does not mention one
Egyptian. It was therefore in Greece, whether at
Corinth, Sicyone, Athens, or in the other cities,
that painting attained its perfection. It is believed Plin. ibid.
to be of later date than sculpture, because Homer,
who

who often speaks of statues, relievos, and carved works, never mentions any piece of painting or portrait.

These two arts have many things common to both of them, but attain their end, which is the imitation of nature, by different means: Sculpture by moulding substances; Painting by laying colours upon a flat superficies; and it must be confessed, that the chissel, in the hands of a man of genius, affects almost as much as the pencil. But, without pretending to establish the precedency between these two arts, or to give one the preference to the other, how wonderful is it to see, that the artist's hand, by the strokes of a chissel, can animate marble and brass, and, by running over a canvas with a pencil and colours, imitate by lines, lights, and shades, all the objects of nature! If * Phidias forms the image of Jove, says Seneca, the god seems about to dart his thunder: if he represents Minerva, one would say that she was going to instruct the beholders, and that the goddess of wisdom was only silent out of modesty. Charming delusion, grateful imposture, which deceive without inducing error, and illude the senses only to enlighten the soul!

* Non vidit Phidias Jovem, fecit tamen velut tonantem: nec tetit ante oculos ejus Minerva, dignus tamen illa arte animus, & concepit deos, & exhibuit. *Senec. Controuv.* l. 5. c. 34.

Verecundè admodum silent, ut hinc responsuras paulo minus voces præstoleris. *Laſtant.*

S E C T. II.

Of the different parts of painting. Of the first in painting.

PAINTING is an art, which by lines and colours represents upon a smooth and even surface all visible objects. The image it gives of them, whether of many figures together, or only of one, is called a picture, in which three things are to be considered, the COMPOSITION, the DESIGN, and the COLORIS, or COLOURING; which are the three essential parts in forming a good painter.

I. COMPOSITION, which is the first part of painting, consists of two things, invention and disposition.

Invention is the choice of the objects, which are to enter into the composition of the subject, the painter intends to treat on. It is either simply historical, or allegorical. Historical invention is the choice of objects, which simply and of themselves represent the subject. It takes in not only true or fabulous history, but includes the portraits of persons, the representation of countries, and all the productions of art and nature. Allegorical invention is the choice of objects to represent in a picture, either in whole or in part, something different from what they are in reality. Such, for instance, was the picture of Apelles, that represented calumny, which Lucian has described in a passage I shall repeat in the sequel. Such was the moral piece representing Hercules between Venus and Minerva, in which those Pagan divinities are only introduced, to imply the attractions of pleasure opposed to those of virtue.

Disposition very much contributes to the perfection and value of a piece of painting. For, how advantageous soever the subject may be, the invention

tion however ingenious, and the imitation of the objects chosen by the painter however just, if they are not well disposed, the work will not be generally approved. *Œconomy* and good order gives the whole its best effect, attracts the attention, and engages the mind, by an elegant and prudent disposition of all the figures into their natural places. And this *œconomy* and distribution is called *disposition*.

2. The *DESIGN*, considered as a part of painting, is taken for the outlines of objects, for the measures and proportions of exterior forms. It regards painters, sculptors, architects, engravers, and all artists in general, whose works require beauty and proportion.

Several things are considered in the design: *Correctness*, good taste, elegance, character, diversity, expression, and perspective. My design is to treat on the principles of painting only so far as they may be necessary to the reader's understanding what I shall relate of the painting of the antients, and to his judging of it with some discernment and propriety.

Correctness is a term by which the painters generally express the condition of a design, when exempt from faults in its measures. This correctness depends upon the justness of proportions, and the knowledge of anatomy.

Taste is an idea either proceeding from the natural genius of the painter, or formed in him by education. Each school has its peculiar taste of design; and, since the revival of the polite arts in Europe, that of Rome has always been esteemed the best, becaused formed upon the antique. The antique is therefore the best taste of design.

Elegance of design is a manner of being that embellishes without destroying the justness of objects. This part, which is of great importance, will be treated on more at large in the sequel.

Character is the proper and peculiar mark that distinguishes and characterises every species of objects, which all require different strokes to express the spirit of their character.

Diversity consists in giving every person in a picture their proper air and attitude. The skilful painter has the penetration to discern the character of nature, which varies in all men. Hence the countenances and gestures of the persons he paints continually vary. A great painter, for instance, has an infinity of different joys and sorrows, which he knows how to diversify still more by the ages, humours, and characters of nations and persons, and a thousand other different means. The most worn-out subject becomes a new one under his pencil.

The word *Expression* is generally confounded in the language of painting with that of *Passion*. They are however different. *Expression* is a general term, which signifies the representation of an object according to its character in nature, and the use the painter designs to make of it in conformity to the plan of his work. And *Passion*, in painting, is a certain gesture of the body attended with lineaments of the face, which together denote an emotion of the soul. So that every passion is an expression, but not every expression a passion.

Perspective is the art of representing the objects in a plan, according to the difference their distance may occasion, either with respect to figure or colour. Perspective therefore is distinguished into two sorts, the lineal and the aerial. The lineal perspective consists in the just contraction or abridgment of lines; the aerial in the just decrease or gradation of colours. This *gradual decrease*, in painting, is the management of the strong and faint, in lights, shades, and tints, according to the different degrees of distance or remoteness. Mr. Perrault, out of a blind zeal for the moderns, pretended, that per-
spective

*Memoirs of
the Acad.
of Inscript.
Vol. VIII.*

spective was absolutely unknown to the antients; and founded his opinion upon the want of perspective in the column of Trajan. The Abbé Salier, in a brief but elegant dissertation upon this subject, proves in many passages, that Perspective was not unknown to the antients, and that it was this industrious artifice, which taught them to impose so happily on the senses in their performances, by the modification of magnitudes, figures, and colours, of which they knew how to increase or diminish the boldness and lustre. As to the column of Trajan, if Perspective be not exactly observed in it, it is not through ignorance of the rules of art, but because the greatest masters depart from, and even set themselves above, all rule, for the more certain attainment of their end. Mr. de Piles owns, that the defect of gradual decrease or gradation in that pillar is to be ascribed solely to the workman's design, who, superior to the rules of his art, to assist the sight, purposely made the objects stronger and more palpable.

3. The **COLORIS**, or **COLOURING**, is different from colour. The latter renders the objects sensible to the eye. The coloris, or colouring, is one of the essential parts of painting, by which the painter knows how to imitate the colour of all natural objects, by a judicious mixture of the simple colours upon his pallet. This is a very important part. It teaches the manner in which colours are to be used; for producing those fine effects of the *Chiaro-oscuro* (*light and shade*;) which add boldness and a kind of relief to the figures, and shew the remoter objects in their just light.

Pliny explains it with sufficient extent. After having spoken of the very simple and gross beginnings of painting, he adds, * that, by the help of time

* Tandem se ars ipsa distinxit & invenit lumen atque umbras, differentia colorum alterna vice sese excitante: postea deinde adjecit est SPLENDOR, alius hic quàm lumen; quem, quia inter hoc & umbram esset, appellaverunt *Tóvos*. *Plin.* l. 35. c. 5.

and experience, it gradually threw off its defects: that it discovered light and shade with the difference of the colours which set off each other; and that it made use of the Chiaro-oscuro, the shadowing, as the most exquisite degree and perfection of the colouris. For this chiaro-oscuro (light and shade, or shadowing,) is not properly light, but the mean between the lights and shades in the composition of a subject. And from thence the Greeks called it Tonos, that is, the tone of painting: to signify, that as in music, there are a thousand different tones, from the insensible union of which the harmony results; so in painting, there is an almost imperceptible force and gradation of light, which still vary, according to the different objects upon which they fall. It is by this enchanting distribution of lights and shades, and, if I may be allowed to say it, by the delusion of this kind of magic, that the painters impose upon the senses, and deceive the eyes of spectators. They employ with an art never to be sufficiently admired, all the various alloys or diminutions of colour gradually to soften and inforce the colour of objects. The progression of shade is not more exact in nature, than in their paintings.

It is this insinuating charm that strikes and attracts all mankind: the ignorant, the connoisseurs, and even painters themselves. It suffers no-body to pass by a painting that has this character with indifference, without being in a manner surpris'd, and without stopping to enjoy the pleasure of that surpris'd for some time. True painting therefore is that which in a manner calls us to it by surpris'd: it is only by the force of the effect it produces, that we cannot help going to it, as if to know something it had to say to us. And when we approach it, we really find that it delights us by the fine choice and novelty of the things it presents to our view; by the history and fable it makes us all to mind; and the ingenious inventions and allegories,

gories, of which we take pleasure either to discover the sense, or criticise the obscurity.

It does more, as Aristotle observes in his Poetics: Monsters, and dead or dying men, which we should be afraid to look upon, or should see with horror, we behold with pleasure imitated in the works of the painters. The better the likenesses, the sonder we are to gaze upon them. One would think, that the murder of the Innocents should leave the most offensive ideas in the imagination of those, who actually see the furious soldiers butchering infants in the bosoms of their mothers covered with their blood. Le Brun's picture, in which we see that tragical event represented, affects us sensibly, and softens the heart, whilst it leaves no painful idea in the mind. The painter afflicts us no more than we are pleased he should; and the grief he gives us, which is but superficial, vanishes with the painting: whereas, had we been struck with the real objects, we should not have been capable of giving bounds, either to the violence or duration of our sentiments.

But * what ought absolutely to reign in painting and constitutes its supreme excellency, is *the True*. Nothing is good, nothing pleases, but the True. All the arts, which have imitation for their object are solely intended to instruct and divert mankind by a faithful representation of nature. I shall insert here some reflections upon this subject, which I hope will be agreeable to the reader. I have extracted them from a little treatise of Mr. de Piles † upon *the True in painting*; and still more, from a letter of Mr. du Guet annexed to it, which was written to a lady, who had desired his opinion of the short tract.

* *Picturæ probari non debent quæ non sunt similes veritati. Vit.*
l. 7. c. 5.

† *M. de Piles Cours de Peinture. Paris edit.*

Of the True in painting.

Though painting is only an imitation, and the object in the picture but feigned, it is however called *True*, when it perfectly represents the character of its model.

The True in painting is distinguished into three kinds. The simple, the ideal, and the compound or perfect True.

The Simple, which is called the first True, is a simple imitation of the expressive movements (*or affections*) of nature, and of the objects, such as they really are and present themselves immediately to the eye, which the painter has chosen for his model: so that the carnations or naked parts of an human body appear to be real flesh, and the draperies real habits, according to their diversity, and each particular object retains the true character it has in nature.

The Ideal True is the choice of various perfections, which are never to be found in a single model, but are taken from several, and generally from the antique.

The third, or Compound True, which is compounded or formed of the simple and ideal True, constitutes in that union the highest excellency of the art, and the perfect imitation of the *Fine Nature*. Painters may be said to excel according to the degree in which they are masters of the first and second True, and the happy facility they have acquired of forming out of both a good composite or compound True.

This union reconciles two things which seem opposites: to imitate nature, and not confine one's self to that imitation; to add to its beauties, and yet correct it to express it the better.

The Simple True supplies the movements (*affections or passions*) and the life. The Ideal chuses

with art whatever may embellish it, and render it more striking; but does not depart from the Simple, which, though poor in certain parts, is rich in its whole.

If the second True does not suppose the first, if it suppresses or prevents it from making itself more sensible than any thing the second adds to it, the art departs from nature; it shews itself instead of her; it assumes her place instead of representing her; it deceives the expectation of the spectator and not his eyes; it apprises him of the snare, and does not know how to prepare it for him.

If, on the contrary, the first True, which has all the real of affection and life, but not always the dignity, exactness, and graces to be found elsewhere, remains without the support of the second True, which is always grand and perfect, it pleases only so far as it is agreeable and finished, and the picture loses every thing that was wanting in its model.

The use therefore of the second True consists in supplying in each subject what it had not, but what it might have had, and nature has dispersed in several others; and in thus uniting what she almost always divides.

This second True, strictly speaking, is almost as real as the first: for it invents nothing, but collects universally. It studies whatever can please, instruct, and affect. Nothing in it is the result of chance, even when it seems to be so. It determines by the design what it suffers to appear but once, and enriches itself with a thousand different beauties in order to be always regular, and to avoid falling into repetitions.

It is for this reason that the union of the Simple and Ideal True have so surprising an effect. For that union forms a perfect imitation of whatever is most animated, most affecting, and most perfect in nature.

All then is probable, because all is true: but all is surprizing, because all is curious and extraordinary. All makes impressiion, because all has been called in that was capable of doing so: but nothing appears forced or affected, because the natural has been chosen, in chusing the wonderful and the perfect.

It is this fine Probable, which often appears more true than truth itself: because in this union the first True strikes the spectator, avoids various defects, and exhibits itself without seeming to do so.

This third True is an end to which none ever attained. It can only be said, that those who have come nearest to it, have most excelled.

What I have said hitherto of the essential parts of painting, will facilitate the understanding of what I shall soon add of the painters themselves, in the brief account I shall give of them. The greatest masters agree, that there never was a painter who entirely excelled in all the parts of his art. Some are happy in Invention, others in the Design: some in the Coloris, others in Expression: and some paint with abundance of grace and beauty. No one ever possessed all these excellencies together. These talents, and many others which I omit, have always been divided: the most excellent painter is he who possesses the most of them.

To know the bent of nature is the most important concern. Men come into the world with a genius determined not only to a certain art; but to certain parts of that art, in which only they are capable of any eminent success. If they quit their sphere, they fall below even mediocrity in their profession. * Art adds much to natural endowments, but does not supply them where they are wanting. Every thing

* Ut verè dictum est caput esse artis, decere quod facias; ita id que sine arte esse, neque totum arte tradi potest. *Quintil. l. 11.*

depends on genius. The aptitude a man has received from nature to do certain things well and with ease, which others cannot do but very ill, though they take great pains, is called genius. * A painter often pleases without observing rules; whilst another displeases, though he does observe them, because the latter has not the happiness to be born with a genius. This genius is that fire which exalts painters above themselves, imparts a kind of soul to their figures, and is to them what is called spirit, rapture, or enthusiasm in poetry.

For the rest, though a painter does not excel in all the parts of his art, it does not follow, that most of the works of the great masters should not be considered as perfect in their kind, according to the measure of perfection of which human weakness is capable. The certain proof of their excellency is the sudden impression they make alike upon all spectators, ignorant and skilful; with this sole difference, † that the first only feel pleasure in seeing them, and the latter know why they are pleased. In regard to works of poetry or painting, the impression they have upon us is a judgment not to be despised. We weep at a tragedy, or at the sight of a picture, before we reflect whether the object exhibited by the poet or painter be capable of moving us or well imitated. The impression has told us that before we think of such an inquiry. The same instinct, which at first sight would draw a sigh from us, on meeting a mother following her son to the grave, has a like effect, when the stage or a painting shews us a faithful representation of a like event. The ‡ public therefore is capable of judging aright

* In quibusdam virtutes non habent gratiam, in quibusdam virtutibus ipsi delectantur. *Quintil.* l. 11. c. 3.

† Docti rationem artis intelligunt, indocti voluptatem. *Quintil.* l. 9. c. 4.

‡ Illud ne quis admiretur quoniam modo hæc vulgus imperitorum notet, cum in omni genere tum in hoc ipso, magna quedam est virtus incredibilisq; nature. Omnes enim tacito quodam sensu, sine ul-

of verses and painting; because, as Cicero observes, all men, by the sense implanted in them by nature, know, without the help of rules, whether the productions of art be well or ill executed.

The reader will not be surpris'd that I make a parallel here between painting and poetry. All the world knows the saying of Simonides, *A picture is a silent poem, and a poem a speaking picture*. I do not examine, which of the two succeeds best in representing an object and painting an image. That question would carry me too far. It has been very well treated on by the author of the critical reflections upon poetry and painting, from whom I have borrowed many things on this point. I content myself with observing, that, as a picture which represents an action shews us only the instant of its duration, the painter cannot express many affecting circumstances, which precede or follow that instant, and still less make us sensible of the passions and discourse which very much exalt their spirit and force: whereas a poet has it in his power to do both at his leisure, and to give them their due extent.

It only remains for me, before I proceed to the history of the painters, to give a brief idea of the several species of painting.

S E C T. III.

Different species of painting.

BEFORE the secret of painting in oil was discovered, all the painters worked either in fresco or water-colours.

Fresco is a kind of painting upon fresh plaister with colours mixed with water. This work was done either upon walls or arched roofs. The painting in fresco, incorporating with the plaister, decayed and mouldered only with it. The walls of

ante aut ratiore, que sint in artibus ac rationibus recta ac prava iudicant. Cic. l. 3. de orat. n. 195.

the temple of the Dioscuri * at Athens has been painted in fresco by Polygnotus and Diognetus, during the Peloponnesian war. Pausanias observes, that these paintings had been well preserved to his time, that is, almost six hundred years after Polygnotus. The good painters, however, according to Pliny, seldom painted in fresco. They did not think it proper to confine their works to private houses, nor to leave their irretrievable master-pieces at the mercy of the flames. They fixed upon portable pieces, which, in case of accident, might be saved from the fire, by being carried from place to place. † All the monuments of those great painters, in a manner, kept guard in palaces, temples, and cities, in order to be ready to quit them upon the first alarm; and a great painter, to speak properly, was a common and public treasure to which all the world had a right.

Painting in water-colours is a kind performed with colours, diluted only with water, and size, or gum.

The invention of *painting in oil* was not known to the antients. It was a Flemish painter, named John Van Eyck, but better known by the name of John of Bruges, who discovered this secret, and used it in the fifteenth century. This invention, which had been so long unknown, consists, however, only in grinding the colours with oil of walnuts or linseed. It has been of great service to painting, because all the colours, mingling better together, make the coloris or colouring more soft, delicate and agreeable; and give a smoothness and mellowness to the whole work, which it could not have in the other methods. Paintings in oil are done upon walls, wood, canvas, stones, and all sorts of metals.

* *Castor and Pollux were so called, because the sons of Jupiter.*

† *Omnis eorum ars urbibus excubabat, pictorque res communis terrarum erat.*

It is said * that the antient painters painted only upon tables of wood, whitened with chalk, from whence came the word *tabula*, a picture; and that even the use of canvas amongst the moderns is of no great standing.

Pliny, after having made a long enumeration of all the colours used in painting in his time, adds, "Upon the sight of so great a variety of colours, I cannot forbear admiring the wisdom and œconomy of the antients. For, with only † the four simple and primitive colours, the painters of antiquity executed their immortal works, which are to this day our admiration: the *white* of Melos, the *yellow* of Athens, the *red* of Sinope, and the common *black*. These are all they used, and yet it was with these four colours, well managed, that an Apelles and a Melanthus, the greatest painters that ever lived, produced those wonderful pieces, of which only one was of such value, that the whole wealth of a great city was scarce sufficient to purchase it." It is probable that their works would have been still more perfect, if to these four colours two more had been added, which are the most general and the most amiable in nature; the *blue*, which represents the heavens; and the *green*, which so agreeably cloaths and adorns the whole earth.

The antients had a manner of painting, much in use even in Pliny's time, which they called ‡ *Cæustic*. ¶ It was a kind of painting in wax, in which the pencil had little or no part. The whole art consisted in preparing wax of different colours, and in

* Nero princeps jussit colosseum se pingi 120 pedum in linteo, incognitum ad hoc tempus. *Plin.* l. 35. c. 7.

† Quatuor coloribus solis immortalia illa opera fecere—Apelles, Melanthius.—clarissimi pictores, cum tabulæ eorum singulæ oppidorum venirent opibus.

‡ This word is derived from *καίω*, which signifies to burn.

¶ *Ceris pingere, ac picturam inurere, quis primus excogitaverit, non censtat. Plin.*

applying them upon wood or ivory by the means of fire.

Miniature is a kind of painting done with simple and very fine colours, mixed with water and gum, without oil. It is distinguished from other paintings by its being more delicate, requiring a nearer view, not being easily performed except in little, and only upon vellum, or tablets of ivory.

Paintings upon glass are done in the same manner as upon jasper and other fine stones: but the best manner of executing it is by painting under the glass, that the colours may be seen through it. The art of incorporating the colours with the glass was known in former days, as may be seen at La Sainte Chapelle, (*our Lincoln's-Inn chapel,*) and in abundance of other Churches. This secret is said to be lost.

Enamel-painting. Enamel is a kind of glass coloured. Its principal substance is tin and lead in equal quantities, calcined in the fire; to which are added separately such metallic colours as it is to have. The painting and work performed with mineral colours, by the heat of the fire, is called also *Enamelling*. China, delft, and pots varnished or glazed with earth, are so many different kinds of *Enamel*. The use of *enamelling* upon earth is very antient, as vessels enamelled with various figures were made in the time and dominions of Porfenna king of the Tuscans.

Mosaic work is composed of many little pieces inlaid, and diversified with colours and figures cemented together upon a bottom of * plaister of Paris. At first compartments were made of it to adorn cielings and floors. The painters afterwards undertook to cover walls with it, and to make various figures, with which they adorned their temples and many other edifices. They used glass and enamel in these

* Or Stucco, a composition of lime and white marble powdered.

works, which they cut into an infinity of little pieces, of different sizes and colours: these, having an admirable lustre and polish, had all the effect at distance that could be desired, and endured the inclemencies of the weather, as well as marble. This work had the advantage, in this point, of every kind of painting, which time effaces and consumes; whereas it embellishes the Mosaic, which subsists so long, that its duration may almost be said to have no end. There are several fragments of the antique Mosaic to be seen at Rome, and in several other parts of Italy. We should form an ill judgment of the pencil of the antients, if we were to found it upon these works. It is impossible to imitate, with the stones and bits of glass used in this kind of painting, all the beauties and graces the pencil of an able master gives a picture.

ARTICLE II.

Brief history of the most famous painters of Greece.

I Propose to speak only in this place of the most celebrated painters, without examining who were the first that used the pencil. Pliny, in the eighth, ninth, and tenth chapters of the thirty-fifth book of his natural history, will supply me with a great part of what I have to say. I shall content myself with observing this once for all, and shall cite him but seldom any more.

PHIDIAS and PARENUS.

Phidias, who flourished in the 84th olympiad, A. M. 3560. was a painter before he was a sculptor. He painted at Athens the famous Pericles, surnamed the Olympic, from the majesty and thunders of his eloquence. I have spoken at large of Phidias in the article of sculpture. Parnus, his brother, distinguished him-
self

self also amongst the painters of his time. He painted the famous battle of Marathon, in which the Athenians defeated the whole army of the Persians in a pitched battle. The principal officers on both sides were represented in this piece as large as the life, and with exact likeness.

P O L Y G N O T U S .

A. M.
35⁸².

Polygnotus, the son and disciple of Aglaophon, was of Thasos, an island in the north of the Egean sea. He appeared before the 90th olympiad. He was the first that gave some grace to his figures: and contributed very much to the improvement of the art. Before him no great progress had been made in that part which regards expression. He at first cast some statues: but at length returned to the pencil, and distinguished himself by it in different manners.

But the painting which did him the most honour in all respects, was that which he performed at Athens in the * Πικίλην, in which he represented the principal events of the Trojan war. However important and valuable this work was, he refused to be paid for it, out of a generosity the more estimable as uncommon in persons who make money of their arts. The council of the Amphictyons, who represented the states of Greece, returned him their thanks by a solemn decree, in the name of the whole nation, and ordained, that in all the cities to which he should go, he should be lodged and maintained at the public expence. Mycon, another painter, who worked upon the same portico, but on a different side, less generous, and perhaps not so rich as Polygnotus, took money, and by that contrast augmented the glory of the latter.

* This was a portico, so called from the variety of the paintings and ornaments with which it was embellished.

APOLLODORUS.

This painter was of Athens, and lived in the 93d A. M. olympiad. It was he that at last discovered the 3596 secret of representing to the life, and in their greatest beauty, the various objects of nature, not only by the correctness of design, but principally by the correctness of design, but principally by the perfection of the coloris and the distribution of shades, lights, and Chiaro-oscuro; in which he carried painting to a degree of force and delicacy it had never been able to attain before. Pliny observes, that before him there was no painting which in a manner called upon and seized the spectator: *Neque ante eum tabula ullius ostenditur, quæ teneat oculos.* The effect, every excellent painting ought to produce, is to fix the eyes of the spectator, and to attract and keep them in admiration. Pliny the younger, after hav- Plin. Ep. 6. l. 3. 1 ing described in a very lively manner a Corinthian antique, which he had bought, and which represented an old man standing, concludes that admirable description in these words: “In fine, every thing in it is of a force to engage the eyes of artists, and to delight those of the unskilful.” *Talia denique omnia, ut possit artificum oculos tenere, deletare imperitorum.*

ZEUXIS.

Zeuxis was a native of Heraclea*, and learnt the first elements of painting about the 85th olympiad. A. M. 3564.

* It is not known which Heraclea authors mean, for there were several cities of that name. Some seem to suppose it Heraclea in Macedonia, or that in Italy near Crotona.

Pliny says *, that having found the door of painting opened by the pains and industry of his master Apollodorus, he entered without difficulty, and even raised the pencil, which already began to assume a lofty air, to a very distinguished height of glory. *The gate of art* means here the excellency of colouring, and the practice of the Chiaro-oscuro, light and shade, which was the last perfection painting wanted. But, as those who invent do not always bring their inventions to perfection, Zeuxis, improving upon his master's discoveries, carried those two excellent parts still farther than him. Hence it was, that Apollodorus, exasperated against his disciple, for this species of robbery so honourable to him, could not forbear reproaching him with it very sharply by a satire in verse, in which he treated him as a thief, who, not content with having robbed him of his art, presumed to adorn himself with it in all places as his lawful right.

All these complaints had no effect upon the imitator, and only served to induce him to make new efforts to excel himself, after having excelled his master. He succeeded entirely in his endeavours, by the admirable works he performed, which at the same time acquired him great reputation and great riches. His wealth is not the happiest part of his character. He made a puerile ostentation of it. He was fond of appearing and giving himself great airs, especially on the most public occasions, as in the Olympic games, where he shewed himself to all Greece dressed in a robe of purple, with his name embroidered upon it in letters of gold.

When he became very rich, he began to give away his works liberally, without taking any thing for them. He gave one reason for this conduct,

* Ab hoc (Apollodoro) fores apertas Zeuxis Heracleotes intravit audentemq; jam aliquid penicillum ad magnam gloriam perduxit.

which does no great honour to his modesty. * *If*, says he, *I gave my works away for nothing, it was because they were above all price.* I should have been better pleased, if he had let others say so.

An inscription which he affixed to one of his pieces does not argue more modesty. It was an *ATHLETA*, or Wrestler, which he could not forbear admiring, and extolling as an inimitable master-piece. He wrote at the bottom of it a Greek verse, of which the sense is:

† *A l'aspect du Lutteur, dans lequel je m'admire,
En van tous mes Rivaux voudront se tourmenter:
Ils pourront peutetre en medire
Sans pouvoir jamais l'imiter.*

*My WRESTLER, when my rivals see,
They hate its wond'rous charms and me;
A thousand things perhaps they blame,
But ne'er could imitate the same:*

The Greek verse is in Plutarch, but applied to the works of Apollodorus. It is:

Plut. de
glor.
Athen.
p. 346.

Μωμήσεται τις μάλλον, ἢ μιμήσεται.

This is more easy to criticise than imitate.

Zeuxis had several rivals, of whom the most illustrious were Timanthes and Parrhasius. The latter was competitor with him in a public dispute, for the prizes of painting. Zeuxis, in his piece, had represented grapes in so lively a manner, that, as soon as it was exposed, the birds came to peck

* *Postea donare opera sua instituit, quod ea nullo satis digno pretio permutari posse diceret.* *Plin.*

† *These verses are the author's of L'Histoire de la Peinture ancienne, extracted from the 35th book of Pliny's natural history, which he has translated, or rather paraphrased, with the Latin text. This book was printed at Lou bu in 1725. There are excellent reflections in it, of which I have made great use.*

at them. Upon which, in a transport of joy, and highly elated at the declaration of such faithful and undeniable judges in his favour, he called upon Parrhasius to produce immediately what he had to oppose to his picture. Parrhasius obeyed, and shewed a painting seemingly covered with a fine piece of stuff in form of a curtain. Remove your curtain, added Zeuxis, and let us see this masterpiece. That curtain was the picture itself, and Zeuxis confessed himself conquered. *For, says he, I only deceived the birds, but Parrhasius has deceived me, who am myself a painter.*

The same Zeuxis, some time after, painted a young man carrying a basket of grapes: and seeing that the birds came also to peck at them, he owned, with the same frankness, that if the grapes were well painted, the figure must be done very ill, because the birds were not afraid of it.

Quintilian* informs us, that the antient painters used to give their gods and heroes the same features and characters as Zeuxis gave them, from whence he was called the Legislator.

Festus relates, that the last painting of this master was the picture of an old woman, which work made him laugh so excessively, that he died of it. It is surprising that no author should mention this fact but Verrius Flaccus, cited by Festus. Though it is hard to believe it, says Mr. de Piles, the thing is not without example.

PARRHASIUS.

Parrhasius was a native of Ephesus, the son and disciple of Evenor, and as we have seen, the rival of Zeuxis. They were both esteemed the most excellent painters of their time, which the most

* Hæc vero ita circumscripsit omnia, ut cum legum latorem vocent, quia deorum & heroum effigies, quales ab eo sunt traditæ, ceteri, tanquam ita necesse sit, sequuntur. *Quintil. l. 12. c. 10.*

glorious age of painting; and Quintilian says, * they carried it to an high degree of perfection, Parrhasius for design, and Zeuxis for the colouring.

Pliny gives us the character and praise of Parrhasius at large. If we may believe him, the exact observation of symmetry was owing to that master; and also the expressive, delicate and passionate airs of the head; the elegant disposition of the hair; the beauty and dignity of features and person; and by the consent of the greatest artists, that finishing and boldness of the figures, in which he surpassed all that went before, and equally all that succeeded him. Pliny considers this as the most difficult and most important part of painting. For, says he, though it be always a great addition to paint the middle of bodies well, it is however what few have succeeded in. † But to trace the contours, give them their due decrease, and by the means of those insensible weakenings, to make the figure seem as going to shew what it conceals; in these certainly the perfection of the art consists.

Parrhasius had been formed for painting by Socrates, to whom such a disciple did no little honour.

Xenophon has preserved a conversation, short indeed, but rich in sense, wherein that philosopher, who had been a sculptor in his youth, gives Parrhasius such lessons as shew, that he had a perfect knowledge of all the rules of painting.

It is agreed, that Parrhasius excelled in what regards the characters and passions of the soul, which appeared in one of his pictures, that made abundance of noise, and acquired him great reputation. It was a faithful representation of the PEOPLE OR GENIUS OF ATHENS, which shone with a thousand

* Zeuxis atque Parrhasius—plurimum arti addiderunt. Quorum prior luminum umbrarumque invenisse rationem, secundus examinasse subtilius lines traditur. *Ibid.*

† Ambire enim debet extremitas ipsa, & sic desinere, ut promittat alia post se, ostendatq; etiam quæ occultat.

elegant and surprising beauties, had argued an inexhaustible fund of imagination in the painter. * For intending to forget nothing in the character of that state, he represented it, on the one side capricious, irascible, unjust and inconstant; on the other, humane, merciful and compassionate; and with all this, proud, haughty, vainglorious, fierce; and sometimes even base, timorous, and cowardly. This picture was certainly a lively sketch of nature. But in what manner could the pencil describe and group so many different images? There lay the Wonderful of the art: It was undoubtedly an allegorical painting.

Different authors have also drawn our painter to the life. He was an † artist of a vast genius and infinite fertility of invention, but one to whom none ever came near in point of presumption; or rather in that kind of arrogance, which a glory justly acquired, but ill sustained, inspires sometimes in the best artificers. He dressed himself in purple, wore a crown of gold; had a very rich cane, gold clasps in his shoes, and magnificent buskins; in short, every thing about him was in the same lofty stile. He bestowed upon himself abundantly the finest epithets, and most exalted names, which he was not ashamed to inscribe at the bottom of his pictures; *the delicate, the polite, the elegant Parrhasius. the man who carried the art to its perfection, originally descended from Apollo, and born to paint the gods themselves.* He added, that, in regard to his Hercules, *he had represented him exactly, feature for feature, such as he had often appeared to him in his dreams.* With all this shew and

* Pinxit & DÆMONA ATHENIENSIVM, argumento quoq; ingenioso volebat namq; variũ iracundium, injustum, inconstantem eundem vero exorabilem, clementem, misericordem, excelsum gloriosum, humilem, ferocem, fugacemque & omnia pariter ostendere. *Plin.*

† Fœcundus artifex, sed quo nemo insolentius & arrogantius usus gloriã artis. *Plin.*

vanity, he gave himself out *for a man of virtue*, less delicate in this point than Mr. Boileau, who called himself.

Ami de la vertu, plutot que vertueux.

The friend of virtue, rather than virtuous.

The event of his dispute with Timanthes, in the city of Samos, must have humbled him extremely, and not a little mortified his self-love. He that succeeded best in a subject was to have a prize. This subject was an Ajax enraged against the Greeks, for having adjudged the arms of Achilles to Ulysses. Upon this occasion, by the majority of the best judges, Timanthes was declared victor. Parrhasius covered his shame, and comforted himself for his defeat, with a smart saying, which seems to favour a little of rodomontade. *Alas poor hero!* said he, *his fate afflicts me more than my own. He is a second time overcome by one of less merit than himself.*

P A M P H I L U S .

Pamphilus was a native of Amphipolis, upon the borders of Macedonia and Thrace. He was the first that united erudition with painting. He confined himself to mathematics, and more especially to arithmetic and geometry; maintaining strongly, that without their aid it was impossible to carry painting to its perfection. It is easy to believe, that such a master would not make his art cheap. He took no disciple under ten talents (ten thousand crowns) for so many years, and it was at that price Melanthus and Apelles became his scholars. He obtained, at first at Sicyone, and afterwards throughout all Greece, the establishment of a kind of academy, in which the children of free condition, that were inclined to the polite arts, were carefully edu-

cated and instructed. And lest painting should come to degenerate, and grow into contempt, he obtained farther from the states of Greece a severe edict to prohibit the use of it to slaves.

The excessive price paid by disciples to their masters, and the institution of academies for free persons, with the exclusion of slaves, shew how highly this art was esteemed, with what emulation they applied to it, and with what success and expedition it must have attained its perfection.

A. M. 3604. Zeuxis, Parrhasius, Melanthus, and Pamphilus, were cotemporaries, and lived about the 95th olympiad.

TIMANTHES.

Timanthes, according to some, was of Sicyone; and, according to others, of Cythnus, one of the Cyclades. His particular character was * invention. This part so rare and difficult, is acquired neither by industry nor the advice and precepts of masters: it is the effect of an happy genius, a lively imagination, and that noble fire which animates painters as well as poets with a kind of enthusiasm.

Plin. l. 35. Quintil. l. 2. c. 13. Val. Max. l. 8. c. 11. The Iphigenia of Timanthes, celebrated by so many writers, was looked upon as a master-piece of the art in its kind, and occasioned its being said, that his works made those who saw † them conceive more than they expressed, and that though art in them rose to its highest degree of perfection, genius still transcended it. The subject was fine, grand, tender, and entirely proper for painting: but the execution gave it all its value. This piece represented Iphigenia standing before the altar, as a young

* Timanthi plurimum adfuit ingenî. *Plin.*

† In omnibus ejus operibus intelligitur plus semper, quam pingitur; & cum ars summa sit, ingenium tamen ultra artem est. *Plin.*

l. 35. c. 10.

and innocent princess, upon the point of being sacrificed for the preservation of her country. She was surrounded by several persons, all of them strongly interested in this sacrifice, though in different degrees. The painter * had represented the priest Chalchas in great affliction, Ulysses much more sad, and Menelaus the victim's uncle, with all the grief it was possible for a countenance to express: Agamemnon, the princess's father, still remained. All the lineaments of sorrow were however exhausted. Nature was called in to the support of art. It is not natural for a father to see his daughter's throat cut: it sufficed for him to obey the gods who required it, and he was at liberty to abandon himself to all the excess of sorrow. The painter not being able to express that of the father, chose to throw a veil over his face, leaving the spectator to judge of what passed in his heart: *Velavit ejus caput, & suo cuique animo dedit æstimandum.*

This idea is finely conceived, and does Timanthes great honour. It is not known, however, whether he was the real auther of it, and it is probable that the Iphigenia of Euripides supplied him with it. The passage says: *When Agamemnon saw his daughter led into the grove to be sacrificed, he groaned, and turning away his head wept, and covered his face with his robe.*

One of our own illustrious painters, Le Poussin, has happily imitated the same circumstance, in his picture of the death of Germanicus. After having treated the different kinds of affliction of the other persons, as passions capable of being expressed, he places on the side of Germanicus's bed, a woman

* Cum in Iphigeniæ immolatione pinxisset tristem Colchantem, tristem Ulysses addidisset Menelao, quem summam poterat ars efficere merorem; consumptis affectibus, non reperiens quo digno modo patris vultum posset exprimere, velavit ejus caput, & suo cuique animo dedit æstimandum. *Quintil. l. 2. c. 13.*

remarkable for her mien and habit, who hides her face with her hands, whilst her whole attitude excessive grief, and clearly intimates, that she is the wife of the prince whose death they are lamenting.

I cannot help adding in this place a very curious fact in relation to allegorical painting. A picture, in which a fiction and an emblem are used to express a real action, is so called.

The prince of Conde had the history of his father, known in Europe by the name of the Great Conde, painted in his gallery at Chantilly. There was a great inconvenience to get over in the execution of this project. The hero, during his youth, had been engaged in interest with the enemies of the state, and had done great part of his exploits, whilst he did not carry arms for his country. It seemed necessary therefore not to display this part of his warlike actions in the gallery of Chantilly. But, on the other side, some of his actions, as the relief of Cambray, and the retreat before Arras, were so glorious, that it must have been a great mortification to a son so passionate for his father's renown, to have suppressed them in the monument he erected to the memory of that hero. The prince himself discovered an happy evasion: for he was not only the prince, but the man of his time, to whom nature had given the most lively conceptions, and the most shining imaginations. He therefore caused the muse of history to be designed, an allegoric but well known person, holding a book, upon the back of which was written, *Life of the prince of Conde*. That muse tore leaves out of the book which she threw upon the ground, and on those leaves were inscribed, *Relief of Cambray, relief of Valenciennes, retreat before Arras*: in short, the title of all the great actions of the prince of Conde, during his stay in the Netherlands; all very shining exploits, with no other exception than the service in which they were done. The piece unhappily was not executed according to so elegant and

and simple an idea. The prince, who had conceived so noble a plan, had, upon this occasion, an excess of complaisance, and paying too great a deference to art, permitted the painter to alter the elegance and simplicity of his thought by figures, which render the painting more uniform, but make it convey nothing more than he had already imaged in so sublime a manner. I have extracted this account from the critical reflections upon poetry and painting.

A P E L L E S .

Apelles, whom fame has placed above all other painters, appeared at length in the 112th olympiad. Plin. l. 35, c. 10. A. M. 3672. He was the son of Pithius, of the island of * Cos, and the disciple of Pamphilus. He is sometimes called an Ephesian, because he settled at Ephesus, where, without doubt, a man of his merit, soon obtained the freedom of the city.

He had the glory of contributing more in his own person than all the other painters together, to the perfection of the art, not only by his excellent works, but by his writings; having composed three volumes upon the principal secrets of painting, which subsisted in the time of Pliny, but unfortunately are not come down to us.

His chief excellency lay in the GRACES, that is to say, something free, noble, and at the same time beautiful, which moves the heart, whilst it informs the mind. When he praised and admired the works of others, which he did very willingly; after having owned, that they excelled in all the other parts, he added, that they wanted grace; but that as to himself, that quality had fallen to his share; which praise no body could dispute with him. A pardonable ingenuity in men of real merit, when not proceeding from pride and arrogance.

* *Lie in the Egean sea.*

The manner in which he came acquainted and contracted a friendship with Protogenes, a celebrated painter of his time, is curious enough, and worth relating. Protogenes lived at Rhodes, known only to Apelles by reputation and the fame of his works. The latter, desiring to be assured of their beauty by his own eyes, made a voyage expressly to Rhodes. When he came to Protogenes's house, he found no body at home, but an old woman who took care of the place where he worked, and a canvas on the easel, on which there was nothing painted. Upon the old woman's asking his name, I am going to set it down, says he: and taking a pencil with colour, he designed something in a most exquisite taste. Protogenes, on his return, being informed of what had passed by the servant, and considering with admiration what he saw designed, was not long before he guessed the author. *This is Apelles; cried he, there is no man in the world capable of so fine and delicate a design besides himself.* Taking another colour, he drew a contour upon the same lines still more correct and admirable, and bade his house-keeper, if the stranger returned, shew him what he had done, and tell him that it was the work of the man he came to enquire for. Apelles came again soon after: but being ashamed to see himself excelled by his rival, he took a third colour, and amongst the strokes already done, introduced others of so sublime and wonderful a nature, as entirely exhausted all that was most refined and exquisite in the art. When Protogenes perceived these last strokes; *I am overcome, said he, and fly to embrace my conqueror.* Accordingly he ran to the port, where finding Apelles, they contracted a strict friendship, which continued ever after: a circumstance something extraordinary between persons of the greatest merit in the same way. They agreed between them, in regard to the painting in which they had tried their skill with each other, to leave

leave it to posterity as it was, without touching it any more, rightly foreseeing what really came to pass, that it would one day prove the admiration of the whole world, and particularly of the connoisseurs and masters of the art. But this precious monument of the two greatest painters that ever were, was reduced to ashes, when the house of Augustus, in the Palatium, was first burnt; where it was exposed to the curiosity of spectators, always surprised, in the midst of a multitude of other most exquisite and finished paintings; to find in this only a kind of void space, by so much the more admirable, as it had only the outlines of three designs in it of the most perfect beauty, scarce visible through their smallness, and for that reason still the more valuable and the more attractive of the most judicious eyes.

It is almost in this sense the passage of Pliny is to be understood, where he says, *arrepto penicillo lineam ex colore duxit summæ tenuitatis per tabulam*; by *lineam* he does not mean a simple geometrical line, but a stroke of the pencil in an exquisite taste. The other notion is contrary to common sense, says Mr. de Piles, and shocks every body that has the least idea of painting.

Though Apelles was very exact in his works, he knew how far it was necessary to take pains without tiring his genius, and did not carry his exactitude to the utmost scruple. * He said one day of Protogenes, that he confessed that rival might equal, or even excel him in every thing else, but *did not know when to take off the pencil*, (that is to say, to have done;) and that he often spoiled the fine things he did, by endeavouring to give them an higher

* Idem & aliam gloriam usurpavit cum Protogenis opus immensi laboris ac curæ supra modum anxie, mitraetur. Dixit enim omnia sibi cum illo paria, aut illi meliora; sed uno se præstare, quod manum ille de tabula non sciret tollere; memorabili præcepto, notare sepe. nignium diligentiam. *Plin.*

degree of perfection. A reflection worth nothing, says Pliny, and which shews that a too scrupulous exactitude often becomes prejudicial.

Apelles did not say this because he approved negligence in those who applied themselves to painting. He was of a quite different opinion, both with regard to himself and others. He passed no day of his life, whatever other affairs he might have to transact, without exercising himself either in craions, with the pen, or the brush, as well to preserve the freedom and facility of his hand, as to improve his perfection in all the refinements of an art, that has no bounds.

One of his disciples shewing him a draught for his own opinion of it, and telling him, that he had done it very fast, and in a certain space of time: *I see that very plain*, says he, *without your telling it me, and am surpris'd that in so short a time you did no more of this kind.*

Another painter shewing him the picture of an Helen, which he had drawn with care, and adorned with abundance of jewels, he told him: *Not being able to make her beautiful, friend of mine, you were resolv'd at least to make her rich.*

If he spoke his own opinion with simplicity, he took that of others in the same manner. His custom was, when he had finished a work, to expose it to the eyes of such as pass'd by, and to hear what was said of it behind a curtain, with design to correct the faults they observed in it. A shoe-maker having perceived something wanting in a sandal, said so freely; and the criticism was just. The next day passing the same way he saw the fault corrected. Proud of the good success of his remark, he thought fit to censure also a leg, to which there was nothing to object: the painter then came from behind the screen, and bade the shoe-maker keep to his trade and his sandals: Which gave birth

birth to the proverb, *Ne sutor ultra crepidam*; that is,

Let not the cobbler go beyond his last.

Apelles took pleasure in doing justice to the merit of great masters, and was not ashamed to prefer them to himself in some qualities. Thus he confessed ingenuously that Amphion excelled him in disposition, and Asclepiodorus in the regularity of design. We have seen his judgment in favour of Protogenes. Nor did he confine himself to mere words.

That excellent painter was in no great esteem with his own country. Whilst Apelles was with him at Rhodes, he asked him what he would take for his works when finished, and the other having set a very moderate price on them: *and for me*, replied Apelles, *I offer you * fifty talents for each of them, and will take them all that price*; adding, that he should easily get them off, and would sell them all as his own. This offer, which he made in earnest, opened the eyes of the Rhodians to the merit of their painter; who, on his side, made the best of it, and would not sell any more of his pictures out at a very considerable price.

His supreme excellency in painting was not the only merit of Apelles. Polite learning, knowledge of the world, and his affable, insinuating, elegant behaviour, made him highly agreeable to Alexander the Great, who did not disdain to go often to the painter's house, as well to enjoy the charms of his conversation, as to see him work, and to be the first witness of the wonders performed by his pencil. This affection for a painter, who was polite, agreeable, and full of wit, is not a matter of wonder. A young monarch easily grows fond of

* Fifty thousand crowns. This sum seems exorbitant. It is common enough to meet with errors in cyphers.

a genius of this kind, who, with the goodness of his heart, unites the beauty of his mind, and the delicacy of his pencil. This sort of familiarity between heroes of different characters, is not uncommon, and does honour to the greatest princes.

Alexander had so high an idea of Apelles, that he published an edict to declare, that it was his will that no other persons should paint him; and by the same edict granted permission to none but Pyrgoteles to cut the dies for his medals, and Lyfippus to represent him in cast metals.

Plut. de
amic. &
adulat.
p. 58.

It happened that one of the principal of Alexander's courtiers being one day with Apelles, whilst he was painting, he vented abundance of injudicious questions and reflections upon painting, as is common with those who talk of what they are ignorant. Apelles, who had no reason to apprehend any thing from explaining himself freely to the greatest lords, said to him, "Do you see those boys that are grinding my colours? Whilst you were silent they admired you, dazzled with the splendor of the purple and gold with which your habits glitter. But ever since you began to talk of what you don't understand, they have done no thing but laugh." Plutarch relates this. According to Pliny*, Apelles ventured to reprove Alexander himself in this manner, though in soft terms, advising him only to express himself with more reserve before his workmen: such an ascendant had the witty painter acquired over a prince who was at that time the terror and admiration of the world, and naturally very warm. Alexander gave him still more extraordinary proofs of his affection and regard.

Plin. l. 35.
c. 10.

* In officina imperite multa diceret: silentium comiter suadebat: tiderium cum dicens a pueris qui colores tererent. Tantum auctoritatis & jussus erat ei in regem, alioquin iracundum.

The simple and open character of Apelles was not equally agreeable to all the generals of that young monarch. Ptolemy, one of them, to whom Egypt was afterwards allotted, was not of the number of those that affected our painter most: for what reason history does not say. However it was, Apelles having embarked, sometime after the death of Alexander, for a city of Greece, was unfortunately thrown by a tempest upon the coast of Alexandria, where the new king made him no reception. Besides this mortification, which he expected, there were some persons, that envied him, malicious enough to endeavour to embroil him much more. With this view, they engaged one of the officers of the court to invite him to sup with the king, as from himself; not doubting but such a liberty, which he would seem to take of himself, would draw upon him the indignation of a prince, who did not love, and knew nothing of this little knavish trick. Accordingly, Apelles went to supper out of deference, and the king, highly offended at his presumption, asked him fiercely, which of his officers had invited him to his table; and shewing him his usual inviters, he added, that he would know which of them had occasioned him to take such a liberty. The painter, without any emotion, extricated himself from this difficulty like a man of wit, and a consummate designer. He immediately took a piece of charcoal out of a chafing-dish, in the room, and with three or four strokes upon the wall, sketched the person that had invited him, to the great astonishment of Ptolemy, who from the first lines knew the face of the impostor. This adventure reconciled him with the king of Egypt, who afterwards loaded him with wealth and honours.

But this did not reconcile him with envy, which only became the more violent against him. He

Lucian. de
Calumn.
p. 563—
was 585.

was accused, some time after, before that prince, of having entered with Theodotus * into the conspiracy formed against him in the city of Tyre. The accuser was another painter of reputation, named Antiphilus. There was not the least probability in the charge. Apelles had not been at Tyre; had never seen Theodotus; and was neither of a character nor profession to be concerned in such affairs: the accuser, who was also a painter, though very inferior to Apelles to merit and reputation, might, without injury, be suspected of jealousy in point of art. But the prince, without hearing or examining any thing, as is too common, taking it for granted that Apelles was criminal, reproached him warmly with his ingratitude, and badness of heart; and he would have been carried to execution, but for the voluntary confession of one of the accomplices; who, touched with compassion upon seeing an innocent man upon the point of being put to death, confessed his own guilt, and declared that Apelles had no share in the conspiracy. The king, ashamed of having given ear to calumny so hastily, reinstated him in his friendship, gave him an hundred talents, to make him amends for the wrong he had done him, with Antiphilus to be his slave.

*An hundred
thousand
crowns.*

Apelles, on his return to Ephesus, revenged himself upon all his enemies by an excellent picture of calumny, disposed in this manner. Upon the right of the piece sat a man of considerable authority with great ears, not unlike those of Midas, holding out his hand to calumny, to invite her to approach him. On each side of him stood a woman, one of whom represented *Ignorance*, and the other

ὁ ἀγνοῦν.

Suspicion.

Calumny seems to advance in the form of a woman of exquisite beauty. There is however to be dis-

* *Lucian is taxed with a very gross anachronism in regard to this fact.*

cerned in her aspect and mein an air of violence and fierceness, like one actuated by anger and fury. In one hand, she holds a torch to kindle the fire of discord and division; and with the other she drags a young man by the hair, holding up his hands to heaven, and imploring the assistance of the gods. Before her goes a man with a pale face, a withered lean body, and piercing eyes, who seems to lead the band: this was * Envy, Calumny is attended by two other women, who excite, animate, and busy themselves about her, to exalt her charms and adjust her attire. By their wary and composed air these are easily conjectured to be FRAUD and TREACHERY. At distance behind all the rest follows REPENTANCE, cloathed in a black torn habit, who looking back with abundance of confusion and tears, sees afar off TRUTH advancing surrounded with light. Such was the useful and ingenious revenge of this great man. I do not believe it would have been safe for him, during his stay in Egypt, to have drawn, or at least exposed, such a painting. Those great ears, that hand extended to invite the approach of Calumny, and the like strokes, do no honour to the principal character, and express a prince suspicious, credulous, open to fraud, who seems to invite accusers.

Pliny makes a long enumeration of the paintings of Apelles. That of Antigonus † is of the most famous. This prince had but one eye, wherefore he drew him turning sideways, to hide that deformity. He is said to have been the first that discovered the profile.

He drew a great many pictures of Alexander, one of which was looked upon as the most finished of his works. He was represented in it with thunder in his hand. This picture was done for

* Envy, in the Greek, is masculine: ἐφύσθη.

† Habet in pictura speciem tota facies. Apelles tamen imaginem Antigoni latere tantum altero ostendit, ut amissa oculi deformitas lateret. *Quintil.* l. 2. c. 13.

the temple of Diana at Ephesus. The hero's hand with the thunder in it, says Pliny, who had seen it, seem actually projected from the piece. And that prince himself said, that he reckoned two Alexanders, the one of Philip, who was invincible; the other of Apelles, that was inimitable.

Pliny mentions one of his paintings, which must have been of singular beauty. He made it for a public dispute between the painters: the subject given them to work upon was a mare. Perceiving that intrigue was upon the point of adjudging the prize to one of his rivals, * he appealed from the judgment of men to that of mute animals, more just than men. He caused the pictures of the other painters to be set before horses brought thither for that purpose; they continued without motion to all the other pieces, and did not begin to neigh till that of Apelles appeared.

His Venus, called *Anadyoméne*, that is to say, rising from the sea, was his master-piece. Pliny† says, that this piece was celebrated by the verses of the greatest poets, and that if the painting was excelled by the poetry, it was also made illustrious by it. Apelles had made another at Cos, his native country, which in his own opinion, and that of all judges, would have excelled the first; but invidious death put a stop to the work when half executed. No body afterwards would presume to put pencil to it. It is not known, whether it was this second Venus, or the first, that Augustus bought of the people of Cos, by discharging them of the tribute of an hundred talents, laid on them by the Roman republic. If it were the second, as is very likely, it had as bad a fate, and still worse than the first. In the time of Augustus, the damp had begun to spoil the lower part of it. Enquiry was made by that prince's order for somebody to

Strab. l.
14. p. 657.

An hundred
thousand
crowns.

* Quo judicio ad mutas quadrupedes provocavit ab hominibus.
† Versibus græcis tali opere, dum laudatur, victo, sed illustrato.
retouch

touch it; but there was none bold enough to undertake it, which * augmented the glory of the Greek painter, and the reputation of the work itself. This fine Venus, which no one dared to touch, out of veneration and awe, was insulted by the worms, that got into the wood, and devoured it. Nero, who reigned then, caused another to be set up in its place, done by a painter of little *Dorotheus*.
note.

Pliny observes to the reader, that all these wonderful paintings, which were the admiration of all mankind, were painted only with the four primitive colours, of which we have spoke.

Apelles brought up several disciples, to whom his inventions were of great advantage: but, says Pliny, he had one secret which nobody could ever discover, and that was the composition of a certain varnish, which he applied to his paintings, to preserve them during a long series of ages, in all their freshness and spirit. There were three advantages in the use of this varnish: 1. It gave a lustre to every kind of colour: and made them more mellow, smooth and tender: which is now the effect of oil. 2. It preserved his works from dirt and dust. 3. It * helped the sight of the spectator which is apt to dazzle, in softening the strength of the most lively colours, by the interposition of his varnish, which served instead of glasses to his works.

A R I S T I D E S .

One of the most famous coteremporaries of Apelles was Aristides the Theban. He did not indeed possess the elegance and graces in so high a degree

* Ipsa injuria cessit in gloriam artificis.

† Ne claritas colorum, oculorum aciem offenderet—& eadem res minus floridis coloribus austeritatem occultè daret. *Plin.*

as Apelles: * but was the first, that by genius and application established unerring rules for expressing the soul, that is to say, the inmost workings of the mind. He excelled as well in the strong and vehement, as the soft and tender passions: but his colouring had something harsh and severe in it.

The admirable piece † was his (still in Pliny's words) in which, in the storming of a town, a MOTHER is represented expiring by a wound she has received in her bosom, and an INFANT creeping to suck at her breast. In the visage of this woman, though dying, there appears the warmest sentiments, and the most passionate solicitude of the maternal tenderness. She seems to be sensible of her child's danger, and at the same time to be afraid, that instead of her milk she should find only blood. One would think Pliny had the pencil in his hand, he paints all he describes in such lively colours. Alexander, who was so fond of whatever was fine, was so enamoured of this piece, that he caused it to be taken from Thebes, where it was, and carried to Pella, the place of his birth, at least so reputed.

The same person painted also the battle of the Greeks with the Persians, wherein, within a single frame, he introduced an hundred persons ‡ at a thousand drachmas (about twenty-four pounds) each figure, by an agreement made between him and the tyrant Mnason, who reigned at that time at Elataea in Phocis. I have spoke elsewhere of a Bacchus, which was reckoned the master-piece of Aristides, and was found at Corinth, when that city was taken by Mummius.

* *Is omnium primus animum pinxit & sensus omnes expressit.*
Plin.

† *Hujus pictura est, oppido capto ad matris morientis è vulnere mammam adrepans infans; intelligiturque sentire mater & timere, &c. e mortuo lacte sanguinem lambat.*

‡ *The text says, ten minæ. The mina is worth an hundred drachmas, and the drachma ten sels.*

He was so excellent in expressing the languor of the body or mind, that Attalus, who was a great connoisseur of things of this kind, made no scruple to give an hundred talents for one of his paintings, wherein only something of this nature was expressed: Only riches as immense as those of Attalus, which became a proverb, (*Attalicis Conditionibus*) could make so exorbitant a price for a single picture probable.

An hundred thousand crowns.

P R O T O G E N E S .

Protogenes was of the city of Caunus, upon the southern coast of the island of Rhodes, on which it depended. He employed himself at first only in painting ships, and lived a great while in extreme poverty. Perhaps that might be of no prejudice to him; for poverty often induces men to take pains, and is the* sister, or rather mother of invention and capacity. By the works he was employed to do at Athens, he became the admiration of the most discerning people in the world.

The most famous of his paintings was the JALY-
sos; he was an hunter, son or grandson of the Sun, and founder of Rhodes. What was most admired in this piece was the froth at the dog's mouth. I have related this circumstance at length, in speaking of the siege of Rhodes.

Plin. l. 35.
c. 10.
Aul. Gell.
l. 15. c. 31.
Plut. in
Demetr.
p. 898.
Vol. VII.

Another very celebrated picture of Protogenes, was the satyr leaning against a pillar. He executed it at the very time Rhodes was besieged; wherefore it was said to have been *painted under the sword*. At first there was a partridge perched upon the pillar. But because the people of the place, when it was first exposed, bestowed all their attention and admiration upon the partridge, and said nothing of the

Strab. l. 14.
p. 652.

* Nescio quomodo bonæ mentis soror est paupertas. *Petron.*

fatyr, which was much more admirable; and the tame partridges, brought where it was, called, upon the sight of that upon the pillar, as if it had been a real one; the painter, offended at that bad taste, which in his opinion was an injury to his reputation, desired leave of the directors of the temple, in which the painting was consecrated, to retouch his work; which being granted, he struck out the partridge.

He also painted the mother of Aristotle, his good friend. That celebrated philosopher, who during his whole life cultivated the polite arts and sciences, highly esteemed the talents of Protogenes. He even wished, that he had applied them better than in painting hunters or fatyrs, or in making portraits. And, accordingly he proposed to him, as a subject for his pencil, the battles and conquests of Alexander, as very proper for painting, from the grandeur of ideas, elevation of circumstances, variety of events, and immortality of facts. But a certain peculiar taste, a natural inclination for more calm and grateful subjects, determined him to works of the kind I have mentioned. All that the philosopher could obtain of the painter, at last, was the portrait of Alexander, but without a battle. It is dangerous to make excellent artists quit their taste and natural talent.

P A U S I A S .

Pausias was of Sicyone. He distinguished himself particularly by that kind of painting called *Cautic*, from the colours being made to adhere either upon wood or ivory, by the means of fire. Pamphilus was his master in this art, whom he far excelled in it. He was the first that adorned arches and cielings with paintings of this kind. There were many considerable works of his doing. Pau-
fania

faniaſ ſpeaks of a DRUNKENNESS; ſo well painted, ſays he, that all the features of her ruddy face may be diſtinguiſhed through a large glaſs ſhe is ſwilling.

The courtezan * Glycera, of Sicyone alſo, excelled in the art of making wreaths, and was looked upon to be the inventreſs of them. Pausias, to pleaſe and imitate her, applied himſelf alſo in painting flowers. A fine diſpute aroſe betwixt art and nature, each uſing their utmoſt endeavours to carry the prize from their competitor, without its being poſſible to adjuſt the victory to either.

Pausias paſſed the greateſt part of his life at Sicyone, his country, which was in a manner the nurſing mother of painters and painting. It is true, that this city being ſo much indebted, in the latter times, that all the public and private paintings were pledged for large ſums of money, M. Scaurus, Sylla's ſon-in-law by his mother Metella, with deſign to immortalize his edileſhip, paid all the creditors, and took out of their hands all the paintings of the moſt famous maſters, and amongſt the reſt thoſe of Pausias, carried them to Rome, and ſet them up in the famous theatre, which he cauſed to be erected to the height of three ſtories, all ſupported by magnificent pillars of thirty feet high, to the number of three hundred and ſixty, and embellished with ſtatues of marble and bronze, and with antique pieces of the greateſt painters. This theatre was to continue only during the celebration of the games. Pliny ſays of this edileſhip, that it completed the ſubverſion of the manners of the Roman citizens. *Cujus (M. Scauri) neſcio an Ædi-*

* Amavit in juvena Glyceram municipem ſuam, inventricem coronarum: certandoque imitacione ejus, ad numeroſiſſimam ſorum varietatem perduxit artem illam—cum opera ejus picturâ imitaretur, & illa provocans variaret, eſt.que certamen artis ac naturæ.
Plin. l. 35. c. 11. & l. 21. c. 3.

litas maximè prostraverit mores civiles; and he goes so far as to add, that it did more prejudice to the republic, than the bloody proscription of his father-in-law Scylla, that cut off so many thousand Roman citizens.

Nicias of Athens distinguished himself very much amongst the painters. There were abundance of his pictures in exceeding estimation; amongst others, that wherein he had drawn Ulysses's descent into hell, called *νεχρία*, Attalus, or rather, according to Plutarch, Ptolomy, offered him for this picture sixty talents, (sixty thousand crowns) which seems almost incredible: but he refused them, and made it a present to his country. He laboured upon this piece with such application, that he often forgot the time of the day, and would ask his servant, *Have I dined?* * When Praxiteles was asked upon which of his works of marble he set the highest value, he answered, *That to which Nicias has set his hand.* He meant by that the excellent varnish added by that painter to his marble statues, which exalted their beauty.

I shall not mention abundance of other great painters, not so well known, nor so illustrious as those I have spoken of, who did so much honour to Greece.

It is very unfortunate that none of their works have come down to us, and that we are not capable of judging of their merit by our own eyes. We have it in our power to compare the antique sculpture of the Greeks with our own, because we are certain that we still have master-pieces of it, that is to say, the finest works of that kind antiquity produced. The Romans, in the age of their greatest splendor, which was that of Augustus, disputed

* Hic est Nicias de quo dicebat Praxiteles interrogatus quæ maximè opera sua probaret in marmoribus: Quibus Nicias manum admovisset; tantum circumlitioni ejus tribuebat. *Plin.* l. 35. c. 11.

with the Greeks only ability in the art of government. They acknowledged them their masters in all others, and expressly in that of sculpture :

*Excudent alii spirantia mollius æra
Credo equidem ; vivos ducent de marmore vultus.
Tu regere imperio populos, Romane, memento :
Hæ tibi erunt artes.* Virg. Æneid. l. 6.

What I have related of Michael Angelo, who preferred the Cupid of Praxiteles so much to his own, is an evident proof, that the modern can, no more than the antient Rome, dispute sculpture with the Greeks.

We cannot judge in the same manner of the excellency of the antient painters. That question is not to be decided from mere relations. To understand that, it were necessary to have their pieces to compare with each other, and with ours. These we want. There are still some antique Mosaic paintings at Rome ; but few done with the pencil, and those in bad condition. Besides which, what remains, and was painted at Rome upon the walls, were not done till long after the death of the celebrated painters of Greece.

It must, however, be owned, that, every thing considered, the prejudices are extremely in favour of antiquity, even in regard to painting. In the time of Crassus, whom Cicero introduces as a speaker, in his books *de Oratore*, people could never sufficiently admire the works of the antient painters, and were soon tired with those of the moderns ; because in the former there was a taste of design and expression, that perpetuated the raptures of the connoisseurs, and in the latter scarce any thing to be found, but the variety of the colouring. “ I do not know, says Crassus *, how it happens, “ that

* Difficile dictu est, quæ nam causa sit cur ea, quæ maximè sensus nostros impellunt voluptate & specie prima acerrimè commovent,

“ that things which strike us at first view by their
 “ vivacity, and which even give us pleasure by
 “ that surprize, almost as soon disgust and satiate
 “ us. Let us, for instance, consider our modern
 “ paintings. Can any thing be more splendid and
 “ lively? What beauty, what variety of colours!
 “ How superior are they in this point to those of
 “ the antient! However, all these new pieces,
 “ which charm us at first sight, have no long im-
 “ pression; whilst, on the contrary, we are never
 “ tired with contemplating the others, notwith-
 “ standing all their simplicity, and even the gros-
 “ ness of ther colouring.” Cicero gives no reason
 for these effects: But Dionysius Halicarnassensis,
 who lived also in the time of Augustus, does.
 “ The antients, says he, were great designers, and
 “ understood perfectly all the grace and force of
 “ expression, though their colouring was simple
 “ and little various. But the modern painters,
 “ who excel in colouring and shades, are vastly far
 “ from designing so well, and do not treat the pas-
 “ sions with the same success.” This double testi-
 mony shews us, that the antients had succeeded no
 less in painting than sculpture: and their superiority
 in the latter no-body ever contested. It appears at
 least, without carrying any thing to extremes, that
 that the antients rose as high in the parts of design,
 chiaro-oscuro, (*light and shade*) expression and com-
 position, as the most excellent moderns can have
 done; but, as to colouring, that they were much
 inferior to the latter.

Dion. Ha-
 licarn. in
 Isæo, p.
 104.

I cannot conclude what regards painting and sculpture, without deploring the abuse made of it,

ab iis celerrimè fastidio quodam & fatietate abalienamur. Quântò
 colorum pulchritudine & varietate floridiora sunt in picturis novis
 pleraque quam in veteribus! quæ tamen, etiãsi primò aspectu nos
 ceperunt, diutiùs non delectant: cùm iidem nos, in antiquis ta-
 bulis, illo ipso horrido obsoletoque teneamur. *Cic. de orat.* l. 3.
 n. 98.

even

even by those who have most excelled in it: I speak equally of the antients and moderns. All the arts in general, but especially the two we are now upon, so estimable in themselves, so worthy of admiration, which produce such amazing effects, that by the strokes of the chissel animate marble and brass; and, by the mixture of colours, represent all the objects of nature to the life: these arts, I say, owe a particular homage to virtue; to the honour and advancement of which, the original author and inventor of all arts, that is to say, the Divinity himself, has peculiarly allotted them.

This is the use which even the Pagans believed themselves obliged to make of sculpture and painting, by consecrating them to the memory of great men, and the expression of their glorious actions. * Fabius, Scipio, and the other illustrious persons of Rome, confessed, that upon seeing the images of their predecessors, they found themselves animated to virtue in an extraordinary manner. It was not the wax of which those figures were formed, nor the figures themselves, that produced such strong impressions in their minds; but the sight of the great men, and the great actions of which they renewed and perpetuated the remembrance, and inspired at the same time an ardent desire to imitate them.

Polybius observes, that these images, that is to say, the busto's of wax, which were exposed on the days of solemnity in the halls of the Roman magistrates, and were carried with pomp at their funerals, kindled an incredible ardo: in the minds of the young men, as if those great men had quitted

Polyb. l. 6.

P. 495,
496.

* Sæpe audivi Q. Maximum, P. Scipionem, præterea civitatis nostræ præclaros viros solitos ita dicere, cùm majorum imagines intuerentur, vehementissimè sibi animum ad virtutem accendi. Scilicet non ceram illam, neque figuram, tantam vim in se habere: sed memoria rerum gestarum eam flammam egregiis viris in pectore crescere, neque prius sedari, quam virtus eorum famam atque gloriam adæquaverit. *Sallust. in præfat. bel. Jugurth.*

their tombs, and returned from the dead, to animate them in person to follow their example.

Agrippa *, Augustus's son-in-law, in a magnificent harangue, worthy of the first and greatest citizen of Rome, shews, by several reasons, says Pliny, how useful it would be to the state to expose publicly the finest pieces of antiquity in every kind, in exciting a noble emulation in the youth: which, no doubt, adds he, would be much better than to banish them into the country, to the gardens and other places of pleasure of private men.

Accordingly Aristotle says, that sculptors and painters instruct men to form their manners by a much shorter and more effectual method than that of the philosophers; and that there are paintings as capable of making the most vicious reflect within themselves as the finest precepts of morality. St. Gregory Nazianzen relates a story of a courtesan, who, in a place where she did not come to make serious reflections, cast her eyes by accident on the picture of Polæmon, a philosopher famous for a change of life, that had something prodigious in it; which occasioned her to reflect seriously, and brought her to a due sense of herself. Cedrenus tells us, that a picture of the last judgment contributed very much to the conversion of a king of the Bulgarians. The sense † of seeing is far more lively than that of hearing; and an image, which represents an object in a lively manner, strikes us quite otherwise than

* Extat ejus (Agrippæ) oratio magna, & maximo civium digna, de tabulis omnibus signisque publicandis: quod fieri fatius fuisset, quam in villarum exilia pelli. *Plin.* l. 35. c. 4.

† Segnius irritant animos demissa per aures,
Quam quæ sunt oculis subjecti fidelibus.

HOR.

*Things by the ear a dull impression find,
To those the faithful eye presents the mind.*

Sic intimos penetrat sensus (pictura) ut vim dicendi nonnunquam superare videatur. *Quintil.*

a discourse. St. Gregory of Nyssa declares, that he was touched even to shedding of tears, at the sight of a painting.

This effect of painting is still more instant in regard to bad than good. * Virtue is foreign, vice natural to us. Without the help of guides or examples, (and those we meet with every-where) an easy propensity leads us to the latter, or rather hurries us on to it. What then must we expect, when sculpture, with all the delicacy of art, and painting, with all the vivacity of colours, unite to inflame a passion already but too apt to break out, and too ardent of itself? What loose ideas do not those naked parts of young persons suggest to the imagination, which sculptors and painters so commonly take the liberty to exhibit? † They may do honour to the art, but never to the artists.

Without speaking of Christianity in this respect, which abhors all licentious sculptures and paintings, the sages of the Pagan world, blind as they were, Aristot. in
condemn them almost with equal severity. Aristotle, Polit. l. 7.
in his books *De republica*, recommends it to magistrates, as one of the most essential parts of their duty, to be attentive in preventing statues and paintings of this kind from appearing in cities, as they are capable of teaching vice, and corrupting all the youth of a state. ‡ Seneca degrades painting and sculpture, and denies them the name of liberal arts, whenever they tend to promote vice. *Peccare docentes historias monet. HOR.*

* Ad deteriora faciles sumus; quia nec dux potest, nec comes deesse; & res etiam ipsa scire duce, sine comite procedit: non primum est tantum ad vitia, sed præceps [iter.] *Senec. Epist. 97.*

† Non hic per nudam pictorum corporum pulchritudinem turpis prostat historia, quæ sicut ornat artem, sic devenustat artificem. *Sidon. Apollin. l. 11. Ep. 2.*

‡ Non enim adducor ut in numerum liberalium artium pictores recipiam, non magis quam statuarios aut marmorcos, aut cæteros luxuriæ ministris. *Senec. Ep. 88.*

Pliny the naturalist, all enthusiasm as he is, for the beauty of the antique works, treats as dishonourable and criminal the behaviour of a painter in this point, who was otherwise very famous: *Fuit Arel-
c. 10. lius Romæ ceber, nisi FLAGITIO INSIGNI corrupisset artem.* He expresses a just indignation against the sculptors, who carved obscene images upon cups and goblets, that people might not drink, in some measure, without obscenity; as if, says he, drunkenness did not sufficiently induce debauchery, and it were necessary to excite it by new attractions: *Vasa adulteriis cœlata, quasi per se parum doceat libidinem temulentia—Ita vina ex libidine hauriuntur, atque etiam præmio invitatur ebrietas.*

The very poets themselves declare warmly against this indecency. Propertius wonders, that temples are erected in public to chastity, whilst immodest pictures are tolerated in private houses, which cannot but corrupt the imaginations of young virgins; that, under the allurements of objects grateful to the eye, conceal a mortal poison to the heart, and seem to give public lessons of impurity. He concludes with saying, that those indecent figures were unknown to our ancestors; the walls of their apartments were not painted by obscene hands, to place vice in honour; nor exhibit it as a spectacle for admiration. The passage is too fine not to be inserted here at large.

Propert.
l. 2. Eleg.
5.

Templa Pudicitæ quid opus statuissè puellis,
Si cuivis nuptæ quidlibet esse licet?
Quæ manus obscœnas depinxit prima tabellas;
Et posuit castâ turpia visa domo:
Illa puellarum ingenuos corruptit ocellos,
Nequitiaque suæ noluit esse rudes.
Ah! gemat in terris, ista qui protulit arte
Jurgia sub tacita condita lætitia.
Non istis olim variabant tecta figuris:
Tum paries nullo crimine pictus erat.

Whence

*Whence rise these fanes to virgin modesty,
If every wife to every thing is free?
Who first obscenity in colours drew,
In the chaste house who plac'd it first to view,
Defil'd the harmless maid's ingenuous eyes,
And would not leave her ignorant of vice?
Woe to the man! whose vicious pencil taught
In grateful tints to urge a guilty thought:
Our fathers homes ne'er own'd these noxious arts;
No crimes were painted on their walls or hearts.*

We have seen a city, that had the choice of two statues of Venus, both done by Praxiteles, that is saying every thing, the one covered, and the other naked, prefer the former, though much the less esteemed, because more conformable to modesty and chastity. Can any thing be added to such an example? What a reproach were it to us, if we were ashamed to follow it!



CHAPTER VI. OF MUSIC.

THE MUSIC of the antients was a science of far greater extent than is generally imagined. Besides the composition of musical airs, and the execution of those airs with voices and instruments, to which ours is confined, the antient music included the art of poetry, which taught the rules for making verses of all kinds, as well as to set those susceptible of them to notes; the art of *Sal-tation*, dancing or gesture, which taught the step and attitude, either of the dance properly so called, or the usual manner of walking, and the gesture proper to be used in declaiming, contained also the art of composing and writing notes to the simple declamation; to direct as well the tone of the voice by those notes, as the degree and motions of gesture; an art very much in use with the antients, but absolutely unknown to us. All these different parts, which have actually a natural relation to each other, composed originally one and the same art, exercised by the same artists; though they divided in process of time, especially poetry, which became an order by itself.

I shall briefly treat all these parts, except that which relates to versification, which will have its place elsewhere; and shall begin with music properly so called, and such as it is known amongst us.

A R T I C L E I.

Of music properly so called.

MUSIC is an art, which teaches the properties of sounds capable of producing melody and harmony.

S E C T. I.

Origin and wonderful effects of music.

SOME authors pretend, that the birds learnt men to sing, in suggesting by their various notes and warbling, how capable the different modulations and tones of the voice are of pleasing the ear: But man had a more excellent master, to whom alone he ought to direct his gratitude.

The invention of music, and of the instruments in which a principal part of it consists, is a present from God, as well as the invention of the other arts. It adds to the simple gift of speech, which of itself is so highly valuable, something more lively, more animated, and more proper to give utterance to the sentiments of the soul. When it is penetrated and fired with some object that strongly possesses it, the usual language does not suffice for its transports. It springs forth in a manner out of itself, it abandons itself to the emotions that agitate it, it invigorates and redoubles the tone of the voice, and repeats its words at different pauses; and not contented with all these efforts, calls in instruments to its aid, which seem to give it ease, by lending sounds a variety, extent, and continuation, which the human voice could not have.

This

This gave birth to music, made it so affecting and estimable, and shews at the same time, that properly speaking, its right use is in religion solely, to which alone it belongs, to impart to the soul the lively sentiments which transport and ravish it, which exalt its gratitude and love, which are suited to its admiration and extacies, and which make it experience that it is happy, in applauding, to use the expression, its joy and happiness, as David did in all his divine songs, that he employs solely in adoring, praising, giving thanks, and singing the greatness of God, and proclaiming the wonders of his power.

Such was the first use men made of music, simple, natural, and without art or refinement in those times of innocence, and in the infancy of the world; and without doubt the family of Seth, with whom the true worship was deposited, preserved it in all its purity. But secular persons, more inflamed to sense and passion, and more intent upon softening the pains of this life, upon rendering their exile agreeable, and alleviating their distresses, abandoned themselves more readily to the charms of music, and were more industrious to improve it, to reduce it into an art, to establish their observations upon certain rules, and to support, strengthen, and diversify it by the help of instruments.

Gen. iv.
21.

The Scripture accordingly places this kind of music in the family of Cain, which was that of the outcasts, and makes Jubal, one of the descendants of that chief of the unrighteous, the author of it. And we see in effect, that music is generally devoted to the objects of the passions. It serves to adorn, augment, and render them more affecting; to make them penetrate the very soul by additional charms; to render it the captive of the senses; to make it dwell wholly in the ears; to inspire it with

a new

new propensity to seek its consolation from without; and to impart to it a new aversion for useful reflections and attention to truth. The abuse of music, almost as antient as its invention, has occasioned Jubal to have more imitators than David. But this ought not to cast any reproach upon music itself. For, as Plutarch observes upon this subject, few or no persons of reason will impute to the sciences themselves the abuse some people make of them: which is solely to be ascribed to the disposition to vice of those who profane them.

Plut. de
Mus. p. 1146.

This exercise has in all times been the delight of all nations, of the most barbarous, at well as of those who valued themselves most upon their civility. And it must be confessed, that the * Author of nature has implanted in man a taste and secret tendency for song and harmony, which serve to nourish his joy in times of prosperity, to dispel his languish in affliction, and to comfort him in supporting the pains and fatigues of his labours. There is no artificer that has not recourse to this innocent invention; and the slightest air makes him almost forget all his fatigues. The harmonious cadence with which the workmen strike the glowing mass upon the anvil, seems to lessen the weight of their heavy hammers. The very rowers experience a kind of relief in the sort of concert formed by the harmonious and uniform motion of their oars. The antients successfully employed musical instruments, as is still the custom, to excite martial ardor in the hearts of the soldiery; and Quintilian

* Atque eam (musicam) natura ipsa videtur ad tolerandos facilius labores velut muneri nobis dedisse. Si quidem & remiges canus hortatur: nec solum in iis operibus in quibus plurimum conatus preceunte aliqua jucunda voce conspirat, sed etiam singulorum fatigatio quamlibet se radi modulatione solatur. *Quintil.* l. 1. c. 10.

† Duces maximos & fidibus & tibus cecinisse traditum, & excreto: Lacedaemoniorum musicis accensos motu. Quid autem aliud a nostris Legionibus cornua ac tubae faciunt? quorum concentus, quanto est vehementior, tanto Romana in bellis gloria caeteris praestat. *Quintil.* l. 1. c. 10.

partly

partly ascribes the reputation of the Roman troops to the impressions made by the warlike sounds of fifes and trumpets upon the legions.

I have said, that music was in use amongst all nations: but it was the Greeks who placed it in honour, and by the value they set upon it, raised it to a very high degree of perfection. * It was a merit with their greatest men to excel in it, and a kind of shame to be obliged to confess their ignorance in it. No hero ever made Greece more illustrious than Epaminondas: his dancing gracefully, and touching musical instruments with skill, were reckoned amongst his fine qualities. Some years before his time, the refusal of Themistocles, at a feast, to play an air upon the lyre, was made a reproach, and was a kind of dishonour to him. To be ignorant of music passed in those times for a great defect of education.

It is in effect of this that the most celebrated philosophers, who have left us treatises upon policy, as Plato and Aristotle, particularly recommended the teaching of music to young persons. Amongst the Greeks it was an essential part of education. Besides which, it has a necessary connection with that part of Grammar called *Prosody*, which treats upon the length or shortness of syllables in pronunciation, upon the measure of verses, their rhyme and cadence, (*or pauses*;) and principally upon the manner of accenting words: the antients were assured that it might conduce very much to form the manners of youth, by introducing a kind of harmony into them, which might incline them

* Summam eruditionem Græci sitam censabant in nervorum vocumque cantibus. Igitur Epaminondas princeps, meo iudicio, Græciæ, fidibus præclarè cecinisse dicitur: Themistoclesque, aliquot ante annis, cum in epulis recusasset lyram, habitus est indoctior. Ergo in Græciâ musici floruerunt, discabantque id omnes; nec, qui nesciebat, satis excultus doctrinâ putabatur. *Cic. Tusc. 1. n. 4.*

In eius Epimanondæ virtutibus commemorabatur, salâsse eum commodè, scienterque tibi cantâsse. *Corn. Nep. in præfat.*

to whatsoever was laudable and polite; nothing being of greater use, according to Plutarch, than music to excite persons at all times to virtuous actions, and especially to confront the dangers of war.

Plut. de
MUSIC.
P. 1140.

Music was far from being much esteemed in the happy times of the republic. It passed in those days for a thing of little consequence, as Cornelius Nepos tells us, where he observes, upon the different taste of nations, in regard to several things. Sallust's reproach of a Roman lady, that she knew better how to sing and dance, than was consistent with the character of a woman of honour and probity; *saltare & psallere elegantius quam necesse est probæ*; sufficiently shews what the Romans thought of music. As to dancing, they had a strange idea of it; and would say, that, to practise it, one should either be drunk or mad: *Nemo saltat fere sobrius, nisi forte insanit*. Such was the Roman severity, till their commerce with the Greeks, and still more, their riches and opulence made them give into the excesses, with which the Greeks cannot so much as be reproached.

In præfat.

In bell.
Catilin.

Cic. in
orat. pro
Muræ.
n. 13.

The antients attributed wonderful effects to music; either to excite or suppress the passions, or to soften the manners, and humanize nations naturally savage and barbarous.

Pythagoras, * seeing a young stranger, who was heated with the fumes of wine, and at the same time animated by the sound of a flute, played on in the Phrygian measure, upon the point of committing violence in a chaste family, restored the young man's tranquillity and reason, by ordering the female minstrel to change the measure, and to play in more solemn and serious numbers, according to the cadence called after the foot *Spondeæ*.

* Pythagoram accepimus, concitatos ad vim pudicæ domui afferendam juvenes, jussa mutare in spondæum modos tibia, composuisse. *Quintil.* l. 1. c. 10.

De placit.
Hippoc. &
Plat. l. 5.
c. 6.

Galen relates something exactly of the same nature, of a musician of Miletus, named Damon. He tells us of some young people, that a female performer upon the flute had made frantic, by playing in the Phrygian measure, and whom she brought to their senses again, by the advice of this Damon, in changing the music from the Phrygian to the Doric measure.

Orat. 1.
de regn.
init.

Dion Chrysostome, and some others, inform us, that the musician Timotheus, playing one day upon the flute before Alexander the Great, in the measure called *Ὀστράκον*, which is of the martial kind, that prince immediately ran to his arms. Plutarch says almost the same thing of Antigenides the fluttenist, who at a banquet fired that prince in such a manner, that, rising from the table like one out of his senses, he caught up his arms, and clashing them to the sound of the flute, was almost ready to charge the guests.

De fortun.
Alex. p.
335.

Amongst the wonderful effects of music, nothing more affecting perhaps, nor better attested, can be instanced, than what regards the Arcadians. Polybius, a wise, exact historian, well worthy of entire belief, is my authority. I shall only abridge his narrations and reflections.

Polyb. l. 4.
p. 289,
291.

The study of music, says he, has its utility with all men, but is absolutely necessary to the Arcadians. This people, in establishing their republic, though otherwise very austere in their manner of life, had so high an opinion of music, that they not only taught that art to their children, but obliged young people to apply to it till the age of thirty. It is not shameful amongst them to profess themselves ignorant of other arts: but it is highly dishonourable not to have learnt to sing, and not to be able to give proofs of it on occasion.

Now, says Polybius, their first legislators seem to me, in making such institutions, not to have designed to introduce luxury and effeminacy, but only

only to soften the ferocity of the Arcadians, and to divert, by the practice of music, their gloomy and melancholy disposition, undoubtedly occasioned by the coldness of the air, which the Arcadians breathe almost throughout their whole country.

But the Cynethians having neglected this aid, of which they had the most need, as they inhabited the rudest and most savage part of Arcadia, both as to the air and climate, at length became so fierce and barbarous, that there was no city in Greece wherein so great and so frequent crimes were committed, as in that of Cynethia.

Polybius concludes this account, with observing; that he had insisted the more upon it for two reasons. The first, to prevent any of the Arcadian states, out of the false prejudice that the study of music is only a superfluous amusement amongst them; from neglecting that part of their discipline. The second; to induce the Cynethians to give music the preference to all other sciences, if ever God (the expression is remarkable) if ever God should inspire them to apply themselves to arts that humanize a people. For that was the sole means to correct their natural ferocity.

I do not know whether it be possible to find any thing in antiquity which equals the praise Polybius here gives music: and every one knows what kind of personage Polybius was. Let us add here what the two great lights of the ancient philosophy, Plato and Aristotle, say of it, who frequently recommend the study of it, and very much extol its advantages. Can a more authentic and favourable testimony be desired? But that the authority of these great men may not impose upon us, I ought here to mention what kind of music they would be understood to mean. Quintilian, who had the same Quintil. thoughts upon this head, will explain their opi- l. 1. c. 10. nion: it is in a chapter, where he had given music the highest praise. “ Though the examples I

“ have cited, says he, sufficiently shew what species of music I approve, I think myself, however, obliged to declare here, that it is not the same with which the theatres in these days resound, that by its wanton and effeminate airs, has not a little contributed to extinguish and suppress in us whatever remained of our antient manly virtue:” *Apertius profitendum puto, non hanc a me præcipi, quæ nunc in scenis effeminata, & impudicis modis fracta, non ex parte minima, si quid in nobis virilis roboris manebat, excidit.* “ When I recommend music therefore, it is that of which men filled with honour and valour made use, in singing the praises of others like themselves. It is as far from my intent to mean here those dangerous instruments, whose languishing sounds convey softness and impurity into the soul, and which ought to be held in horror by all persons of sense and virtue. I understand that agreeable art of affecting the soul by the powers of harmony, in order either to excite or assuage the passions, according to occasion and reason.”

It is this sort of music that was in so much esteem with the greatest philosophers and wisest legislators amongst the Greeks; because it civilizes savage minds, softens the roughness and ferocity of dispositions, renders people more capable of discipline, makes society more grateful and joyous, and gives horror for all the vices which incline men to inhumanity, cruelty and violence.

It is not without its advantages to the body, and conduces to the cure of certain distempers. What is related of the wonderful effects of music, upon such as have been bit by the Tarantula, would appear incredible, if not supported by authorities, to which we cannot, with reason, refuse our belief.

*Memoirs of
the Acad.
of Sciences.
An. 1702.*

The Tarantula is a large spider with eight eyes, and as many legs. It is not only to be found about

Tarento,

Taranto, or in Puglia; but in several other parts of Italy, and in the island of Corsica.

Soon after a man is bit by a Tarantula, the part affected feels a very severe pain, succeeded in a few hours by a numbness. He is next seized with a profound melancholy, can scarce respire; his pulse grows faint, his sight is interrupted and suspended, till at last he loses all sense and motion, and dies, unless assisted in time. Physicians use several remedies for the cure of this illness; which would be useless, if music did not come in to their aid.

When the person bit is without sense and motion, a performer upon musical instruments tries different airs; and, when he hits upon that which in its tones and modulation suits the patient, he begins to stir a little; at first he moves his fingers to the time, then his arms and legs, and by little and little his whole body; at last he gets up and dances, continually increasing his activity and force. Some of these will dance six hours without resting. After this they are put to bed, and, when it is supposed that they have sufficiently recovered their first dance, they are brought out of bed by the same tune to begin again. This exercise continues several days, about six or seven at most, till the patient finds himself tired, and incapable to dance any longer, which denotes his being cured. For, as long as the poison operates upon him, he would dance, if he were suffered, without ceasing, and die by exhausting his spirits. The patient, that begins to perceive himself weary, recovers his understanding and senses by degrees, and comes to himself, as if he waked out of a deep sleep, without remembering what had past during his disorder, not even his dancing. This is a very extraordinary case, but absolutely true; of which I must leave it to physicians to explain the cause.

S E C T. II.

Inventors and improvers of music, and musical instruments.

THE profane historians ascribe the discovery of the first rules of music to their fabulous Mercury, others to Apollo, and some to Jupiter himself. They undoubtedly intended thereby to insinuate, that so useful an invention ought to be attributed only to the gods, and that it was an error to do any man whatsoever the honour of it.

Plutarch's treatise upon music, explained and set in a true light by the learned remarks of Mr. Burette, will supply me with a great part of what I shall relate of the history of those, who are said to have contributed most the improvement of this art. I shall content myself with simply pointing out the most antient, who are almost known only in fabulous history, without confining myself to the order of time.

A M P H I O N.

Amphion is held by some to be the inventor of the * *Cithara*, or lyre; for these two instruments were very little different, as I shall shew in the sequel, and are often confounded with each other by authors. It is conjectured, that the fable of Thebes being built by the sound of Amphion's lyre, is later than Homer's time, who does not mention it, and would not have failed to have adorned his poems with it, had he known it.

The cotemporaries of Amphion were *Linus*, *Antbes*, *Picrius*, and *Philammon*. The last was

* I shall call this instrument so, as often as I shall have occasion to speak of it; because our Guitar or Lute, which derives its name from it, is a quite different kind of instrument.

father of the famous Thamyris, the finest voice of his time, and the rival of the muses themselves, who having been abandoned to the vengeance of those goddesses, lost his sight, voice, understanding, and even the use of his lyre.

O R P H E U S.

The reputation of Orpheus flourished from the expedition of the Argonauts, of which number he was; that is to say, before the Trojan war. Linus was his master in music, as he was also of Hercules. Orpheus's history is known by all the world.

H Y A G N I S.

Hyagnis is said to have been the first player upon the flute. He was the father of Marfyas, to whom the invention of the flute is ascribed. The latter ventured to challenge Apollo, who only came off victor in this dispute, by joining his voice with the sound of his lyre. The vanquished was fled alive.

O L Y M P I U S.

There were two of this name, both famous players upon the flute. The most antient, who was by birth a Mysian, lived before the Trojan war. He was the disciple of Marfyas, and excelled in the art of playing upon string-instruments.

The second Olympius was a Phrygian, and flourished in the time of Midas.

D E M O D O C U S. P H E M I U S.

Homer praises these two musicians in several parts of the *Odyssy*. Demodocus had composed two poems: the one upon the taking of Troy, the other upon the nuptials of Venus and Vulcan.

Homer makes them both sing in the palace of Alcinous king of the Pheacians, in the presence of Ulyffes. He speaks of Phemius as of a singer inspired by the gods themselves. It is he who, by the singing of his poetry fet to music, and accompanied with the sounds of his lyre, inlivens the banquets, in which the suitors of Penelope pass whole days.

The author of the life of Homer ascribed to Herodotus affirms, that Phemius settled at Smyrna; that he taught youth grammar and music, and married Critheis there, whose illegitimate son Homer was. He tells us, Homer was born before this marriage, and was educated with great care by his father-in-law, after he had adopted him.

TERPANDER.

Authors do not agree with each other concerning Terpander's country, nor the time in which he lived. Eusebius places it in the 33d olympiad. This epocha ought to be of later date, if it be true, that this poet and musician was the first who obtained the prize in the Carnian games, which were not instituted at Lacedæmon till the 36th olympiad.

Besides this victory, which did great honour to Terpander's ability in musical poetry, he signalized himself by this art upon several other very important occasions. Much is said of the sedition, which he had the address to appease at Lacedæmon by his melodious songs, accompanied with the sounds of his Cithara. He also carried the prize four times successively at the Pythian games.

It appears that, the elder Olympius and Terpander having found the lyre in their youth only with four strings, they used it as it was, and distinguished themselves by their admirable execution upon it. In process of time, to improve that instrument, they

they both made additions to it, especially Terpander, who made its strings amount to seven.

This alteration very much displeas'd the Lacedæmonians, amongst whom it was expressly forbidden to change or innovate any thing in the antient music. Plutarch tells us, that Terpander had a fine laid on him by the Ephori, for having added a single string to the usual number of the lyre; and had his own hung up by a nail for an example. From whence it appears, that the lyre of those times was already string'd with six chords.

From what Plutarch says, it appears, that Terpander at first compos'd lyric poems in a certain measure, proper to be sung, and accompanied with the Cithara. He afterwards set these poems to such music, as might best suit the Cithara, which at that time repeated exactly the same sounds as were sung by the musician. In fine, Terpander put the notes of this music over the verses of the songs compos'd by him, and sometimes did the same upon Homer's poems: after which he was able to perform them himself, or cause others to do so, in the public games.

Prizes of poetry and music, which were seldom or ever separate, were propos'd in the four great games of Greece, especially in the Pythian, of which they made the greatest and most considerable part. The same thing was also practis'd in several other cities of the same country, where the like games were celebrated with great solemnity, and a vast concourse of spectators.

P H R Y N I S.

Phrynus was of Mitylene, the capital of the island of Lesbos. He was the scholar of Aristoclitus for the harp, and could not fall into better hands, that master being one of Terpander's descendants. He is said to have been the first who
obtained

obtained the prize of this instrument in the games of the Panathenea, celebrated at Athens the fourth year of the 80th olympiad. He had not the same success, when he disputed that prize with the musician Timotheus.

Phrynis may be considered as the author of the the first alterations made in the antient music; with regard to the Cithara. These changes consisted, in the first place, in the addition of two new strings to the seven, which composed that instrument before him; in the second place, in the compass and modulation, which had no longer the noble and manly simplicity of the antient music. Aristophanes reproaches him with it in his comedy of *the Clouds*; wherein Justice speaks in these terms of the antient education of youth. *They went together to the house of the player upon the Cithara—where they learned the hymn of the dreadful Pallas, or some other song, which they sung according to the harmony delivered down to them from their ancestors. If any of them ventured to sing in a buffoon manner, or to introduce inflections of voice, like those which prevail in these days in the airs of Phrynis, he was punished severely.*

Phrynis having presented himself in some public games at Lacedæmon, with his Cithara of nine strings, Ecprepes, one of the Ephori, would have two of them cut away, and suffered him only to chuse whether they should be the two highest or the two lowest. Timotheus, some short time after, being present upon the same occasion at the Carnian games, the Ephori acted in the same manner with regard to him.

TIMOTHEUS.

Timotheus, one of the most celebrated musician poets, was born at Miletus, an Ionian city of Caria, in the third year of the 93d olympiad. He flourished at the same time with Euripides and Philip

Philip of Macedon, and excelled in lyric and dithyrambic poetry.

He applied himself particularly to music, and playing on the Cithara. His first endeavours were not successful, and he was hissed by the whole people. So bad a reception might have discouraged him for ever; and he actually intended to have entirely renounced an art, for which he did not seem intended by nature. Euripides undeceived him in that mistake, and gave him new courage, by making him hope extraordinary success for the future. Plutarch, in relating this fact, to which he adds the examples of Cimon, Themistocles, and Demosthenes, who were reassured by counsels of a like nature, observes with reason, that it is doing the public great service, to encourage young persons in this manner, who have a fund of genius and fine talents; and to prevent their being disgusted in effect of some faults, they may commit in an age subject to error, or of some bad successes, which they may at first experience in the exercise of their profession.

Euripides was not deceived in his views and expectation. Timotheus became the most excellent performer upon the Cithara of his times. He greatly improved this instrument, according to Pausanias, by adding four strings to it, or, as Suidas tells us, only two, the tenth and eleventh to the ninth, of which the Cithara was composed before him. Authors differ extremely upon this point, and often even contradict themselves about it.

This innovation in music had not the general approbation. The Lacedæmonians condemned it by a public decree, which Bæotius has preserved. It is wrote in the dialect of the county, in which the prevalent consonant *ῥω* renders the pronunciation very rough; *ἔπει τὰς Τιμίθεος ὁ Μιλήσιος παραγνώμητος ἐς τῶν ἀμείτερον πόλιν, &c.* and contains in substance: That Timotheus of Miletus having come to their city, had

had expressed little regard for the antient music and lyre; that he had multiplied the sounds of the former, and the strings of the latter; that, to the antient, simple, and uniform manner of singing, he had substituted one more complex, wherein he had introduced the chromatic kind; that, in his poem upon the delivery of Semele, he had not observed a suitable decency: that to obviate the effects of such innovations, which could not but be attended with consequences pernicious to good manners, the kings and the Ephori had publicly reprimanded Timotheus, and had decreed, that his lyre should be reduced to seven strings as of old, and that all those of a modern invention should be retrenched, &c. This fact is related by Athenæus, with this circumstance, that when the executioner was upon the point of cutting away the new strings conformable to the decree, Timotheus having perceived in the same place a small statue of Apollo, with as many strings upon the lyre as there were upon his, he shewed it to the judges, and was dismissed acquitted.

His reputation drew after him a great number of disciples. It is said, that he took twice the sum of those, who came to learn to play upon the flute, (or the Cithara) if they had been taught before by another master. His reason was, that when an excellent musician succeeded such as were indifferent, he had double the pains with the scholar: that of making him forget what he had learnt before, the far greater difficulty; and to instruct him anew.

ARCHILOCHUS.

Archilochus rendered himself equally famous for poetry and music. I shall speak of him in the sequel under the title of a poet. In this place I consider him only as a musician; and of all that Plu-
tarch

tarch says of him upon that head, I shall only repeat the passage, wherein he ascribes to him *the musical execution of Iambic verses, of which some are only spoken whilst the instruments play, and others are sung.*

This passage, says Mr. Burette, shews us, that in Iambic poetry there were verses merely declamatory, which were only repeated or spoken; and that there were others which were sung. But what this same passage perhaps includes, that is not so well known, is, that these *declamatory* Iambics were accompanied with the sound of the Cithara, and other instruments of the string kind. It remains to know in what manner this accompanying verses spoken was performed. According to all appearance, the player upon the Cithara did not only give the poet or actor the general tone of his utterance, and support him in it by the monotony of his playing; but, as the tone of the speaker or declaimer varied according to the different accents, which modified the pronunciation of each word, in order to make this kind of declamation the more distinct; it was necessary that the instrument of music should make all these modifications more sensible, and exactly mark the number or cadence of the poetry, which served it as a guide; and which, in effect of being so accompanied, though not sung, became the more expressive and affecting. In regard to the poetry *sung*, the instrument that accompanied it, conformed its notes fervilely to it, and expressed no other sounds, but those of the poet-musician's voice.

A R I S T O X E N U S.

Aristoxenus was born at Tarentum, a city of Italy. He was the son of the musician Mnesias. He applied himself equally to music and philosophy. He was first the disciple of his father, then of

of Xenophilus the Pythagorean, and lastly of Aristotle, under whom he had Theophrastus for the companion of his studies. Aristoxenus lived therefore in the time of Alexander the Great, and his first successors.

Of four hundred and fifty-two volumes which Suidas tells us he composed, only his three books of *the Elements of Harmony* now remain, which is the most antient treatise of music come down to us.

Heraclid.

He warmly attacked Pythagoras's system of music. That philosopher, with the view of establishing an unalterable certitude and constancy in the arts and sciences in general, and in music in particular, endeavoured to withdraw its precepts from the fallacious evidence and report of the senses, to subject them solely to the determinations of reason. Conformably to this design, he was for having the harmonic powers or musical consonance, instead of being subjected to the judgment of the ear which he looked upon as an arbitrary measure of little certainty, to be regulated solely by the proportions of numbers that are always the same. Aristoxenes maintains, that to mathematical rules and the ratio of proportions, it was necessary to add the judgment of the ear, to which it principally belonged, to determine in what concerned music. He attacked the system of Pythagoras in many other points.

Setericus, one of the speakers, introduced by Plutarch in his treatise upon music, is convinced that sensation and reason ought to concur in the judgment pass upon the different parts of music so that the former do not prejudice the latter by too much vivacity, nor be wanting to it upon occasion, through too much weakness. Now the sense in the present question, that is, the hearing necessarily receives three impressions at once: that of the *sound*, that of the *time* or *measure*, and the

of the *letter*; the progression of which conveys the *modulation*, the * *rhyme*, and the *words*. And as there can be no adequate perception of these three things separately, and each cannot be followed alone, it seems that only the soul or reason has a right to judge of what this progression or continuity of *sound*, *rhyme*, and *words*, may have of good or bad.

S E C T. III.

*The antient music was simple, grave, and manly;
When and how corrupted.*

AS amongst the antients, music, by its origin and natural destination, was consecrated to the service of the gods, and the regulation of the manners, they gave the preference to that, which was most distinguished by its gravity and simplicity. Each of these prevailed long, both in regard to vocal and instrumental music. Olympius, Terpander, and their disciples, at first used few strings on the lyre, and little variety in singing. Notwithstanding which, says Plutarch, all simple, as the airs of those two musicians were, which were confined to three or four strings, they were the admiration of all good judges.

The Cithara, very simple at first under Terpander, retained this advantage some time. It was not permitted to compose airs for this instrument, nor to change manner of playing upon it, either as to the harmony, or the cadence; and great care was taken to preserve in the antient airs, their peculiar tone or character: hence they were called *Nomes*, as being intended for laws and models.

Νόμος.
Lex.

* Rhyme, ῥυθμός. The time or measure. It may al^o signify a law in music.

The introduction of rhymes in the dithyrambic way; the multiplication of the sounds of the flute by Lafus, as well as of the strings of the lyre by Timotheus; and some other novelties introduced by Phrynis, Menalippides; and Philoxenus, occasioned a great revolution in the antient music. The comic poets, especially Pherecrates and Aristophanes; very often complained of it in the strongest terms. We see, in their pieces, music represented accusing with great warmth and severity those musicians of having entirely depraved and corrupted the art.

Plutarch, in several places of his works, complains also that to the manly, noble, and divine music of the antients, in which every thing was sublime and majestic, the moderns had substituted that of the theatre, which inspires nothing but vice and licentiousness. Sometimes he alledges Plato's authority to prove, that music, the mother of harmony, decency and delight, was not given to man by the gods only to please and tickle the ear, but to reinstate order and harmony in the soul, too often discomposed by error and pleasure. Sometimes he admonishes us, that we cannot be too much upon our guard against the dangerous charms of a depraved and licentious music, and points out the means of avoiding such a corruption. He declares here, that wanton music, dissolute and debauched songs, corrupt the manners; and that the musicians and poets ought to borrow from wise and virtuous persons the subjects of their compositions. In another place he cites the authority of Pindar who asserts that God made Cadmus hear a sublime and regular music, very different from those soft, light, effeminate strains, which had taken possession of human ears. And lastly, he explains himself more expressly upon it, in the ninth book of his *Symposiacks*. "The depraved music, which prevails in these days, says he, in injuring all the art

De Super-
stit. p. 167.

Symp. l. 7.
p. 704.

De audit.
poët. p. 19.

De Pyth.
Orac.
p. 397.

P. 748.

“ arts dependant upon it, has hurt none so much
 “ as dancing. For this, being associated with I
 “ know not what trivial and vulgar poetry, after
 “ having divorced itself from that of the antients,
 “ which was entirely divine, has usurped our the-
 “ atres, where it triumphs amidst a ridiculous ad-
 “ miration, and exercising a kind of tyranny, has
 “ subjected to itself a species of music of little or
 “ no value: But at the same time, it has actually
 “ lost the esteem of all those, who for their genius
 “ and wisdom, are considered as divine persons.”

I leave it to the reader to apply to our times, what Plutarch says of his, in regard to music and the theatres.

It is no wonder that Plutarch complains thus of the depravation which had universally infected the music of his times, and made it of so little value. Plato, Aristotle, and their disciples, had made the same complaint before him; and that in an age so favourable as theirs to the improvement of polite arts, and so productive of great men in every kind. How could it happen, that, at a time when eloquence, poesy, painting, and sculpture, were cultivated with such success, music, for which they had no less attention, declined so much? Its great union with poetry was the principal cause of this, and these two sisters may be said to have had almost the same destiny. At first, each, confined to the exact imitation of what was most beautiful in nature, had no other view than to instruct whilst they delighted, and to excite emotions in the soul of equal utility, in the worship of the gods, and the good of society. For this end they employed the most suitable expressions, tours of thought, numbers, and cadences. Music, particularly, always simple, decent, and sublime, continued within the bounds prescribed her by the great masters, especially the philosophers and legislators, who were most of them poets and musicians. But the thea-

trical shews, and the worship of certain divinities, of Bacchus amongst the rest, in process of time, very much set aside these wise regulations. They gave birth to dithyrambic poetry, the most licentious of all in its expression, measure, and sentiments. It required a music of the same kind, and in consequence very remote from the noble simplicity of the antient. The multiplicity of strings, and all that vicious redundance of sound, and levity of ornament, were introduced to an excess, and gave room for the just complaints of all such as excelled, and had the best taste in this way.

S E C T. IV.

*Different kinds and measures of the antient music.
Manner of writing the notes to songs.*

TO speak of the antient music in general, and to give a slight idea of it, it is proper to observe, that there are three kinds of symphonies; the vocal, the instrumental, and that composed of both. The antients knew these three kinds of symphonies or concerts.

We must farther remark, that music had at first only three measures, which were a tone higher than one another. The gravest of the three was called the *Doric*; the highest the *Lydian*; and the middle the *Phrygian*: so that the *Doric* and *Lydian* included between them the space of two tones, or of a tercet or third major. By dividing this space into demi-tones, room was made for two other measures, the *Ionic* and *Eolean*; the first of which was inserted between the *Doric* and *Phrygian*; the second between the *Phrygian* and *Lydian*. Other measures were superadded, which took their denominations from the five first, prefixing the preposition *ὑπὲρ* above, for those above; and the preposition *ὑπο* below, for those below. The *Hyperdoric*,
the

the *Hyperionic*, &c. The *Hypodoric*, the *Hypoionic*, &c.

In some books of modern singing in churches, and at the end of some breviaries, to these different measures are referred the different tones now used in chanting divine service. The first and second tone belong to the Doric measure; the third and fourth to the Phrygian; and the rest to the Lydian and Mixolydian.

The manner of chanting in the church is in the Diatonic kind, which is the deepest, and agrees best with divine worship.

I return to the first division. The vocal symphony necessarily supposes several voices, because one person cannot sing several parts at the same time. When several persons sing in concert together, it is either in unison, which is called *Homophony*; or in the octave, and even the double octave; and this is termed *Antiphony*. It is believed that the ancients used also a third manner, which consisted in singing to a tercet or third.

The instrumental symphony, amongst the ancients, had the same differences as the vocal; that is to say, several instruments might play together in the unison, the octave, and the third.

To have two strings of an instrument, of the same substance, equally thick, and equally strained, express these accords with each other, all that is necessary is to make their lengths by certain proportions of number. For instance, if the two strings be equal in length, they are unisons; if as 1 to 2, they are octaves; if as 2 to 3, they are fifths; as 3 to 4, they are fourths; and, 4 to 5, they are third majors, &c.

The ancients, as well as we, had some instruments upon which a single performer could execute a kind of concert. Such were the double flute and the lyre.

The first of these instruments was composed of two flutes joined in such a manner, that the two

pipes had usually but one mouth in common to both. These flutes were either equal or unequal, in length or in the diameter of the bore. The equal flutes had the same, the unequal different, sounds, of which one was deep, the other high. The symphony, which the two equal flutes made, was in the unison, when the two hands of the performer stopped the same holes of each flute at the same time; or thirds, when he stopped different holes of both flutes. The diversity of sounds, resulting from the unequal flutes, could be only of two kinds, according to the flutes being either octaves or thirds; and in both cases the performer stopped the same holes of each flute at the same time, and in consequence formed a concert either in the octave or third.

By the lyre is meant here every musical instrument in general, with strings strained over a cavity for sound. The ancients had several instruments of this kind, which differed only in their form, their size, or the number of their strings; and to which they gave different names, though they often used one for the other. The chief of them were 1. the *Cithara*, *Κιθάρα*, from which the word Guitar is derived, though applied to a quite different instrument. 2. The *Lyre*, *Λύρα*, otherwise called *χέλυσ*, and in Latin *Testudo*, because the bottom resembled the scale of a tortoise, the figure of which animal (as it is said) gave the first idea of this instrument. 3. The *Τρίγωνον*, or triangular instrument, the only one that has come down to us under the name of the Harp.

The lyre, as I have said before, varied very much in the number of its strings. That of Olympus and Terpander had at first but three, which those musicians knew how to diversify with so much art, that, if we may believe Plutarch, they very much exceeded those who played upon lyres of a greater number. By adding a fourth string to
the

the other three, they made the * *Tetrachord* complete; and it was the different manner in which harmony was produced by these four strings, that constituted the three kinds of it, called the *Diatonic*, *Chromatic*, and *Inharmonic*. The *Diatonic* kind appertains to the common and ordinary music. In the *Chromatic*, the music was softened by lowering the sounds half a tone, which was directed by a coloured mark, from whence the Chromatic took its name *χρῶμα*, signifying *colour*. What is now called B flat belongs to the Chromatic music. In the *Inharmonic* music, on the contrary, the sounds were raised a demi-tone, which was marked, as at present, by a diesis. In the *Diatonic* music, the air or tune could not make its progressions by less intervals than the semi-tones major. The modulation of the *Chromatic* music made use of the semi-tones minor. In the *Inharmonic* music, the progression of the air might be made by quarter-tones.

Lib. 2. in
Somn.
Scipion,
c. 4.

Macrobius, speaking of these three kinds, says, the *Inharmonic* is no longer in use upon account of its difficulty; that the *Chromatic* is no longer esteemed, because that sort of music is too soft and effeminate; and that the *Diatonic* holds the mean between them both.

The addition of a fifth string produced the *Pentachord*. The lyre with seven strings, or the *Hep- tachord*, was more used, and in greater esteem than all others. However, though it included the seven notes of music, the octave was still wanting. Si-

Plin. l. 7.
c. 56.
Plut. de
Mus. p.
1141.

monides at length added it, according to Pliny,

* A passage in Horace, differently explained by M. Dacier and father Sanadon, has given learned dissertations upon the instrument called the *Tetrachord*.

multiplied, as we have observed, the strings of the lyre to the number of eleven. This number was still increased.

The lyre, with three or four strings, was not susceptible of any symphony. Upon the *Pentachord*, two parts might be played by thirds to each other. The more the number of strings increased upon the lyre, the easier it was to compose airs with different parts upon that instrument. The question is to know, whether the antients improved that advantage.

This question, which has been a matter of inquiry for about two ages, in regard to the antient music, and consists in knowing whether the Greeks and Romans were acquainted with that kind of it called *Counterpoint*, or concert in different parts, has occasioned different writings on both sides. The plan of my work dispenses with my entering into an examination of this difficulty, which I confess besides exceeds my capacity.

Martian.
Capel. de
nupt. Phi-
lol.

It is not unnecessary to know in what manner the antients noted their airs. With them, the general system of music was divided into eighteen sounds, of which each had its particular name. They invented characters to signify each tone: *συστήματα*, *signs*. All these figures were composed of a monogram, formed from the first letter of the particular name of each of the eighteen sounds of the general system. These signs, which served both for vocal and instrumental music, were written above the words upon two lines, of which the upper was for the voice, and the lower for the instruments. These lines were not larger than lines of common writing. We have some Greek manuscripts, in which these two species of notes are written in the manner I have related. From them the * hymns

* These hymns were written by a poet named Dionysius, little known in other respects.

to Calliope, Nemesis, and Apollo, as well as the strophe of one of Pindar's odes, were taken. Mr. Burette has given us all these fragments, with the antient and modern notes, in the fifth volume of the memoirs of the academy of Belles Lettres.

The characters, invented by the antients for writing musical airs, were used till the eleventh century, when Guy d'Arezzo invented the modern manner of writing them with notes placed on different lines, so as to mark the sound by the position of the note. These notes were at first no more than points, in which there was nothing to express the time or duration. But John de Meurs, born at Paris, and who lived in the reign of king John, found out the means of giving these points an unequal value, by the different figures of crotchets, minims, semi-briefs, quavers, semiquavers, &c. which he invented, and have since been adopted by all the musicians of Europe.

S E C T. V.

Whether the modern should be preferred to the antient music.

THE famous difference in regard to the antients and moderns is very warm upon this point; because, if the antient music was ignorant of the *Counterpoint*, or concert in different parts, that defect gives an indisputable right of preference to the modern. Admitting this to be real, which may with great reason always remain doubtful, I am not sure that the consequence is so certain. Might not the antients, in all other respects, have carried music to a degree of perfection the moderns have not attained, as well as all the other arts? (I do not say it is so, I speak only of its possibility;) and, if so, ought the discovery of the *Counterpoint* to give the latter an absolute preference

to the former? The most excellent painters of antiquity, as Apelles, used only four colours in their pieces. This was so far from being a reason to Pliny for diminishing any thing of their merit and reputation, that he admired them the more for it, and that they had excelled all succeeding painters so much, though the latter had employed a great variety of new tints.

But, to trace this question to the bottom, let us examine, whether the music of later times does actually and indisputably excel that of the antients; and this it is impossible for us to decide. It is not with music as with sculpture. In the latter, the cause may be tried by the evidence of the performances to be produced on both sides. We have statues and reliefs of the antients, which we can compare with our own; and we have seen Michael Angelo pass sentence in this point, and actually acknowledge the superiority of the antients. No musical work of theirs is come down to us, to make us sensible of its value, and to enable us to judge by our own experience, whether it be as excellent as our own. The wonderful effects, it is said to have produced, do not seem proofs sufficiently decisive.

There are still extant treatises on Didactics, as well Greek as Latin, which may lead us to the theory of this art: but can we conclude any thing very certain from them in regard to the practice of it? This may give us some light, some opening; but precepts are exceedingly remote from execution. Would treatises upon poetry alone suffice to inform us, whether the modern ought to be preferred to the antient poets?

In the uncertainty there will always be with regard to the matter in question, there is a prejudice very much in favour of the antients, which ought, in my opinion, to make us suspend our judgment. It is allowed, that the Greeks had wonderful talents for all arts; that they cultivated them with extraordinary

ordinary success, and carried most of them to a surprising degree of perfection. In architecture, sculpture, and painting, no-body disputes their supreme excellency. Now, of all these arts, there is not any so antiently or generally cultivated as music. This was not done only by a few private persons, who made it their profession, as in the other arts; but by all in general who had any care taken of their education, of which the study of music was an essential part. It was of general use in solemn festivals, sacrifices, and especially at meals, that were almost always attended with concerts, in which their principal joy and refinement consisted. There were public disputes and prizes for such as distinguished themselves most by it. It had a very peculiar share in chorus's and tragedies. The magnificence and perfection, to which Athens rose in every thing else that related to the public shews, is known: Can we imagine that city to have neglected only music? Can we believe, that those Attic * ears, so refined and exquisite in respect to the sound of words in common discourse, were less so in regard to the concerts of vocal and instrumental music, so much used in their chorus, and in which the most sensible and usual pleasure of Athens consisted? For my part, I cannot help being of opinion, that the Greeks, inclined as they were to diversions, and educated from their earliest youth in a taste for concerts, with all the aids I have mentioned, with that inventive and industrious genius they were known to have for all the arts, must have excelled in music as well as in all other arts. This is the sole conclusion I make from all the reasons I have advanced, without pretending to determine the preference in favour of either the antients or moderns.

I have not spoken of the perfection to which the Hebrew singers might have attained, in what re-

* Atticorum aures teretes & religiose. Cic,

guards vocal and instrumental music, to avoid mingling a species entirely sacred and devoted to religion, with one wholly profane and abandoned to idolatry, and all the excesses consequential upon it. We may presume that these singers, to whom the holy Scripture seems to ascribe a kind of inspiration and the gift of * prophecy, not to compose prophetic psalms, but to sing them in a lively and ardent manner, full of zeal and rapture, had carried the science of singing to as great a perfection as was possible. It was, no doubt, a grand, noble, and sublime kind of music, wherein every thing was proportioned to the majesty of its object, the Godhead, who, we may add, was its author: for he had vouchsafed to form his ministers and singers himself, and to instruct them in the manner which pleased him, to have his praises celebrated.

Nothing is so admirable as the order itself, which God had instituted amongst the Levites for the exercise of this august function. They were four thousand in number, divided into different bodies of which each had its chief; and the kind, as well as times, stated for the discharge of their respective duties. Two † hundred fourscore and eight were appointed to teach the rest to sing and play upon instruments. We see an example of this wonderful order in David's distribution of the parts of the sacred music, when he solemnized the carrying of the ark from the house of Obed-Edom into the citadel of Zion. The whole troop of musicians were divided into three chorus's. The first had

* *And Chenaniah, chief of the Levites, was for song (or PROPHECY:) he instructed about the song, because he was skilful.* 1 Chron. xv. 22.

David and the captains of the host separated to the service of the sons of Asaph, and of Heman, and of Jeduthun, who should PROPHESY with harps, with psalteries, and with cymbals, and the number of workmen according to their service was: 1 Chron. xxv. 1.

† — *With their brethren that were instructed in the songs of the Lord, even all that were cunning, two hundred fourscore and eight.* 1 Chron. xxv. 7.

hollow instruments of brass, that resounded exceedingly, unlike our kettle-drum, only in not being covered with skins, and having their hollow part laid over with double bars, which they struck on different parts of them. These sounds suited very well the sacerdotal trumpets that preceded them, and were very proper, by their lively, strong, and broken iterations, to awake the attention of the spectators. The second troop of sacred singers played in the treble, or higher, key, on a different instrument. The third chorus consisted of basses, that served to exalt and sustain these trebles, with which they always played in concert (*perhaps in unisons*) because directed by the same master of the singers.

It is easy to conceive, that the Levites, so numerous as they were, destined from father to son to this sole exercise, taught by the most skilful masters, and formed by long and continual habit, must have attained great excellency, and at length become consummate in all the beauties and delicacies of an art, in which they passed their whole lives.

This was the true intent of music. The most noble use, that men can make of it, is to employ it in rendering the continual homage of praise and adoration to the supreme majesty of God, who has created, and governs, the universe, and reserves so sacred an office for his faithful children. *Hymnus omnibus sanctis ejus.*

A R T I C L E II.

Of the parts of music peculiar to the antients.

I Shall treat in this second article on the other part of music in use amongst the antients, but unknown amongst us ; and shall confound them together, because they have a natural connection and it would be difficult to separate them without falling into tedious repetitions. I shall make great use of what is said upon these heads, in the critical reflections of the Abbé du Bos, upon poetry and painting.

S E C T. I.

Speaking upon the stage, or theatrical declamation composed and set to notes.

THE antients composed and wrote with note the declamation or manner of speaking upon the stage, which, however, was not singing to music and it is in this sense we should often understand in the Latin poets the words *canere*, *cantus*, and even *carmen*, which do not always signify singing properly so called, but a certain manner of speaking or reading.

According to Bryennius, this declaiming or speaking was composed with accents, and in consequence it was necessary, in writing it, to make use of the characters, which expressed those accents. At first they were only three, the acute, the grave and the circumflex. They afterwards amounted to ten, each marked with a different character. We find their names and figures in the antient Grammatarians. The accent is the certain rule by which the voice should be raised or depressed in the pronunciation

nunciation of every syllable. As the manner of sounding these accents was learnt at the same time with reading, there was scarce any body who did not understand this kind of notes.

Besides the help of accents, the syllables in the Greek and Latin languages had a determinate quantity; that is to say, they were either long or short. The short syllable had only one, and the long two seconds of time. This proportion between long and short syllables was as absolute, as that in these days between notes of different length. As two black notes in our music ought to have as much time, as one white one in the music of the ancients, two short syllables had neither more nor less than one long one. Hence, when the Greek or Roman musicians were to compose any thing whatsoever, they had no more to do, in setting the time to it, than to conform to the quantity of the syllables, upon which they placed each note.

I cannot avoid observing here by the way, that it is a pity the musicians amongst us, who compose hymns and motets, do not understand Latin, and are ignorant of the quantity of words; from whence it often happens, that upon short syllables, where they ought to run lightly, they insist and dwell a great while, as if they were long ones. This is a considerable fault, and contrary to the most common rules of music.

I have observed, that the declamation, or manner of speaking, of the actors upon the stage, was composed and written in notes, which determined the tone it was proper to take. Amongst many passages that demonstrate this, I shall content myself with choosing one from Cicero, where he speaks of Roscius, his cotemporary and intimate friend. Every body knows that Roscius became a person

* Longam esse duorum temporum, brevem unius, etiam pueri sciunt. *Quintil.* l. 9. c. 4.

of very great consideration, by his singular excellency in his art, and his reputation for probity. The people were so much prejudiced in his favour that, when he did not act so well as usual, they said it was either out of negligence or indisposition. *Noluit, inquit, agere Roscius, aut crudior fuit.* I fine, the highest degree* of praise, that they gave to a man, who excelled in his profession, was to say, he was a Roscius in his way.

Cic. de
Orat. l. 1.
n. 124.

Cicero, after having said that an orator, when he grows old, might soften his manner of speaking; quotes, as a proof and example of it, what Roscius declared, that, when he perceived himself grow old, he obliged the instruments to play in a slower time: *Quanquam, quoniam multa ad oratorum similitudinem ab uno Artifice sumimus, solet idem Roscius dicere, se, quo plus sibi ætatis accederet, eo tibiarum cantus & modos remissiores esse facturum.* Cicero accordingly, in a later work than that I have now cited, makes Atticus say, that actor had abated his declamation, or manner of speaking, by obliging the player on the flute, that accompanied him to keep a slower time with the sounds of his instrument: *Roscius, familiaris tuus, in senectute numeros & cantus remisit, ipsasque tardiores fecit tibias.*

De Orat.

l. 1. n. 254.

Cic. de
Leg. l. 1.
n. 11.

It is evident, that the *singing* (for it was often called so) of the dramatic pieces on the stages of the antients had neither divisions, recitative, continued quaverings, nor any of the characters of our musical singing: in a word, that this singing was only declaiming or speaking as with us. The manner of utterance was, however, composed, it was sustained by a continued base, of which the sound was proportioned, in all appearance, to that made by a man who declaims or pronounces speech.

* Jam diu consecutus est ut in quo quisque artificio excelleret, suo genere Roscius diceretur. *De Orat. l. 1. n. 130.*

O F M U S I C.

27

This may seem to us an absurd and almost incredible practice, but is not therefore the less certain; and, in matter of fact, it is useless to object any arguments. We can only speak by conjecture upon the composition which the continued base might play, that accompanied the actor's pronunciation. Perhaps it only played from time to time some long notes, which were heard at the passages, in which it was necessary for the actor to assume such tones as it was not easy to hit with justness; and thereby did the speaker the same service, as Gracchus received from the player upon the flute who always had near him, when he harangued, to give him at proper times the tones concerted between them.

S E C T. II.

Gesture of the stage composed and set to music.

MUSIC did not only regulate the tone of voice in speaking, but also the gesture of the speaker. This art was called *ὄρχησις* by the Greeks, and *Saltatio* by the Romans. Plato tells us, that this art consisted in the imitation of all the gestures and motions men can make. Hence we must not confine the sense of *Saltatio* to what our language means by the word *dancing*. This art, as the same author observes, was of great extent. It was designed not only to form the attitudes and motions which add grace to action, or are necessary in certain artificial dances, attended with variety of steps, but to direct the gesture, as well of the actors upon the stage, as the orators; and even to teach that manner of gesticulation we shall soon treat on, which conveyed meaning without the help of speech.

Plat. de
Leg. l. 7.
p. 814.

Quin-

OF MUSIC.

Quintilian * advises the sending of children, only for some time, to the schools where this art of *Salvation* was taught; but solely to acquire an easy and graceful action; and not to form themselves upon the gesture of dancing-masters, to which that of orators should be extremely different. He observes, that this custom was very antient, and had subsisted to his times without any objection.

Macrobius, however, has preserved a fragment of a speech of the younger Scipio Africanus wherein that destroyer of Carthage speaks warmly against this custom. “ Our youth, says he †, go
“ to the schools of the comedians to learn ‡ sing-
“ ing, an exercise, which our ancestors considered
“ as unworthy of persons of condition. Young
“ persons of both sexes go thither without blush-
“ ing, where they mingle with a crowd of the
“ most loose and abandoned minstrels.” The au-
thority of so wise a man as Scipio is of great weight on this head, and well deserves serious attention.

However it was, we find, that the antients took extraordinary pains to cultivate gesture, and both comedians and orators were very careful in this point. We have seen how industriously Demosthenes applied himself to it. || Roscius sometime disputed with Cicero, who best expressed the same thought in several different manners, each in his

* Cujus etiam disciplinæ usus in nostram usque ætatem sine reprehensione descendit. A me autem autem non ultra pueriles artes nos retinebitur, nec in his ipsis diu. Neque enim gestum oratorum componi ad similitudinem saltatoris volo, sed subesse aliquid ex hac exercitatione. *Quintil. l. i. c. ii.*

† Eunt in ludum lustrionum, discunt cantare quod majores nostri ingenis probra duci voluerunt. Eunt, inquam, in ludum saltatorium inter Cinædos, virgines puerique ingenui. *Macrobi. Saturna l. 2. c. 8.*

‡ As comedians are spoken of here, by the word cantare we may understand to speak or declaim after the manner of the theatre.

|| Et certè satis constat contendere cum (Ciceronem) cum histrionum solitum, utrum ille sæpius eandem sententiam variis gestibus efficeret, an ipse per eloquentiæ copiam sermone diverso pronunciare. *Macrobi. Saturna. l. 2. c. 10.*

own art; Roscius by gesture, and Cicero by speech. Roscius seems to have repeated that only by gesture, which Cicero first composed and uttered; after which judgment was given upon the success of both. Cicero afterwards changed the words or turn of phrase; without enervating the sense of the discourse; and Roscius, in his turn, was to give the sense by other gestures, without injuring his first mute expression by the change of manner.

S E C T. III.

Pronunciation and gesture divided upon the stage between two actors.

WE shall be less surpris'd at what I have said concerning Roscius, when we know, that the Romans often divided the theatrical Pronunciation between two actors, of whom the one pronounced, while the other made gestures. This again is one of the things not easily conceived, so remote is it from our practice, and so extravagant therefore does it appear.

Livy tells us the occasion for this custom. Livius Andronicus *, a celebrated poet, who first gave Rome a regular dramatic piece, in the five hundred and fourteenth year of that city, about an hundred and twenty years after shews of that kind had been introduced there, acted himself in one of his own pieces. It was usual at that time for the dramatic poets to mount the stage, and represent some character. The people, who took the liberty to cause

* Livius—idem scilicet, quod omnes tunc erant suorum carminum, actor dicitur, cum sepius revocatus vocem obtudisset, verâ peritâ puerum ad canendum ante tibicinem cum statuisset, canticum egisse aliquanto magis viginti motu quia nihil vocis usus impedi-
bat. Inde ad manum cantari histrionibus ceceptum, diverbiaque san-
tum ipsorum voce relicta. *Liv.* l. 7. n. 2.

Is (Livius Andronicus) sui operis actor, cum sepius a populo re-
vocatus vocem obtudisset, adhibito pueri & tibicinis concentu, ges-
ticulatorem tacitus peregit. *Tal. Max.* l. 2. c. 4.

the passage they liked to be repeated, by calling out *bis*, that is to say *encore*, made Andronicus repeat so long, that he grew hoarse. Not being capable of pronouncing any longer, he prevailed upon the audience to let a slave, placed behind the performer upon the instruments, repeat the verses, whilst Andronicus made the same gestures, as he had done in repeating them himself. It was observed, that his action was at that time much more animated than before, because his whole faculties and attention were employed in the gesticulation, whilst another had the care and trouble of pronouncing the words. From that time, continues Livy, arose the custom of dividing the parts between two actors; and to pronounce, in a manner, to the cadence of the comedian's gesture. And this custom has prevailed so much, that the comedians themselves pronounce no longer any thing besides the dialogue part. Valerius Maximus relates the same thing, which passages in many other authors confirm.

It is therefore certain, that the pronounciation and gesture were often divided between two actors; and that it was by established rules of music they regulated both the sound of their voices, and the motion of their hands and whole body.

We should be struck with the ridicule there would be in two persons upon our stage, of whom, one should make gestures without speaking, whilst the other repeated in a pathetic tone without motion. But we should remember, in the first place, that the theatres of the antients were much more vast than ours; and in the second place, that the actors played in masks, and that in consequence one could not distinguish sensibly, at a great distance, whether they spoke or were silent by the moving of the mouth, or the features of the face. They undoubtedly chose a *singer* (I mean him who pronounced) whose voice came as near as possible

to that of the comedian. This finger was placed in a kind of alcove, towards the bottom of the scene.

But in what manner could the rythmic music adapt itself to the same measure and cadence with the comedian that repeated, and him who made gestures? This was one of those things that, St. Augustin says, were known to all who mounted the stage, and for that reason he believed improper for him to explain. It is not easy to conceive what method the antients used to make both these players act in so perfect a concert, as scarce to be distinguished from one: but the fact is certain. We know that the measure was beat upon the stage, which the actor who spoke, he who made gestures, the chorus, and even the instruments, were to observe as their common rule. * Quintilian, after having said, that gesture is as much subservient to measure, as utterance itself, adds, that the actors, who gesticulate, ought to follow the signs given with the foot, that is to say, the time beat, with as much exactness, as those who execute the modulations; by which he means the actors who pronounce, and the instruments that accompany them. Near the actor who represented, a man was placed with iron shoes, who stamped upon the stage. It is natural to suppose, that this man's business was to beat the time with his foot, the sound of which was to be heard by all who were to observe it.

Lucian in
Orchest.
p. 951.

The extreme delicacy of the Romans (and as much may be said of the Greeks) in whatever concerned the theatre, and the enormous expences they were at in representations of this kind, give us reason to believe, that they carried all parts of them to a very great perfection; and in consequence that the distribution of single parts between two actors,

* Atqui corporis motui sua quedam tempora, & ad signa pedum non minus saltationi, quam modulationibus, adhibet ratio musica numeros. *Quintil.*

of which one spoke, and the other made gestures, had nothing in it, that was not highly agreeable to the spectators.

A comedian * at Rome, who made a gesture out of time, was no less hissed than one who was faulty in the pronunciation of a verse. † The habit of being present at the public shews, had made even the common people so nice in their ear, that they knew how to object to inflexions, and the most minute faults in tone, when repeated too often; even though they were of a nature to please, when introduced sparingly, and managed with art.

The immense sums devoted by the antients to the celebration of shews are hardly credible. The representation of three of Sophocles's tragedies, cost the Athenians more than the Peloponnesian war. What expences were the Romans at in building theatres and amphitheatres, and even in paying their actors? Æsopus, a celebrated actor of tragedy, Cicero's cotemporary, left at his death to the son, mentioned by Horace and Pliny as a famous spendthrift, an inheritance ‡ of two millions, five hundred thousand livres, (about an hundred and twenty thousand pounds) which he had amassed by acting. || Roscius, Cicero's friend, had a salary of above seventy-five thousand livres (about three thousand five hundred pounds) a year, and must have had more, as he had § five hundred livres (about twenty-three pounds) a day out of the pub-

Hor. Sat.
l. 2.
Plin. l. 10.
c. 51.

* *Histrion si paululum se moveat extra numerum, aut si versus pronuntiatus est syllaba una longior aut brevior, exhibetur & exproditur.* *Cic. in Parad.* 3.

† *Quanto mollis es sunt & delicatior in cantu flexiones & falsæ voculæ quam certæ & severæ: quibus tamen non modo austeri, sed, si sepius fiant, multitudo ipsa reclamatur.* *Cic. de Orat.* l. 3. n. 98.

‡ *Æsopum ex pari arte ducenties sestertium reliquisse filio constat.* *Macrob.* l. 2. c. 10.

|| *Quippe cum jam apud majores nostros Roscius histrion sestertium quinquaginta millia annua meruisse prodatur.* *Plin.* l. 7. c. 39.

§ *Tanta fuit gratia, ut merced in diurnam de publico mille denarios sine gregalibus solus acceperit.* *Macrob. Saturn.* l. 2. c. 10.

lic treasury, of which he paid no part to his company. Julius Cæsar gave above sixty thousand livres (about two thousand seven hundred and fifty pounds) to Laberius, to induce that poet to play a part in a piece of his own composing.

Macrob.
Saturn.
l. 2. c. 7.

I have repeated these facts, and there are an infinity of a like nature, to shew the exceeding passion of the Romans for public shews. Now is it probable, that a people who spared nothing for these shews, who made them their principal employment, or at least their most sensible pleasure; who piqued themselves upon the elevation and refinement of their taste in every thing beside; that this people, I say, whose delicacy could not suffer the least word ill pronounced, the least accent ill laid, or the least improper gesture, should admit this distribution of speech and gesture between two actors, so long upon the stage, if it had offended ever so little the eye or ear? We may believe, without prejudice, that a theatre, so much esteemed and frequented, had carried all things to a very high degree of perfection.

It was the music, that engrossed almost all honour in dramatic representations. It presided in the composition of plays: for of old its empire extended so far, and was confounded with poesy. It regulated the speech and gesture of the actors. It was applied to form the voice, to unite it with the sound of the instruments, and to compose a grateful harmony out of that union.

In ancient Greece the poets themselves composed the pronunciation for their pieces. *Musici, qui erant quondam idem poete*, says Cicero, in speaking of the ancient Greek poets who invented the music and form of verses. The art of composing declamation, or the pronunciation for dramatic performances, was a particular profession at Rome. In the titles at the head of Terence's comedies, we find, with the name of the author of the poem,

Cic. de
Orat. l. 3.
n. 174.

and that of the master of the company of comedians who acted it, his name also that had adapted the music to the words; in Latin, *Qui fecerat modos*.

Cicero uses the same expression, *facere modos*, to express those who composed the pronunciation of theatrical pieces. After having said, that Roscius purposely repeated some passages of his parts with a more negligent tone than the sense of the verses seemed to require, and threw shadowings into his gesture, to make what he intended to set off the stronger, he adds: "That the * success of this conduct is so certain, that the poets, and those who composed the pronunciation, were sensible of it as well as the comedians, and knew all of them how to employ it with advantage." These composers of pronunciation raised or depressed the tone with design, and artfully varied the manner of speaking. A passage was sometimes directed by the note, to be pronounced lower than the sense seemed to require, but then it was, because the elevation to which the actor's voice was to raise, at the distance of a verse or two, might have the stronger effect.

S E C T. IV.

Art of the Pantomimes.

TO conclude what relates to the music of the antients, it remains for me to speak of the most singular and wonderful of all its operations, though neither the most useful nor the most laudable; this was the performance of the Pantomimes.

* Neque id actores prius viderunt, quam ipsi poetæ, quam denique illi etiam qui fecerunt modos, a quibus utrisque submittitur aliquid, deinde augetur, extenuatur, inflatur, variatur, distinguitur. *Cic. de Orat.* l. 3. n. 1, 2.

The antients, not contented with having reduced, by the precepts of music, the art of gesture into method, had improved it to such a degree, that there were comedians who ventured to undertake to act all sorts of dramatic pieces, without speaking a syllable. They called themselves *Pantomimes*, because they *imitated* and expressed *whatever* they had to say by gestures, taught by the art of *Saltation* or dancing, without using the aid of speech.

Suidas and Zozyms inform us, that the art of the Pantomimes made its first appearance at Rome, in the reign of Augustus; which made Lucian say, that Socrates had seen the art of *dancing* only in its cradle. Zozyms even reckons the invention of this art amongst the causes of the corruption of the manners of the Roman people, and of the misfortunes of the empire. The two first introducers of this new art were Pylades and Bathyllus, whose names became afterwards very famous amongst the Romans; the first succeeded best in tragic subjects, and the other in comic.

What appears surprising is, that these comedians, who undertook to perform pieces without speaking, could not assist their expression with the motion of their faces; for they played in masks as well as the other actors. They began, no doubt, at first by executing some well known scenes of tragedies and comedies, in order to be the more easily understood by the spectators, and by little and little became capable of representing whole plays.

As they were not to repeat any thing, and had only gestures to make, it is easily conceived, that all their expression was more lively, and their action much more animated, than those of the common comedians. Hence * Cassiodorus calls the Pan-

* *Orchestrarum loquacissimæ manus, linguosi digiti silentium clamorosum, expositio tacite, quam musa Polhymnia reperisse narratur, ostendens homines posse sine oris afflatu velle suam declarare. Cassiod. Var. Epist. l. 4. Epist. 51.*

tomimes, men whose learned hands, to use that expression, had tongues at the end of each finger; who spoke in keeping silence, and who knew how to make an ample narration without opening their mouths: in fine, men whom Polhymnia, the muse that presided over music, had formed, in order to shew that she could express her sense without the help of speech.

Senec. in
Controv. 2.

Lucian de
Orchest.
p. 948.
Ibid. 940.

These representations, though mute, must have given a sensible pleasure, and transported the spectators. Seneca the father, whose profession was one of the gravest and most honourable of his times, confesses, that his taste for these Pantomimical representations was a real passion. Lucian says, that people wept at them, as at the pieces of the speaking comedians. He relates also, that some king in the neighbourhood of the Euxine sea, who was at Rome in Nero's reign, demanded of that prince, with great earnestness, a Pantomime, he had seen play, in order to make him his interpreter in all languages. "This man, said he, will make all
" the world understand him, whereas I am obliged
" to pay a great number of interpreters for corre-
" sponding with my neighbours, who speak several
" languages entirely unknown to me."

Certain it is, that the Romans were so charmed with the art of the Pantomimes from its birth, that it soon passed into the remotest provinces, and subsisted as long as the empire itself. The history of the Roman emperors more frequently mentions famous Pantomimes than celebrated orators.

This art, as we have observed, began in the reign of Augustus. That prince was exceedingly delighted with it, and Mæcenas was in a manner enchanted with Bathyllus. * In the first year of Tiberius, the senate was obliged to make a regulation to prohibit the senators from entering the houses

* Ne domos Pantomimorum senator introiret, ne egredientes in publicum Equites Romani cingerent. Tacit. *Annal.* l. i. c. 77.

of the Pantomimes, and the Roman knights from making up their train in the streets. Some years after, there was a necessity for banishing the Pantomimes out of Rome. The extreme passion of the people for their representations occasioned the forming cabals for applauding one in preference to another, and these cabals became factions. They even took different liveries, in imitation of those who drove the chariots in the races of the Circus. Some called themselves the *Blues*, and others the *Greens*. The people were divided also on their side, and all the factions of the Circus, so frequently mentioned in the Roman history, espoused different companies of Pantomimes, which often occasioned dangerous tumults in Rome.

Lucian de
Orchest.
l. 4. c. 14.

Cassiod.
Var. Epist.
l. 1. Epist.
20.

The Pantomimes were again expelled Rome under Nero and some other emperors. But their banishment was of no great duration; because the people could no longer be without them, and conjunctures happened, in which the sovereign, who believed the favour of the multitude necessary to him, endeavoured to please them by such means as were in his power. Domitian had expelled them, and Nerva his successor recalled them, though one of the wisest emperors Rome ever had. Sometimes the people themselves, tired with the unhappy effects of the cabals of the Pantomimes, demanded their expulsion with as much warmth as they had done their being recalled upon other occasions. *Neque a te minore concentu ut tolles Pantomimos, quam a patre tuo ut restitueret, excusum est*, says Pliny the younger, in speaking to Trajan. There are evils and disorders, which can only be prevented in their birth, and which, if time be allowed them to take root and gain credit, assume the upper hand, and become too strong for all remedies.

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T H E

H I S T O R Y

O F T H E

A R T S and S C I E N C E S

O F T H E

A N C I E N T S, &c.

O F T H E A R T M I L I T A R Y.

HITHERTO we have seen man established by the means of the arts in the enjoyment of all the conveniencies of life. The earth, cultivated by his care and labour, has supplied him, in return, with abundant riches of every kind. Commerce has brought him, from the most remote countries, whatever their inhabitants could spare: it has carried him down into the bowels of the earth, and to the bottom of the sea, not only to enrich and adorn him, but to supply himself with an infinity of helps and instruments necessary in his daily occasions. After having built himself houses, sculpture and painting have done their utmost in emulation of each other to adorn his abode; and, that nothing might be wanting to his satisfaction and delight, music has come in, to fill up his moments of leisure with grateful concerts, which rest and refresh him after his labours, and make him forget all his pains, and all his afflictions, if
he

he has any. What more can he desire? Happy, if he could not be disturbed in the possession of advantages, that have cost him so much. But the rapacious appetites, the avarice and ambition of mankind, interrupt this general felicity, and render man the enemy of man. Injustice arms herself with force, to enrich herself with the spoils of her brethren. He, who, moderate in his desires, confines himself within the bounds of what he possesses, and should not oppose force with force, would soon become the prey of others. He would have cause to fear, that jealous neighbours, and enemy states, would come to disturb his tranquillity, to ravage his lands, burn his houses, carry away his riches, and lead himself into captivity. He has therefore occasion for arms and troops, to defend him against violence, and ascertain his safety. At first we behold him employed in whatever the sciences have of most exalted and sublime: but, * at the first noise of arms, those sciences, born and nurtured in repose, and enemies of tumult, are seized with terror, reduced to silence, unless the art of war takes them under her protection, and places her safeguards over them, which can alone secure the public tranquillity. † Thus war becomes necessary to man, as the protectress of peace and repose, and solely employed to repel violence and defend justice; and it is in this light I believe it allowable for me to treat of it. I shall run over, as briefly as possible, all the parts of military knowledge, which, properly speaking, is the science of princes and kings, and requires, for succeeding in it, almost innumerable talents, which are very rarely to be found united in the same person.

* *Omnia hæc nostra præclara studia—latent in tutela ac presidio bellicæ virtutis. Simul atque increpuit suspicio tumultus, artibus illico nostræ conticebant. Cic. pro Mur. n. 21.*

† *Suscipienda bella sunt ob eam causam ut sine injuria in pacem vivatur. Cic. l. 1. de Offi. n. 35.*

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As I have elsewhere treated on what relates to the military affairs of the Egyptians, Carthaginians, Assyrians, and Persians, I shall speak the more sparingly of them in this place. I shall be more extensive upon the Greeks, and principally the Lacedæmonians and Athenians, which, of all the Grecian states, indisputably distinguished themselves most by their valour and military knowledge. I was long in doubt whether I should speak also of the Romans, who seem foreign to my subject. But, upon mature consideration, I thought it necessary to join them with other nations, that the reader, at one view, might know, at least in some measure, the manner in which the antients made war. This is the sole end I propose to myself in this little treatise, without intending any thing further. I have not forgot what happened to a philosopher of Ephesus, who passed for the finest speaker of his times. In an harangue, which he pronounced before Hannibal, he took upon him to treat at large on the duties of a good general. The orator was applauded by the whole audience. Hannibal, being pressed to give his opinion of him, replied, with the freedom of a soldier, that he had never heard a more contemptible discourse. I should apprehend incurring a like censure, if, after having passed my whole life in the study of polite learning, I should pretend to give lessons upon the art military to those who make it their profession.

CHAP.



CHAPTER I.

THIS first chapter contains what relates to the undertaking and declaring of war, the choice of the general and officers, the raising of troops, their provisions, pay, arms, march, incampment, and all that relates to battles.

ARTICLE I.

Undertaking and declaration of war.

SECT. I.

Undertaking of war:

THERE is no principle more generally received, than that which lays down, that war ought never to be undertaken except for just and lawful reasons; nor hardly any one more generally violated. It is agreed, that wars *, undertaken solely from views of interest or ambition, are real robberies. The pirate's answer to Alexander the Great, so well known in history, was exceedingly just and sensible. And had not the Scythians good reason to ask that ravager of provinces †, wherefore he came so far to disturb the tranquillity of nations, who had never done him wrong; and whether

* Inferre bella finitimis—ac populos sibi non molestos sola regni cupiditate conterere & subdere, quid aliud quam grande atrocium nominandum est? *S. Aug. de Civ. D. l. 4. c. 6.*

† Quid nobis tecum est? Nunquam terram tuam attigimus. Quis sis, unde venias, licetne ignorare in vallis sylvis viventibus? *Curt. l. 7. c. 8.*

it was a crime in them to be ignorant in their woods and desarts, remote from the rest of mankind, who and of what country Alexander was? When Philip*, Justin. l. 8. chosen arbiter between two kings of Thrace that c. 3. were brothers, expelled them both from their dominions, did he deserve a better name than that of thief and robber? His other conquests, though less flagrant crimes, were still but robberies, because founded upon injustice, and no means of conquering seemed infamous to him: *Nulla apud* Id. Justin. *eum turpis ratio vincendi.* The justice and necessity of wars ought therefore to be considered as fundamental principles in point of policy and government.

In monarchical states, generally, the prince only has power to undertake a war: which is one of the reasons that renders his office so much to be feared. For, if he has the misfortune to enter into it without a just and necessary cause, he is answerable for all the crimes committed in it, for all the fatal effects attending it, for all the ravages inseparable from it, and and all the human blood shed in it. Who can look without trembling upon such an object, and an account of so dreadful a nature?

Princes have councils, which may be of great assistance to them, if they take care to fill them up with wise, able, and experienced persons; such as are distinguished by their love and zeal for the good of their country, void of ambition views of interest, and above all infinitely remote from all disguise and flattery. When Darius proposed to his Herod. l. 4. c. 83. council the carrying of the war into Scythia, Artabanus his brother endeavoured at first in vain to dissuade him from so unjust and unreasonable a design: his reasons, solid as they were, were forced to give way to the enormous praises and excessive flattery

* Philippus, more ingenii sui, ad judicium veluti ad bellum, inopinantibus fratribus, instructo exercitu supervenit; & regno utrumque, non judicis more, sed fraude LATRONIS ac scelere, spoliavit.

Herod. l. 7.
c. 18.

of the courtiers. He succeeded no better in the counsel he gave his nephew Xerxes, not to attack the Greeks. As the latter had strongly expressed his own inclination, an essential fault in such conjunctures, he was far from being opposed, and the deliberation was no more than mere form. On both occasions, the wise prince, who had spoken his sentiments freely, was grieved to see, that neither of the two kings comprehended, * *how great a misfortune it is to be accustomed to set no bounds to one's desires, never to be contented with what we possess, and always to be solicitous for enlarging it: which is the cause of almost all wars.*

In the Grecian republics, the assembly of the people decided finally with regard to war, which method was subject to great inconveniencies. At Sparta indeed, the authority of the senate, and especially of the Ephori, as well as at Athens that of the Areopagus and council of four hundred, to whom the preparing of the public affairs belonged, served as a kind of balance to the levity and imprudence of the people: but this remedy had not always its effect. The Athenians are reproached with two very opposite faults, the being either too precipitate or too slow. Against the former a law had been made, by which it was ordained, that war should not be resolved till after a mature deliberation of three days. And in the wars against Philip we have seen, how much Demosthenes complained of the indolence of the Athenians, of which their enemy well knew how to make his advantage. This slowness, in republics, arises from this cause, unless the danger be evident, private persons are too much divided about their different views and interests, to unite speedily in the same resolution. Thus, when Philip had taken Elatæa, the Athenian orator, terrified with the urgent danger of the re-

* Ω; κακὸν εἶναι διδύσκειν τὴν ψυχὴν πλεονεξίᾳ διζέσθαι αὐτὴν ἔχει εἰς πλείονα.

public; caused the law I have mentioned to be repealed, and the war to be resolved on that instant.

The public affairs were examined and determined with much more maturity and wisdom amongst the Romans, though the people with them also had the decision. But the senate's authority was great, and almost always prevailed in important cases. That wise body were very attentive, especially in the earliest times of the republic, to have justice on their side in their wars. This reputation, for faith in treaties, equity; justice, moderation, and disinterestedness, was of no less service than the force of arms, in aggrandizing the Roman republic; the power of which was attributed * to the protection of the gods, who rewards justice and public faith in that manner. It is observed † with admiration, that the Romans, in all times, constantly made religion the basis of their enterprizes, and referred the motive and end of them to the gods.

The most powerful reason the generals could use to animate the troops to fight well, was to represent to them, that the war they made was just; and that, as only necessity had put their arms into their hands, they might assuredly rely upon the protection of the gods: whereas those gods, the enemies and avengers of injustice, never failed to declare against such as undertook unjust wars, in violation of the faith of treaties.

* Favere pietati fideique deos, per quos populus Romanus ad tantum fastigii pervenerit. *Liv.* l. 44. n. 1.

† Majores vestri omnium magnarum rerum & principia exorsi ab diis sunt, & finem eum statuerunt. *Liv.* l. 45, n. 39.

S E C T. II.

Declaration of war.

ONE effect of the principles of equity and justice, which I have now laid down, was never actually to commence hostilities, before the public heralds had signified to the enemy the grievances they had to alledge against them, and they had been exhorted to redress the wrongs declared to have been received. It is agreeable to the law of nature to try methods of amity and accommodation, before proceeding to open rupture. War is the last of remedies, and all others should be endeavoured before that is undertaken. Humanity requires, that room be given for reflection and repentance, and time left to clear up such doubts, and remove such suspicions, as measures of an ambiguous nature may give birth to, and which are often found to be groundless upon a nearer examination.

This custom was generally observed from the earliest ages amongst the Greeks. * Polynices, before he besieged Thebes, sent Tydeus to his brother Eteocles to propose an accommodation. And it appears from Homer, that the Greeks deputed Ulysses and Menelaus to the Trojans, to summon them to restore Helen, before they had committed any act of hostility; and Herodotus tells us the same thing. We find a multitude of the like examples throughout the history of the Greeks.

Iliad. l. 2.
n. 205.

Lib. 2.
c. 112, &c.

It is true, that an almost certain means of gaining great advantages over enemies is to fall on them at unawares, and to attack them suddenly, without

* Potior cunctis sedit sententia, fratris
Prætentare fidem, tutosque in regna precando
Explorare aditus. Audax ea munera Tydeus
Sponte subit

Stat. Theb. lib. 11.

having

having suffered them to discover our designs, or giving them time to put themselves into a state of defence. But these unforeseen incursions, without any previous denunciation, were properly deemed unjust enterprises; and vicious in their principle. It was this, as Polybius remarks, that had so much discredited the Ætolians, and had rendered them as odious as thieves and robbers; because having no rule but their interest, they knew no laws either of war or peace, and every means of enriching and aggrandizing themselves appeared legitimate to them, without troubling themselves, whether it were contrary to the law of nations to attack neighbours by surprize, who had done them no wrong, and who believed themselves safe in virtue, and under the protection of treaties.

Polyb. l. 4.
p. 331.

The Romans were more exact than the Greeks in observing this ceremony of declaring war, which was established by Ancus Martius, the fourth of their kings. The public officer (called *Fecialis*) having his head covered with linen, went to the frontiers of the people against whom preparations of war were making; and as soon as he arrived there, he declared aloud the grievances of the Roman people, and the satisfaction he demanded for the wrongs which had been done them; calling Jupiter to witness in these terms, which include an horrible imprecation against himself, and a still greater against the people, of whom he was no more than the voice: *Great God, if I come hither to demand satisfaction in the name of the Roman people, contrary to equity and justice, never suffer me to behold my native country again.* He repeated the same thing, changing only some of the terms, to the first person he met; and afterwards at the entrance of the city, and in the public market-place. If at the expiration of thirty days satisfaction were not made, the same officer returned to the same people, and pronounced publicly these words: *Attend, ob Jupiter,*

Liv. l. 1.
n. 32.

OF THE ART MILITARY.

Juno, and Quirinus; and you celestial, terrestrial, and infernal gods, attend. I call you to witness, that such a people (naming them) are unjust, and refuses to make us satisfaction. We shall consult at Rome, in the senate, upon the means of obliging them to do us that justice which is our due.* Upon the return of the *Fecialis* to Rome, the affair was brought into deliberation, and, if the majority of voices were for the war, the same officer went back to the frontier of the same people, and in the presence of at least three persons, pronounced a certain form of declaration of war; after which he threw a spear upon the enemy's lands, which implied that the war was declared.

This ceremony was long retained by the Romans. When war was to be declared against Philip and Antiochus, they consulted the *Feciales*, to know, whether it was to be denounced to themselves in person, or it sufficed to declare it in the first place subject to those princes. In the glorious times of the † republic, they would have thought it a disgrace to them to have acted by stealth, and to have committed breach of faith, or even used artifice. They proceeded openly, and left those little frauds and unworthy stratagems to the Carthaginians, and people like them, with whom it was more glorious to deceive, than conquer an enemy with open force.

The heralds at arms, and *Feciales*; were in great veneration amongst the antients, and were considered as sacred and inviolable persons. This declaration was a part of the law of nations, and was held necessary and indispensable. It was not preceded by certain public writings, now called

* *So Romulus was called.*

† *Veteres & moris antiqui memores negabant se in ea legatione Romanas artes agnoscerere. Non per insidias & nocturna praelia nec ut in agilitate quam vera virtute gloriarentur, bella majore gestill. Inducere prorsusquam gerere solitos bella, denunciare etiam — hoc est in n. esse, non versutiarum Punicarum, neque calliditatis Græcæ, quod quos fallere hostem, quam vi superare, gloriosius fuerit.* *Liv. l. 13. p. 47.*

Manifestoes, which contain the pretensions, well or ill founded, of the one or the other party, and the reasons by which they support them. These have been substituted in the room of that august and solemn ceremony, by which the antients introduced the divine Majesty in declarations of war, as witness and avenger of the injustice of those who undertook wars without reason and necessity. Motives of policy have besides rendered these manifestoes necessary, in the situation of the princes of Europe with regard to each other, united by blood, alliances and leagues offensive or defensive. Prudence requires the prince, who declares war against his enemy, to avoid drawing upon him the arms of all the allies of the power he attacks. It is to prevent this inconvenience manifestoes are made in these days, which supply the place of the antient ceremonies I have mentioned, and which sometimes contain the reasons for beginning the war, without declaring it.

I have spoken of pretensions well or ill founded. For states and princes, who war upon each other, do not fail to justify their proceedings with specious pretexts on both sides; and they might express themselves, as a prætor of the Latins did in an Liv. l. 8. assembly, wherein it was deliberated how to answer p. 4. the Romans, who, upon the suspicion of a revolt, had cited the magistrates of Latium before them. “In my opinion, gentlemen, says he, in the present conjuncture, we ought to be less concerned about what we have to say, than what we have to do: for, when we have acted with vigour, and duly concerted our measures, there will be no difficulty in adapting words to them.” *Ad summam rerum nostrarum magis pertinere arbitror, quid agendum nobis, quam quid loquendum sit. Facile erit, explicatis consiliis, accommodare rebus verba.*

ARTICLE II.

Choice of the generals and officers. Raising of troops.

S E C T. I.

Choice of the generals and officers.

IT is a great advantage for kings to be absolute masters in the choice of the generals and officers of their armies; and the highest praise, which can be given them, is to say, that known reputation and solid merit are the sole motives that determine them in it. And indeed can they have too much attention in making a choice, which in some measure equals a private person with his sovereign, by investing him with the whole power, glory, and fortune of his dominions? It is principally by this characteristic princes capable of governing are known; and it is to the same they have been always indebted for the success of their arms. We do not find, that the great Cyrus, Philip, or his son Alexander, ever confided their troops to generals without merit and experience. The case was not the same under the successors of Cyrus and Alexander, with whom intrigue, cabal, and the credit of a favourite usually presided in this choice, and almost always excluded the best subjects. Hence the success of their wars was answerable to such a manner of commencing them. I have no occasion to cite examples to prove this: history abounds with them.

Her. l. 5.
c. 75.

I proceed to republics. At Sparta the two kings, in virtue of their rank only, had the right and possession of the command, and in the earlier times marched together at the head of the army: but a division,

division, that happened between Cleomenes and Demaratus, occasioned the making of a law, which ordained, that only one of the kings should command the troops; and this was afterwards observed, except in extraordinary cases. The Lacedæmonians were not ignorant, that authority is weak when divided; that two generals seldom agree long; that great enterprizes can hardly succeed, unless under the conduct of a single man; and that nothing is more fatal to an army, than a divided command.

This inconvenience must have been much greater at Athens, where, by the constitution of the state itself, ten persons were always to command; because, Athens being composed of ten tribes, each furnished their own chief, who commanded their day successively. Besides which, they were chosen by the people, and that every year. This occasioned a smart saying of Philip's, that he admired the good fortune of the Athenians, who could find in a set time, every year, ten captains; whereas, during his whole reign, it had scarce been in his power to find * one.

The Athenians, however, especially at critical conjunctures, must have been attentive in appointing citizens of real merit for their generals. From Miltiades to Demetrius Phaleræus, that is to say, during almost two hundred years, a considerable number of great men were placed by Athens at the head of her armies, who raised their country's glory to the most exalted height. In those times all jealousy was banished, and the public good the sole motive of power. There is a fine example of this in the war of Darius against the Greeks. The danger was exceeding great. The Athenians were alone against an innumerable army. Of the

Herod.
c. 10
110.

* This was Parmenio.

ten generals, five were for fighting, and five for retreating. Miltiades, who was at the head of the former, having gained the Polemarch on his side, (which officer had a decisive voice in the council of war in case of division) it was resolved to fight. All the generals, acknowledging the superiority of Miltiades to themselves, when the day came, resigned the command to him. It was at this time the celebrated battle of Marathon was fought.

It sometimes happened that the people, suffering themselves to be swayed by their orators, and following their caprice in every thing, conferred the command upon persons unworthy of it. We may remember the absolute credit of the famous Cleon with the multitude, who was appointed to command in the first years of the Peloponnesian war, though a turbulent, hot-headed, violent man, without ability or merit. But these examples were rare, and not frequently repeated at Athens till the later times, when they proved one of the principal causes of its ruin.

Diog. La-
ert. in
Antisth.
p. 369.

The philosopher Antisthenes made the Athenians sensible, one day, in a pleasant and facetious manner, of the abuses committed amongst them in the promotions to the public offices. He proposed to them, with a serious air, in a full assembly, that it should be ordained by a decree, that for the future the asses should be employed in tillage as well as the horses and oxen. When he was answered, that the asses were not intended by nature for that labour: *You are deceived*, said he, *that signifies nothing: Don't you see that our citizens, though ever so much asses and sots before, become immediately able generals, solely from your election of them.*

At Rome, the people also elected the generals, that is to say, the consuls. They held their office only one year. They were sometimes continued in the command under the names of proconsuls or

proprætors. This * annual change of the generals was a great obstacle to the advancement of affairs, the success of which required an uninterrupted continuation. And this is the advantage of monarchical states, in which the princes are absolutely free, and dispose all things at discretion, without being subject to any necessity. Whereas, amongst the Romans, a consul sometimes arrived too late, or was recalled before the time for holding the assemblies. Whatever diligence he might use in his journey, before the command could be transferred to a successor, and he was sufficiently informed of the condition of the army, a knowledge indispensably previous to all undertakings, a considerable space of time must have elapsed, which made him lose the occasion of acting, and of attacking the enemy to advantage. Besides which, he often found affairs, upon his arrival, in a bad condition, through his predecessor's ill conduct, and an army composed in part of new-raised and unexperienced troops, or corrupted by licence or want of discipline. Fabius † intimated part of these reflections to the Roman people, when he exhorted them to chuse a consul capable of opposing Hannibal.

* Interrumpi tenorem rerum, in quibus peragendis continuatio ipsa efficacissima esset, minimè convenire. Inter traditionem imperii, novitatemque successoris, quæ noscendis prius quam agendis rebus imbuenda sit, sæpe bene gerendæ rei occasiones intercidere. *Liv.* l. 41. n. 15.

Post tempus (consules) ad bella ierunt: ante tempus comitiorum causa revocati sunt: in ipso conatu rerum circumegit se annus— Male gestis rebus alterius successum est: tironeum aut mala disciplina institutum exercitum acceperunt. At hec ulè Reges, non liberi solum impedimentis omnibus, sed domini rerum temporumque, trahunt consiliis cuncta, non sequuntur. *Liv.* l. 9. n. 18.

† Cum, qui est summus in civitate dux, cum legerimus, tamen repente lectus, in annum creatus adversus veterem ac perpetuum imperatorem comparabitur, nullis neque temporis neque juris inclusum angustis, quo minus ita omnia gerat administratque ut tempora postulabunt belli: nobis autem in apparatu ipso, ac tantum inchoantibus res, annus circumagitur. *Liv.* l. 24. n. 8.

OF THE ART MILITARY.

The short term of one year, and the uncertainty of the command's being further prolonged, did indeed induce the generals to make the best use of their time: but it was often a reason for their putting a speedier end to their enterprises, than they would otherwise have done, and upon less advantageous conditions, from the apprehension that a successor might reap the fruit of their labours, and deprive them of the honour of having terminated the war gloriously. A true zeal for the public good, and a perfectly disinterested greatness of soul, would have disdained such considerations. I am afraid there are very few examples of this kind. The great * Scipio himself, I mean the first, is reproached with this weakness, and with not having been insensible to this fear. A virtue of so pure and exalted a nature, as to neglect so sensible and so affecting an interest, seems above humanity: at least it is very uncommon.

The authority of the consuls confined, in point of time, within such narrow bounds, was, it must be confessed, a great inconvenience. But the danger of infringing the public liberty, by continuing the same man longer in the command of all the forces of the state, obliged them to overlook this inconvenience, from the apprehension of incurring a much greater.

The necessity of affairs, the distance of places, and other reasons, at length reduced the Romans to continue their generals in the command of their armies for many years. But the inconvenience really ensued from it, which they had apprehended; for the generals, by that duration of their power, became their country's tyrants. Amongst other examples I might cite Sylla, Marius, Pompey, and Cæsar.

* *Ipsam Scipionem expectatio successoris, venturi ad paratam alterius labore ac periculo finiti belli famam, sollicitabar. Liv. l. 50. n. 36.*

The choice of the generals usually turned upon their personal merit; and the citizens of Rome had at the same time a great advantage, and a powerful motive for acting in that manner. What facilitated this choice was the perfect knowledge they had of those who aspired at command, with whom they had served many campaigns, whom they had seen in action, and whose genius, talents, successes, and capacity for the highest employments, they had time to examine and compare by themselves, and with their comrades. This * knowledge, which the Roman citizens had of those who demanded the consulship, generally determined their suffrages in favour of the officers, whose ability, valour, generosity, and humanity, they had experienced in former campaigns: "He took care of me, said they
 " when I was wounded; he gave me part of the
 " spoils; under his conduct we made ourselves
 " masters of the enemy's camp, and gained such
 " a victory; he always shared in the pains and fatigue with the soldier; it is hard to say, whether
 " he is most fortunate or most valiant." Of what weight was such discourse!

The motive, which induced the Roman citizens to weigh and examine carefully the merit of the competitors, was the personal interest of the electors, the major part of whom, being to serve under them, were very attentive not to confide their lives, honour, and the safety of their country, to generals they did not esteem, and from whom they did not expect good success. It was the soldiers

* Num tibi hæc parva adjumenta & subsidia consulatus? voluntas militum? quæ cum per se valet multitudine, tum apud suos gratia: tum verò in consule declarando multum etiam apud populum Romanum auctoritatis habet suffragatio militaris.—Gravis est illa oratio: Me faucium recreavit; me præda donavit; hoc duce castra cepimus, signa contulimus; nunquam iste plus militi laboris imposuit, quam sibi sumpsit; ipse cum fortis, tum etiam sælix. Hoc quanti putas esse ad famam hominum ac voluntatem? *Cic. pro Muræn. n. 38.*

themselves, who in the *comitia* made choice of these generals. We see they knew them well, and find by experience, that they were seldom mistaken. We observe even in our times, that when they go upon parties to plunder (*marauding*) they always chuse, without partiality or favour, those amongst them that are most capable of commanding them. It was in this spirit Marius was chosen, against the will of his general Metellus; and Scipio Æmilianus preferred, through a like prejudice of the soldiers in his favour.

It must be owned, however, that the nomination of commanders was not always directed by public and superior views; and that cabal, and address to insinuate into the people's opinion, to flatter, and sooth their passions, had sometimes a great share in it. This was seen at Rome, in regard to Terentius Varro; and at Athens, in the instance of Cleon. The multitude is always the multitude, that is to say, fickle, inconstant, capricious, and violent: but the people of Rome were less so than any. They gave, upon many occasions, examples of a moderation and wisdom, not to be sufficiently admired; submitting themselves, in the most laudable manner, to the opinion of the senate; forgetting nobly their prejudices, and even resentment, in favour of the public good, and voluntarily renouncing the choice they had made of persons incapable of sustaining the weight of affairs, as it happened, when the consulship was continued to Fabius, after the remonstrance himself had made upon the incapacity of those who had been elected: an odious proceeding in every other conjuncture, * but which, at

Liv. l. 10.
n. 22. &
34.
Id. l. 26.
n. 22.

* Tempus, ac necessitas belli ac discrimen summæ rerum faciebant ne quis aut in exemplum exquireret, aut suspectum cupiditatis imperii consulem haberet. Quin laudabant potius magnitudinem animi, quod, cum summo imperatore esse opus reip. sciret, seque cum haud dubiè esse; minoris invidiam, si qua ex re oriretur, quam utilitatem reip. fecisset. Liv. l. 24. n. 9.

that time, did Fabius great honour, because the effect of his zeal for the republic, to the safety of which he was not afraid, in some measure, to sacrifice his own reputation.

The armies of the Roman people consisted generally of four legions, of which each consul commanded two. They were called the first, second, third, and so on, according to the order in which they had been raised. Besides the two legions commanded by each consul, there was the same number of infantry, supplied by the allies. After all the people of Italy were associated into the freedom of the city, that disposition underwent many alterations. The four legions under the consuls were not the whole force of Rome. There were other bodies of troops, commanded by prætors, proconsuls, &c.

When the consuls were in the field together, their authority being equal, they commanded alternately, and had each their day, as it happened at the battle of Cannæ. One of them often, knowing his colleague's superior ability, voluntarily resigned his rights to him. Agrippa Furius* acted in this manner, in regard to the famous T. Quintius Capitolinus, who, in gratitude to his colleague's generosity and noble behaviour, communicated all his designs to him, shared with him the honour of all the successes, and made him his equal in every thing. On another occasion †, the military tri-

* In exercitu Romano cum duo consules essent potestate pari; quod saluberrimum in administratione magnarum rerum est, summa imperii, concedente Agrippa, penes collegam erit; & prelatas ille facilitati summittentis se comiter respondebat, communicando consilia laudisque, & æquando imparem sibi. *Liv.* l. 3. n. 70.

† Collegæ fateri regimen omnium rerum, ubi quid bellici terroris ingruat, in viro uno esse: sibi que destinatum in animo esse Camillo summittere imperium; nec quicquam de majestate sua detractum credere, quod majestati ejus viri concessisset—Erecti gaudio fiemunt, nec dictatore unquam opus fore reip. si tales viros in magistratu habeat, tam concordibus junctos animos, parere atque imperare juxtâ paratos, laudemque conferentes potius in medium, quam ex comitum ad se trahentes. *Liv.* l. 6. n. 6.

bunes, who had been substituted to the consuls, and were at that time six in number, declared, that, in the present critical conjuncture, only one of them was worthy of the command, this was the great Camillus; and that they were resolved to repose their whole authority in his hands; convinced, that the justice they rendered his merit could not but reflect the greatest glory upon themselves. So generous a conduct was attended with universal applause. Every body cried out, that they should never have occasion to have recourse to the unlimited power of dictators, if the republic always had such magistrates, so perfectly united amongst themselves, so equally ready either to obey or command; and who, so far from desiring to engross all glory to themselves, were contented to share it in common with each other.

It was a great advantage to an army to have such a general, as Livy describes in the person of Cato, who was capable of descending to the least particular*; who was alike attentive to little and great things; who foresaw at a distance, and prepared every thing necessary to an army; who did not content himself with giving orders, but took care to see them executed in person; who was the first in setting the whole army the example of an exact and severe discipline; who disputed sobriety, watching, and fatigue, with the meanest soldier; and, in a word, who was distinguished by nothing in the army, but the command, and the honours annexed to it.

After the nomination of consuls and prætors, the tribunes were elected to the number of twenty-four;

* In consule ea vis animi atque ingenii fuit, ut omnia maxima minimaque per se adiret, atque ageret; nec cogitaret modò imperaretque que in rem essent, sed pleraque per se ipse transigeret; nec in quemquam omnium gravius severiusque, quam in semetipsum imperium exerceret; parsimonia, & vigiliis, & labore cum ultimis militum certaret; nec quicquam in exercitu suo præcipui præter honorem atque imperium haberet. *Liv.* l. 34. n. 18.

six to each legion. Their duty was to see that the army observed discipline, obeyed orders, and did their duty. During the campaign, which was six months, they commanded successively, two and two together, in the legion for two * months: they drew lots for the order in which they were to command.

At first, the consuls nominated these tribunes; and it was of great advantage to the service, that the generals themselves had the choice of their officers. In process of time, † of the four and twenty tribunes, the people elected six; about the 393d year of Rome, and ‡ fifty years after, that is to say, in the 444th year of Rome, they chose to the number of sixteen. But, in important wars, they had sometimes || the moderation and wisdom to renounce that right, and to abandon the choice entirely to the prudence of the consuls and prætors, as happened in the war against Perseus king of Macedonia; of the effects of which Rome was in very great apprehension.

Of these twenty-four tribunes, fourteen must have served at least five years, and the rest ten: a conduct of great wisdom, and very proper to inspire the troops with valour, from the esteem and confidence it gave them for their officers. Care was also taken to distribute these tribunes in such a manner, that in each legion the most experienced

* *Secundæ Legionis Fulvius Tribunus militum erat. Is mensibus suis dimisit legionem. Liv. l. 40. n. 41.*

† *Cum placuisset eo anno tribunos militum ad legioges suffragio fieri (nam & antea, sicut nunc quos Rufulos vocant, imperatores ipsi faciebant) secundum in sex locis Manlius tenuit. Liv. l. 7.*

‡ *Duo imperia eo anno dari cœpta per populum, utraque ad rem militarem pertinentia. Unum, ut tribuni senidni in quatuor legiones a populo crearentur, quæ antea perquam paucis suffragio populi relicti locis, dictatorum & consulum fuerunt beneficia. Liv. l. 9. n. 30.*

|| *Decretum ne tribuni militum eo anno suffragiis crearentur, sed consulum prætorumque in iis faciendi, iudicium arbitriumque esset. Liv. l. 42. n. 31.*

were

were united with those who were younger, in order to instruct and form them for commanding.

Lib. 23.
n. 7.

The Præfects of the allies, *præfecti sociûm*, were in the allied troops what the tribunes were in the legions. They were chosen out of the Romans; as we may infer from these words of Livy, *Præfectos sociûm, civēsque Romanos aliôs*. Which is confirmed by the names of those we find appointed in the same author, *Lib. 27. n. 26, and 41. Lib. 33. n. 36; &c.* This practice, which left the Romans the honour, of commanding in chief amongst the allies, and gave the latter only the quality of chief subaltern officers; was the effect of a wise policy; to hold the allies in dependance, and might contribute very much to the success of enterprises, in making the same spirit and conduct actuate the whole army.

Liv. l. 21.
n. 20.

Id. l. 24.
n. 44.

I have not spoken of the officers called *Legati*, lieutenants. They commanded in chief under the consul, and received his orders, as the lieutenant-generals serve under a marshal of France, or under the eldest lieutenant-general, who commands the army in chief. It appears that the consuls chose these lieutenants. Mention is made of this in the earliest times of the republic. In the battle of the Lake of Regillus, that is to say, in the 255th year of Rome, T. Herminius the lieutenant distinguished himself in a particular manner. Fabius Maximus, so well known from his wise conduct against Hannibal, did not disdain to be his son's lieutenant, who had been elected consul. The latter, in that quality, was preceded by twelve lictors, who walked one after the other; part of their function was to cause due honour to be paid to the consul. Fabius the father, upon his son's going to meet him, having passed the first eleven lictors, continuing on horseback, the consul ordered the twelfth to do his duty. That lictor immediately called

called out to Fabius with a loud voice to dismount. The venerable old man obeyed directly, and addressing himself to his son told him: *I had a mind* Liv. l. 37.
to see, whether you knew that you were consul. n. 1. It is well known that Scipio Africanus offered to serve as lieutenant under the consul his brother, and thereby determined the senate to give the latter Greece for his province.

The reader has no doubt observed, in all that I have hitherto said concerning the Romans, a spirit of understanding and conduct which evidently shews, that the great success of their arms was not the effect of chance, but of the wisdom and ability, which presided over every part of their government.

S E C T. II.

Raising of troops.

THE Lacedæmonians, properly speaking; were a people of soldiers. They cultivated neither arts nor sciences: They applied themselves to neither commerce nor agriculture; leaving the care of their lands entirely to slaves, who were called *Helots*. All their laws, institutions, education, in a word, the whole scheme of their government, tended to making them warriors. This had been the sole view of their legislator, and it may be said, that he succeeded perfectly well in it. Never were there better soldiers, more formed for the fatigues of war, more inured to military exercises, more accustomed to obedience and discipline, more full of courage and intrepidity, more sensible to honour, nor more devoted to glory, and the good of their country.

They were distinguished into two sorts: the one, who were properly called *Spartans*, inhabited the

city of Sparta; the others, who were named only *Lacedæmonians*, resided in the country. The former were the flower of the state, and filled all offices. They were almost all of them capable of commanding in chief. The wonderful change, occasioned only by one of them (Xanthippus) in the army of the Carthaginians, to whose aid he was sent, has been related; and also in what manner Gylippus, another Spartan, saved Syracuse. Such were the *three hundred*, who, with Leonidas at their head, repulsed, a great while, the innumerable army of the Persians, at the streights of Thermopylæ.

Herod. l. 7. The number of the Spartans, at that time, amounted to eight thousand men, or something more.

c. 34.

The age for carrying arms was from thirty to sixty. The elder and younger were left at home to guard the city. They never armed their slaves but upon extreme necessity. At the battle of Platæa, the troops furnished by Sparta amounted to ten thousand men, that is to say, five thousand Lacedæmonians, and as many Spartans. Each of the latter had seven Helots to attend him, the number of which, in consequence, amounted to thirty-five thousand. These were equipped as light-armed troops. The Lacedæmonians had very little cavalry, and naval affairs were then entirely unknown to them. It was not till very late, and contrary to the plan of Lycurgus, that they commenced a maritime power, nor were their fleets at any time very numerous.

Athens was much larger and better peopled than Sparta. In the time of Demetrius Phaleræus it was computed to have twenty thousand citizens, ten thousand strangers settled in the city, and forty thousand slaves.

All the young Athenians were inrolled in a public register at the age of eighteen, and at the same time took a solemn oath, by which they engaged

to serve the republic, and to defend it to the utmost of their power upon all occasions. They were bound by this oath to the age of sixty. Each of the ten tribes, that formed the body of the state, furnished a certain number of troops, according to the occasion, either for the sea or land service: for the naval power of Athens became very considerable in process of time. In Thucydides we see that the troops of the Athenians, in the beginning of the Peloponnesian war, were thirteen thousand heavy-armed foot, sixteen hundred archers, and very near as many horse, which in all might amount to sixteen thousand men; without including sixteen thousand more, who remained to guard the city, ciicadel, and ports, either citizens under or over the military age, or strangers settled among them. The fleet at that time consisted of three hundred galleys. I shall relate in the following article the order observed in them.

The troops both of Sparta and Athens were not numerous, but full of valour, well-disciplined, intrepid, and, one might also say, invincible. They were not soldiers raised by chance, often without spirit or home, insensible to glory, indifferent to a success little affecting them; who had nothing to lose, who made war a mercenary traffic, and sold their lives for a scanty means of subsisting, their pay. They were the chosen troops of the two most warlike states in the world; soldiers determined to conquer or die; who breathed nothing but war and battle; who had nothing in view but glory and the liberty of their country; who in action believed they saw their wives and children, whose safety depended on their arms and valour. Such were the troops raised in Greece, amongst whom desertion, and the punishment of deserters, was never so much as mentioned; for could a soldier be tempted to renounce his family and country for ever?

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As much may be said of the Romans; of whom it remains for us to speak. Amongst them, the consuls generally levied the troops: and, as new ones were nominated every year, so new levies were also made annually.

The age for entering into the army was seventeen years. * Only citizens were admitted to serve in it; and none were received under that age, but in extraordinary cases and on pressing occasions. Once they were obliged to arm slaves: but first, which is very remarkable, they were severally asked, whether they entered themselves freely and of their own accord; because they did not think it proper to place any confidence in soldiers listed by fraud or force. Sometimes they went so far as to arm those who were confined in the prisons either for debt or crimes: but this was very seldom practised.

The Roman troops therefore were composed only of citizens. Those among them who were poor (*proletarii, capite censi*) were not listed. They were for having soldiers, whose fortunes might be answerable to the republic for their zeal in its defence. Most of these soldiers lived in the country, to take care of their estates themselves, and to improve them with their own hands. Those who dwelt at Rome had each of them their portion of land, which they cultivated in the same manner. So that the † whole youth of Rome were accustomed

to

* Delectu edicto, juniores annis septemdecem, & quosdam pretextatos scribunt.—Aliam formam novi delectus inopia liberorum capitum ac necessitas dedit. Octo millia juvenum validorum ex servitiis, prius seiscitantes singulos vellentne militare, empti publice armaverunt. *Liv.* 1. 32. n. 57.

† Sed rusticorum mascula militum
Proles, Sabellis docta ligonibus
Versare glebas, & severe
Matris ad arbitrium recisos
Portare fuites.

Horat. Od. 6. lib. 3.

to* support the rudest fatigues; to endure sun, rain, and hail; to lie hard, and often in the midst of the fields, and in the open air; to live soberly and wisely, and to be contented with a little. They never knew pleasures or luxury, had their members inured to all sorts of labour, and, by their residence in the country, had contracted the habit of handling heavy instruments, digging of trenches, and carrying heavy burthens. Equally soldiers and labourers, these Romans in entering the service only changed their arms and tools. The young people, who lived in the city, were not much more tenderly bred than the others. Their continual exercises in the field of Mars, their races on horseback and on foot, always followed by the custom of swimming the Tiber to wash off their sweat, was an excellent apprenticeship for the trade of war. Such soldiers must have been very intrepid. For the less men are acquainted with pleasures, the less they fear death.

Before they proceeded to levy troops, the consuls gave the people notice of the day, upon which all the Romans, capable of bearing arms, were to assemble. The day being come, and the people assembled in the capitol, or the field of Mars, the military tribunes drew the tribes by lot, and called them out as they came up. They afterwards made their

*But soldiers of a rustic mould;
Rough, hardy, season'd, manly, bold;
Either they dug the stubborn ground,
Or thro' hewn woods their weighty strokes did sound.*

Roscommon.

* Nunquam puto potuisse dubitari aptiorem armis rusticam plebem quæ sub dio & in labore nutritur; solis patiens; umbræ negligens; balnearum nescia; deliciarum ignara; simplicis animi; parvo contenta; duratis ad omnem laborum tolerantiam membris; cui gestare ferrum, fossam ducere, onus ferre, consuetudo de rure est—Idem bellator, idem agricola, genera tantum mutabat armorum—Sudorem cursu & campetri exercitio collectum nando juvenis abluebat in Tyberi. Nescio enim quomodo minus mortem timet, qui minus deliciarum novit in vita. *Veget. de re mil.* l. 1. c. 3.

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choice of these citizens, taking them each in his rank, four by four, as near as possible, of equal stature, age, and strength; and continued to do the same, till the four legions were complete.

After the troops were levied, every foldier took an oath to the consul or tribunes. By this oath they engaged *to assemble at the consul's order, and not to quit the service without his permission: to obey the orders of the officers, and to do their utmost to execute them; not to retire either through fear, or to fly from the enemy; and not to quit their rank.*

This was not a mere formality, nor a ceremony purely external, of no effect with regard to the conduct. It was a very serious act of religion, sometimes attended with terrible imprecations, which made a strong impression upon the mind, was judged absolutely and indispensably necessary, and without which the soldiers could not fight against the enemy. The Greeks as well as the Romans made their troops take this oath, or one to the same effect; and they founded their reason for it upon a great principle. They knew, that a private person of himself has no right over the lives of other men: that the prince or state, who have received that power from God, put arms into his hands: that it is only in virtue of this power, with which he is invested by his oath, that he can draw his sword against the enemy: and that, without this power, he makes himself guilty of all the blood he sheds, and commits homicide as often as he kills an enemy.

The * consul, who commanded in Macedonia against Perseus, having dismissed a legion in which the son of Cato the censor served, that young officer, who had nothing in view but to distinguish himself by some action, did not withdraw with the legion,

* Manncius believes this to have been Paulus Aemilius.

but remained in the camp. His father thereupon wrote immediately to the consul, to desire, if he thought fit to suffer his son to continue in the army, that he would make him take a new oath, because * being discharged from the former, he had no longer any right to join in battle against the enemy. And he wrote to his son to the same effect, advising him not to fight till he had sworn again.

It was in consequence of the same maxim, that Cyrus the great exceedingly applauded the action of an officer, who, having raised his arm to strike an enemy, upon hearing the retreat sounded, stopped short, regarding that signal as an order to proceed no farther. What might not be expected from officers and soldiers so accustomed to obedience, and so full of respect for their general's orders, and the rules of discipline?

The tribunes of the soldiers at Rome, after the oath, told the legions the day and place for the general rendezvous. When they were assembled at the time fixed, the youngest and poorest were made light-armed troops; the next in age *Hastati*; the strongest and most vigorous *Principes*; and the oldest soldiers *Triarii*.

Two legions were usually given to each consul. The number of soldiers to a legion was not always the same. At first they were not above three thousand, but were afterwards augmented to four, five, six thousand, and something more. The most usual number was four thousand two hundred foot, and three hundred horse. Such it was in the time of Polybius, where I shall fix it.

The Legion was divided into three bodies, the *Hastati*, the *Principes*, and the *Triarii*. The reader will be so good to excuse me the use of these three words, having no others to express their meaning.

* Quia, priore amisso jure, cum hostibus pugnare non poterat.
Cic.

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The two first bodies consisted each of twelve hundred men, and the third of six hundred only.

The *Hastati* formed the first line; the *Principes* the second; and the *Triarii* the third. This last body was composed of the oldest and most experienced soldiers, and at the same time the bravest in the army. The danger must have been very great and urgent before it reached this third line. From whence came the proverbial expression, *Res ad Triarios rediit*.

Each of these three bodies were divided into ten parts or *Maniples*, consisting of sixscore in the *Hastati* and *Principes*, and only of sixty in the *Triarii*.

Each *Maniple* had two centuries or companies. Antiently and at its first institution by Romulus, the century had an hundred men from which it took its name. But afterwards it consisted only of sixty in the *Hastati* and *Principes*, and thirty *Triarii*. The commanders of these centuries or companies were called *Centurions*. I shall soon explain the distinction of their ranks.

Besides these three bodies, there were in each legion light-armed troops of different denominations, *Rorarii*, *Accensi*; and in later times the *Velites*. They were also twelve hundred in number. They were not properly a distinct body, but disposed into the three others, according to occasion. Their arms were a sword, a javelin, (*hasta*) a *parma*, that is a light shield. The youngest and most active soldiers were chosen for this body.

From the time of Julius Cæsar no mention is made of the distinct ranks of the *Hastati*, *Principes*, and *Triarii*, though the army was almost always drawn up in three lines. The legion at that time was divided into ten parts, which were called *Cohortes*. Each cohort was a kind of legion abridged. It had six-score *Hastati*, six-score *Principes*,

ripes, sixty Triarii, and six-score light-armed men, which made in all four hundred and twenty. That is precisely the tenth part of a legion, consisting of four thousand two hundred foot.

The Roman cavalry was not very numerous: three hundred horse to above four thousand foot. It was divided also into ten companies, (*Alas*) each consisting of thirty men.

The horse were chosen out of the richest of the Liv. l. 1. citizens; and in the distribution of the Roman n. 45. people by centuries, of which Servius Tullius was the author, they composed the eighteen first centuries. They are the same who are afterwards mentioned in history under the name of Roman knights, and formed a third and middle order between the senate and people. The republic supplied them with horses and subsistence.

Till the siege of Veii, there were no other cavalry Liv. l. 5. in the Roman armies. At that time those who n. 7. were qualified by their estates, to be admitted into the horse, but had not an horse allowed them at the public expence, nor in consequence the rank of knights, offered to serve in the cavalry, supplying themselves with horses. Their offer was accepted.

From thenceforth there were two * sorts of cavalry in the Roman armies: the one, whom the public supplied with horses, *equum publicum*; and these were the true Roman knights; the others, who furnished themselves, and served *equo suo*, had not the title or prerogatives of the knights.

But the horse kept at the public expence was always the constitutive title of the Roman knight: and, when the censors degraded a Roman knight, it was by taking his horse from him.

* This distinction is strongly enough marked in Mago's discourse to the senate of Carthage upon the gold rings: *Neminem nisi equitem, & eorum ipsorum primores, id insigne gerere.* Liv. l. 23, n. 12. These primores equitum are the true Roman knights, qui merebant. equo publico.

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Besides the citizens, who formed the legions, there were troops of the allies in the Roman army: these were states of Italy, which the Romans had subjected, and had left the use of their laws and government, upon condition of supplying them with a certain number of troops. They furnished an equal number of infantry with the Romans, and generally twice as many horse. Amongst the allies, the best-made and bravest both of the horse and foot were chosen to be posted about the consul's person: these were called *Extraordinarii*. The third part of the horse, and the fifth of the foot, were disposed of in this manner; the rest were placed, half on the right and half on the left wings, the Romans generally reserving the centre to themselves.

The Roman army, as we see from what has hitherto been said, consisted solely of citizens and allies. It was not till * the sixth year of the second Punic war, that the Romans admitted mercenaries into their troops, which was seldom or ever done afterwards. These were Celtiberians, who, as we find, composed the greatest part of Cn. Scipio's army in Spain: An essential fault, which cost him his life, and Rome almost the loss of Spain, and perhaps the ruin of her empire. That example, as † Livy wisely observes, ought to have taught Roman generals never to suffer a greater number of strangers than of their own troops in their armies. It is well known, that the revolt of foreign troops more than once brought Carthage to the very brink of ruin. That republic had almost no other soldiers; which was the great defect of its militia.

* Id ad memoriam insigne est, quod mercenarium militem in castris neminem ante, quam tum Celtiberos, Romani habuerunt. *Liv. l. 24. n. 49.*

† Id quidem cavendum semper Romanis ducibus erit, exemplaque hæc vere pro documentis habenda, ne ita externis credant auxiliis non plus sui roboris suarumque propriè virium in castris habeant. *Liv. l. 25. n. 33.*

Such a mixture of foreign and barbarous troops, and their superiority in number, in the Roman armies, were one of the principal causes of the entire ruin of the Roman empire in the West.

I return to the Centurions, whose different ranks I am to explain. I have said that in each Maniple there were two centuries, and in consequence two centurions. He who commanded the first century of the first Maniple of the Triarii, called also *Pilani*, was the most considerable of all the centurions, and had a place in the council of war with the consul and principal office s: *Primipilus*, or *Primipili Centurio*. He was called *Primipilus prior*, to distinguish him from the centurion who commanded the second century of the same Maniple, who was called *Primipilus posterior*. And the same was done in the other centuries. The centurion, who commanded the second century of the same Maniple of the Triarii, was called *secundi pili Centurio*; and so on to the tenth, who was called *decimi pili Centurio*.

The same order was observed amongst the Hastati and Principes. The first centurion of the Principes was called *primus Princeps*, or *primi principis Centurio*; the second *secundus Princeps*, and so on to the tenth. In this manner the Hastati were called *primus Hastatus*, *secundus Hastatus*, &c.

The centurions were raised from an inferior to a superior degree, not only by seniority, but merit.

This distinction of degrees and posts of honour, which were only granted to bravery and real service, excited an incredible emulation amongst the troops, that kept them always in spirit and order. A private soldier became a centurion, and, afterwards rising through all the different degrees, might at length arrive at the principal posts. This view, this hope, supported them in the midst of the most service,

severe fatigues, animated them, prevented them from committing faults, or taking distaste to the service, and prompted them to the most arduous and valiant actions. It is in this manner an invincible army is formed.

The officers were very warm in preserving these distinctions and pre-eminences. I shall relate an instance of this very proper to the present subject, that is, the raising of troops; which does great honour to the Roman soldiery, and shews with what moderation and wisdom their sensibility for glory was attended.

When the Roman people had resolved upon the war against Perseus, the last king of Macedonia, amongst the other measures taken for the success of it, the senate decreed, that the consul, charged with that expedition, should raise as many centurions and veteran soldiers, as he pleased, out of those who did not exceed fifty years of age.

*Qui primos
filios duxerant.*

Twenty-three centurions, who had been *Primipili*, refused to take arms, unless the same rank were granted them, which they had in the preceding campaigns. The affair was brought before the people. After Popilius, who had been consul two years before, had pleaded the cause of the centurions, and the consul his own, one of the centurions, who had appealed to the people, having obtained permission to speak, expressed himself to this effect:

“ I am called Sp. Ligustinus, of the Crustumine tribe, descended from the Sabines. My father left me a small field and a cottage, where I was born, brought up, and now live. As soon as I was of age to marry, * he gave me his brother’s daughter for my wife: She brought

* Pater mihi uxorem fratris sui filiam dedit, quæ secum nihil attulit præter libertatem, pudicitiam, & cum his fecunditatem, quanta vel in diti domo satis esset.

“ me no portion, but liberty, chastity, and a fruit-
 “ fulness sufficient for the richest houses. We have
 “ six sons, and two daughters, both married. Of
 “ my sons four have taken the robe of manhood,
 “ (*toga virilis*) the other two are still infants. I
 “ began to bear arms in the consulship of P. Sul-
 “ picius and C. Aurelius. I served two years as a
 “ private soldier in the army, in Macedonia,
 “ against king Philip. The third year T. Quin-
 “ tius Flaminius, to reward me for my services,
 “ made me * captain of a century in the first
 “ Maniple of the Hastati. I served afterwards as
 “ a voluntier in Spain, under Cato; and that ge-
 “ neral, who is so excellent a judge of merit, made
 “ me † first Maniple of the Hastati. In the war
 “ against the Ætolians and king Antiochus, I rose
 “ to the same rank among the Principes‖. I after-
 “ wards made several campaigns, and in a very
 “ few years have been § four times Primipilus; I
 “ have been four and thirty times rewarded by the
 “ generals, have received six Civic ** crowns, have
 “ served two and twenty campaigns, and am above
 “ fifty years old. Though I had not completed
 “ the number of years required by the law, and
 “ my age did not discharge me, substituting four
 “ of my children in my place, I should deserve to
 “ be exempt from the necessity of serving. But, by
 “ all I have said, I only intend to shew the justice
 “ of my cause. For the rest, as long as those who
 “ levy the troops shall judge me capable of bear-
 “ ing arms, I shall not refuse the service. The
 “ tribunes shall rank me as they please, that is

* Decimum ordinem Hastatum agnavit.

† Dignum judicavit, cui primum Hastatum prioris centuriæ assignaret.

‖ Mihi primus Princeps prioris centuriæ est assignatus.

§ Quater primum pilum duxi.

** The crowns given for having saved the life of a citizen were called *fo*.

their

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“ their business: mine is so to act, that none be
 “ ranked above me for valour; as all the gene-
 “ rals, under whom I have had the honour to serve,
 “ and all my comrades can witness for me, I have
 “ hitherto never failed to do. For you, centurions,
 “ notwithstanding your appeal, as even, during
 “ your youth, you have never done any thing con-
 “ trary to the authority of the magistrates and
 “ senate, in my opinion, it would become your
 “ age to shew yourselves submissive to the senate
 “ and consuls, and to think every station * honour-
 “ able, that gives you opportunity to serve the re-
 “ public.” When he had done speaking, the con-
 sul, after having given him the highest praises be-
 fore the people, left the assembly, and carried the
 centurion with him into the senate. There he was
 publicly thanked in the name of that august body,
 and the military tribunes, as a mark and reward
 of his valour and zeal, declared him Primipilus,
 that is, first officer of the first legion. The other
 centurions, renouncing their appeal, made no farther
 difficulty to enter into the service.

Nothing gives us a juster idea of the Roman
 character than facts of this kind. What a fund
 of good sense, equity, nobleness, and even great-
 ness of soul does this soldier express! He speaks
 of his antient poverty without shame, and of his
 glorious services without vanity. He is not impro-
 perly tenacious of a false point of honour. He
 modestly defends his rights, and renounces them.
 He teaches all ages not to contend with their coun-
 try, nor to make the public good give place to
 their private interest; and is so happy, as to bring
 over all those in the same case, and associated with
 himself, into his opinion. How powerful is ex-

* Et omnia honesta loca ducere, quibus remp. defensori sitis.

ample! The good disposition of a single person is sometimes all that is necessary for reducing a multitude to reason.

ARTICLE III.

Preparations of war.

I Shall include in this article what relates to provisions, the pay of soldiers, their arms, and some other cares necessary to be taken by generals before they begin to march.

S E C T. I.

Of provisions.

THE order observed by the Romans, in regard to provisions, is better known to us than that of the Greeks: the quæstor was charged with this care.

The quantity of corn for each soldier's daily subsistence was very near the same with both people; that is to say, a *chænix*, or the eighth part of a * Roman bushel; six of which went to the Medimnus. The *chænix* was also the usual daily allowance of a slave.

A Roman soldier therefore in the foot had four bushels of wheat a month; which was called *mensuruum*: that is to say, thirty-two *chænix*'s, which was something more than a *chænix per day*. The foot soldier of the allies had as much.

The Roman Horse soldier received two medimni of wheat, or twelve bushels, a month, because he had two domestics; which amounted to fourscore

* The Roman bushel was about the size of the English, and contained three fourths and a little more of the French.

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and sixteen chænix's, at the rate of something more than a chænix *per* man daily. This horseman had two horses, one for himself, and the other to carry his baggage, &c. For these two horses he received also, monthly, seven medimni of barley, which make two and forty bushels, at the rate of one bushel and a little more than three chænix's a day for two horses.

It was necessary for one of these horse troops to have a certain income, to support the unavoidable expences he was at during the campaign. Hence it sometimes happened that a citizen, though of a Patrician family, was obliged by his * poverty to serve in the foot.

The horsemen of the allies had a medimnus and one third *per* month; that is to say, eight bushels of corn, because he had only one horse, and consequently but one servant; and five medimni of barley for that horse, which make thirty bushels, at the rate of one bushel a day.

The quantity of wheat for the officers augmented in proportion to their pay, of which we will speak in the sequel.

The portion of corn was sometimes doubled to the soldiers by way of honour and reward, as appears from several † passages in Livy.

The public stores of corn, of which the quæstors, as I have said, had the care, were carried either in ships, in waggons, or by beasts of burthen: but the foot soldiers carried upon their shoulders the quantity of corn distributed to them for a certain time, which very much lessened the number of carriages.

* Magistrum equitum dicit L. Tarquitium patriciæ gentis, sec qui, cum stipendia pedibus propter paupertatem fecisset, bello tamen primus longè Rom: næ juvenutis habitus esset. *Liv.* l. 3. n. 27.

† Milites, qui in præsidio fuerant duplici frumento in perpetuum in præsentia singulis bobus donati. *Lib.* 7.
Hispanis duplicia cibaria dari jussit. *Lib.* 24.

Four bushels of wheat, which was the quantity of each soldier for a month, was * an heavy load, without reckoning all that he had carried besides. It is certain † that they were sometimes loaded with four bushels: but this undoubtedly was on extraordinary occasions; as upon a forced march, or a sudden expedition in the enemy's country. It is highly probable that they generally carried corn only for twelve, fifteen, or twenty days at most; and this weight diminished every day by the daily consumption.

It may be asked; why corn rather than bread was given to the troops. Perhaps this custom had been transferred from the city into the camp; for in the city the public distributions were made in corn, not in bread. Besides which, the weight of corn was lighter than that of bread. ‡ Pliny observes, that the weight of a bushel of wheat in grain augments exactly one third, when made into ammunition bread. This is a considerable difference. But again, it is conceived to have been a very great trouble for the soldiers to make their own bread, to grind the corn, and afterwards to bake it. Though they were divided into messes or chambers, called *Contubernia*, this seems to us a considerable difficulty. To judge rightly of it, we must imagine ourselves to live in the same times and countries with them, and consider the customs which then prevailed. The Roman soldier, employed in grinding the corn and baking the bread, did no more in the camp, than he had done every day in the city in times of peace.

* *The French bushel of wheat weighs from nineteen to twenty pounds.*

† *Consul menstruum jussu milite secum ferre profectus, decimo post die, quam exercitum acceperat, castra movit. Liv. l. 44. n. 2.*

Aquilentes, nihil se ultra scire nec audere affirmare, quam triginta dierum frumentum militi datum. Liv. l. 44. n. 1.

‡ *Lex certè natura, ut in quocumque genere pani militari tertia portio ad grani pondus accedit. Plin. l. 18. c. 7.*

His meal supplied him with I know not what variety of dishes. Besides the common bread, he made a kind of soft boiled food of it, very agreeable to the troops: he mingled it with milk, roots, and herbs; and made pancakes of it upon a small plate laid over the fire, or upon the hot ashes, as was antiently the manner of regaling guests, and is still practised throughout the East, where these kind of thin cakes are much preferred to our best bread.

Liv. l. 3.
n. 27.

Upon certain occasions bread was distributed amongst the troops. When L. Quintius Cincinnatus was created dictator against the Æqui, he ordered all the youth capable of bearing arms to repair to the Campus Martius before sunset, with bread for five days, each of them with twelve palisades. He commanded such of the citizens as were of a more advanced age to bake bread for the young ones, whilst they were employed in preparing their arms, and providing themselves with stakes. This was chiefly done when they were to *embark, because there was not so much convenience on board the vessels for making bread, as on shore.

But generally the soldier ground his corn himself, either in little mills, which he carried along with him, or upon stones; after which he baked his bread, not in ovens, but upon a fire, or under the ashes.

To the corn given the troops were added salt, herbs, and roots, cheese, and sometimes bacon and pork.

Their drink was answerable to this diet. The army very seldom used wine. Cato the elder drank nothing but water, except in great heats, when he

Plot. in
Cat. p. 336.

* Ut focii navales decem dierum cocta cibaria ad naves deferrent.
Liv. l. 21. n. 49.

Cum triginta dierum coctis cibariis naves conscenderunt.
Liv. l. 23.

only mixed it with vinegar. The use of this drink was common in the armies: it was called *posca*. Every foldier was obliged to have a bottle of it in his equipage. The emperor Pescennius forbad the use of any other drink in his army: *Jussit vinum in expeditione neminem bibere, sed aceto universos esse contentos.* Spartian. The expression, *universos*, seems to imply that this prohibition was universal, and extended to the officers as well as soldiers. This drink (*posca*) was very good to quench the thirst immediately, and to correct the badness of the water which they might meet with upon their march. Hippocrates says, that vinegar is refreshing: $\omicron\acute{\xi}\sigma\psi\upsilon\kappa\sigma\iota\kappa\acute{o}\nu$: for which reason it was given to reapers, and those who worked in the field. Aristotle tells us, that the Carthaginians, in time of war, abstained from wine. Ruthii. 14. Oeconom. l. 1. c. 5.

I have heard say, that nothing gives persons in the army, who read the antient history, so much difficulty, as the article of provisions; which difficulty is not without its foundation. We do not find, that either the Greeks or Romans had the precaution to provide magazines of forage, to lay up provisions, to have a commissary general of stores, or to be followed by a great number of carriages. We are amazed at what is said of the army of Xerxes king of Persia, which amounted, including the train and baggage, to more than five millions of souls; and, for the subsistence of which, according to the computation of Herodotus, more than six hundred thousand bushels of wheat a day were requisite. How was it possible to supply such an army with so enormous a quantity of corn, and other necessaries in proportion? Herod. 1. 7. c. 187.

We must remember, that the same Herodotus Ibid. c. 20. had taken care to apprize us, that Xerxes had employed himself, during four years, in making pre-

parations for this war. A considerable number of ships, laden with corn and other provisions, always coasted near the land-army, and were perpetually relieved by others, by the means of which it wanted nothing; the passage from the Hellespont to the Grecian sea and the island of Salamis being very short, and this expedition not of a year's continuance. But no consequence should be drawn from it, being extraordinary, and one may say the only example of the kind.

In the wars of the Greeks against each other, their troops were little numerous, and accustomed to a sober life; they did not remove far from their own country, and almost always returned regularly every winter. So that it is plain, it was not difficult for them to have provisions in abundance, especially the Athenians, who were masters at sea.

As much may be said of the Romans, with whom the care of provisions was infinitely less weighty, than it is at present with most of the nations of Europe. Their armies were much less numerous, and they had a much smaller number of cavalry. A legion of four thousand foot made a body (after our manner) of six or seven battalions; and, having only three hundred horse, they formed but two squadrons: so that a consular army, of about sixteen thousand foot, including the Romans and their allies, was composed of very near twenty-five of our battalions, and had but eight or nine of our squadrons. In these days, to twenty-five battalions, we have often more than forty squadrons. What a vast difference must this make in the consumption of forage and provisions!

They did not want four or five thousand horses for the train of artillery, with bakers and ovens, and a great number of covered waggons, each of four horses.

Besides this, the sober manner of life in the army, confined to the mere necessaries of life, spared them an infinite multitude of servants, horses, and baggage, which now exhaust our magazines, starve our armies, retard the execution of enterprises, and often render them impracticable. This was not the manner of living only of the soldiers, it was common to them with the officers and generals. Emperors themselves, that is to say, the lords of the universe, Trajan, * Adrian, † Pescennius, ‡ Alexander Severus, Probus, § Julian, and many others, not only lived without luxury, but contented themselves with boiled flour or beans, a piece of cheese or bacon, and made it their glory to level themselves, in this respect, with the meanest of the soldiers. It is easy to conceive of what weight such examples were, and how much they contributed to diminish the train of an army, to support the taste of frugality and simplicity amongst the troops, and banish all luxury and idle shew from the camp.

It is not without reason, that all the authors I have cited at bottom observe, that those emperors affected to eat in public, and in the sight of the whole army: *In propatulo—Ante papilionem—Apertis papilionibus—Sub columellis tabernaculi.* This sight attracted, instructed, and consoled the soldier, and ennobled his poor diet to him, in its resemblance to that of his masters: *Cunctis videntibus atque gaudentibus.*

* Cibis etiam castrensibus in propatulo libenter utebatur (Adrianus) hoc est lardo, caseo, & posca. *Spartian.*

† In omni expeditione (Pescennius) militare cibum sumpsit ante papilionem. *Spartian.*

‡ Apertis papilionibus (Alexander) prandit atque cœnavit, cum militare cibum, cunctis videntibus atque gaudentibus, fumeret. *Lamprid.*

§ Et Imperatori (Juliano) non cupiditæ ciborum regio more, sed sub columellis tabernaculi parcius cœnatura pultis portio parabatur exigua, etiam munifici fastidienda gregario. *Ammian.* l. 25.

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Let us compare an army of thirty thousand men, composed of such officers and soldiers as the Greeks and Romans had, robust, sober, seasoned, and inured to all sorts of fatigues, with our armies of an hundred thousand men, and the pompous train that follows them; is there a general of the least sense or understanding, that would not prefer the former? It is with such troops the Greeks often checked the whole forces of the East, and the Romans conquered and subjected all other nations. When shall we return to so laudable a custom? Will there not some general of an army arise of superior rank and merit, and at the same time of a genius solid and sensible to true glory, who shall comprehend how much it is for his honour to shew himself liberal, generous, and magnificent in sentiments and actions; to bestow his money freely for animating the soldiers, or to assist the officers, whose income does not always suit their birth and merit; and to reduce himself in all other things, I do not say to that simplicity and poverty of the antient masters of the world, (so sublime a virtue is above our age's force of mind) but to an elegant and noble plainness, which, by the force of example, of great effect in those that govern, may perhaps suggest the same to all our generals, and reform the bad and pernicious taste of the nation?

The care of provisions always has been, and ever will be, highly incumbent upon a good general. Cato's * maxim, *that the war feeds the war*, holds good in plentiful countries, and with regard to small armies: that of the Greeks is more generally true, *that the war does not furnish provisions upon command, or at a fixed time*. They must be provided, both for the present and the future. One of

* Bellum, inquit Cato, seipsum alet. *Liv.* l. 34. n. 9.

the principal instructions Cambyfes king of Perfia gave his fon Cyrus, who afterwards became fo glorious, was, not to embark in any expedition, till he had firft informed himfelf, whether fubfiftence were provided for the troops. Paulus Æmilius would not fet out for Macedonia, till he had taken care of the transportation of provifions. If Cambyfes and Darius had been as attentive in this point, they had not occafioned the lofs of their armies, the firft in Ethiopia, and the other in Scythia. That of Alexander had been famifhed, if the counfel of Memnon, the moft able general of his times, had been followed, which was to lay wafte a certain extent of country in Afia minor, through which that prince was under the neceffity of marching. Before the battle of Cannæ, Hannibal had not ten days provifions: a delay of fome weeks had reduced him to the laft extremity. Cæfar, before that of Pharfalia, muft have perifhed for want of provifions, if Pompey would, or rather could, have waited ten or twelve days longer. Famine is an enemy, againft whom the ability and valour of generals and foldiers can effect nothing, and whom the number of troops ferves only to reinforce.

S E C T. II.

Pay of the soldiers.

AMONGST the Greeks, the soldiers at first subsisted themselves in the field at their own expence. This was natural; because they were the citizens themselves united to defend their lands, lives, and families, and had a personal interest in the war.

The poverty, which Sparta long professed, gives reason to believe, that they did not pay their troops. As long as the Spartans remained in Greece, the republic supplied them with provisions for their public meals, and one habit yearly. Amongst these provisions there was some meat, and a particular officer had the distribution of it. We have seen Agesilaus, to mortify Lyfander, who had filled the highest offices of the republic, give him this office, which was of no consideration. The Spartans, during the war, contented themselves with this allowance, adding to it some little plunder of the country for their better subsistence. After Lyfander had opened the way for gold and silver to re-enter Sparta, and had formed a public treasury there, as the Lacedæmonians were often transported into Asia minor out of their own country, the republic was no doubt obliged to supply them at such times with subsistence by particular aids. We have seen the younger Cyrus, at the request of Lyfander, augment the pay of those who served on board the galleys of the Lacedæmonians, from three oboli, usually paid them by the Persians, to four, which very much debauched the seamen from the Athenians. Sparta's strength was not maritime. Though it was washed by the sea upon the east and south, its coasts were not advantageous for navigation,

and

Put. in
Agesil. &
Lyfand.

From five
pence to
six pence
half-penny.

and it had only the port of Gytheum, which was neither very large nor commodious. And indeed its fleets were not very numerous, and had scarce any seamen but strangers. It is not certainly known what pay Sparta gave her land troops, nor whether she supplied either the one or the other with provisions.

Pericles was the first that established pay for the Athenian soldiers, who till then had served the republic without any. Besides its being very easy to conciliate the people's favour by this method, a more urgent motive obliged him to introduce that change. He made war at a distance in Thrace, in the Chersonesus, in the isles, and in Ionia, during several months together, without molesting or squireeing the allies. It was impossible for citizens, so long absent from their lands, trades, and other means of getting their bread, (for most of them were artificers, as the Lacedæmonians reproached them) to serve without some support. That was a justice the republic owed them, and Pericles acted less the part of a popular magistrate than that of an equitable judge. He only prevented, like a wise politician, the desires of the people in regard to a conduct, which was become necessary.

The usual pay of the mariners was three oboli, which made half a drachma; that is to say, five pence French; that of the land-troops four oboli, or six pence half-penny; and that of the horse a drachma, ten pence.

Good order had been established for supporting the expences of the war. The four oldest and primitive tribes of Athens had increased to ten. At that time, for the payment of imposts, six score citizens were drawn out of each tribe, which made twelve hundred in all; these were divided into four companies of three hundred, and into twenty classes;

classes; of which each were again divided into two parts, the one of the richer citizens, the other of such as were less so. The public expences fell upon the rich and opulent, but upon some more than others. When any urgent and sudden necessity happened, that made it necessary to raise troops, or fit out a fleet, the expences were divided amongst these citizens in proportion to their estates: the rich advanced the money, for the immediate service of the republic, and the others had time allowed to reimburse them, and pay their quota.

Plut. in
Nic. p. 533. It appears from the example of Lamachus, who was sent with Nicias to command at the siege of Syracuse, that the Athenian generals served at their own expence. Plutarch observes, that this Lamachus, who was very poor, not being in a condition to pay any thing towards the expences of the war, sent an account to the people of what he had laid out upon his own person, in which his daily subsistence, cloaths, and even shoes and stockings were included.

The Roman soldiers, in the earlier times of the republic, served without pay or gratification. The wars in those days were not very distant from Rome, and of no long duration. As soon as they were terminated, the soldiers returned home, and took care of their affairs, lands, and families. It was not till four hundred and forty years after the building of Rome, that the senate, upon occasion of the siege of Veii, which was very long, and continued without interruption during the winter, contrary to custom decreed, without being * requested,

* Additum deinde, omnium maximè tempestivo principum in multitudinem munere, ut ante mentionem ullam plebis Tribunorumve decerneret senatus, ut stipendium miles de publico acciperet, cum ante id tempus de suo quisque functus eo munere esset. Nihil acceptum unquam a plebe tanto gaudio traditur. Concursum itaque ad Curiam esse, prehensatamque exeuntium manus, & patres vere appel-

quested, that the republic should pay the soldiers a fixed sum for the services they should render it. This decree, the more agreeable to the people, as it appeared the pure effect of the senate's liberality, occasioned universal joy; and the whole city cried out, that they were ready to shed their blood, and sacrifice their lives, for so munificent a country.

The Roman senate shewed the same wisdom upon this occasion, as Pericles had done at Athens. The soldiers at first whispered, and at length openly vented their complaints and murmurs against the length of the siege, which laid them under the necessity of continuing remote from their families during even the winter, and by that long absence occasioned the ruin of their lands, which remained uncultivated, and became incapable of affording them subsistence. These were the real motives of the senate's conduct, who artfully granted that as a favour, which necessity was upon the point of extorting from them by the invectives of some tribune of the people, who would have made it an honour to himself.

To answer this pay, a tax was laid upon the citizens in proportion to their estates. The senators Liv. l. 4. n. 60. set the example, which was followed by all others, notwithstanding the opposition of the tribunes of the people. It appears that none were exempt Liv. l. 33. n. 42. from it, not even the augurs nor pontiffs. They were dispensed from paying it, during some years, by violent means, and their private authority. The quæstors cited them to appear and see themselves sentenced to pay the whole arrears due from that time. They appealed to the people, who condemned them. When wars were terminated, and

appellatos, effectum esse fatentibus, ut nemo pro tam munifica patria, donec quicquam virium superesset, corpori aut sanguini suo parceret. Liv. l. 4. n. 59.

Dion. Ha-
licarn. in
Excerpt.
Legat.
P. 747.
Plut. in
P. Æmil.
p. 275.

considerable spoils had been taken from the enemy, part of them was applied in reimbursing the people the sums that had been raised for carrying them on: which is a very admirable, and very uncommon example of public faith. The tax, of which I speak, subsisted till the triumph of Paulus Æmilius over the Macedonians, who brought so great a quantity of riches into the public treasury, that it was thought proper to abolish it for ever.

Though the soldiers usually served only six months, they received pay for the whole year, as appears from several passages in Livy: This was paid them at the end of the campaign, and sometimes from six months to six months. What I have hitherto said of pay regards only the foot.

It was also * granted three years after to the horse during the same siege of Veii. The republic used to supply them with horses: they had been so generous, in a pressing necessity of the state, to declare that they would mount themselves at their own expences.

The pay of the soldiers was not always the same; it varied according to the times. It was at first only three *asses* a day for the foot: (something more than three pence French) at that time there were ten *asses* to a *denarius*, which was of the same weight and value as the Grecian drachma. The *denarius* was afterwards raised to sixteen *asses*, in the 536th year of Rome, when Fabius was dictator, at which time the pay rose from three to five pence. We ought not to be surprised at the smallness of this pay, when we consider the price of provisions. Polybius informs us, that in his time the bushel of wheat was usually sold for four *oboli*, or six pence half-penny French; and the bushel of barley for

Plin. 1. 33.
c. 3.

Polyb. 1.
§ 5. P. 103.

* Equiti certus numerus æris est assignatus. Tum primum equis (suis) merere Equites cœperunt. Liv. l. 5. n. 7.

half that price. A bushel of wheat was sufficient for a soldier for eight days.

Julius Cæsar, to confirm the soldiers the more strongly in his interest, doubled their pay, and made it amount to ten pence: *Legionibus stipendium in perpetuum duplicavit.*

There were other alterations in it under the emperors, but I do not think it necessary to enter into the detail of them.

Polybius, after having said that the daily pay of the foot was something more than three pence, adds, that the centurions had six pence half-penny, and the horse ten-pence.

Sueton.
J. Cæf.
c. 26.

Two oboli.
Four oboli.
Six oboli.

From this daily pay of five-pence, which was the usual pay in Polybius's time, the sum total yearly amounted to almost an hundred livres, without including the allowance of corn and other provisions, with which they were daily supplied. I take the year as twelve months, each of thirty days, which amount to three hundred and sixty days; and it appears that it was sometimes taken in this manner, in regard to the pay of troops.

Out of this annual sum, a part was reserved for their cloaths, arms, and tents. This Tacitus tells us: *Enimvero militiam ipsam gravem, infructuosam: denis in diem assibus animam & corpus æstimari. Hinc vestem, arma, tentoria.* And Polybius adds corn to it: *Non frumentum, non vestem, nec arma gratuita militi fuisse; sed certa horum pretia de stipendio quaestore dedueta.*

Annal. l. i.
c. 17.

As to what regards the great officers, consuls, proconsuls, lieutenants, prætors, proprætors, and quaestors, it does not appear, that the republic paid them for their services in any other manner, than by the honour annexed to these offices. She supplied them with the necessary and indispensable disbursements of their commissions: robes, tents, horses, mules, and all their military equipage.

They

They had a certain fixed number of slaves, which was not very great, and which they were not at liberty to augment, the law admitting them to take new ones only in the room of such as died. In the provinces through which they passed, they exacted nothing but forage for their horses, and wood for themselves from the allies. And those who piqued themselves upon imitating the entire disinterestedness of the antients, took nothing from them. Cicero acted in this manner, as he himself tells Articus in a letter. * “ The people are at
 “ no expence, says he, either for me, my lieutenants, the quæstor, or any other officer. I accepted neither of forage nor wood, though permitted by the Julian law. I only consent that they supply my people with an house and four beds; though they often lodge in tents.” It was of the spirit of the Roman government not to suffer their generals or magistrates to be a charge to their allies. It was this conduct, so full of wisdom and humanity, that rendered the authority of the Romans so venerable and amiable; and it may be said with truth, that it contributed, more than their arms, to render them masters of the universe.

Liv. l. 42.
 n. 1.

Livy tells us his name who first infringed the Julian law, which regulated the expences that might be exacted from the allies; and his example had only too many followers, who in a short time exceeded him. This was L. Posthumius. He was angry with the inhabitants of Præneste, because, during some stay he had made there when a pri-

* Nullus fit sumptus in nos, neque in legatos, neque in quæstorem, neque in quemquam. Scito non modo nos fœnum, aut quod lege Julia dari solet, non accipere; sed ne ligna quidem nec præter quatuor lectos & lectum quemquam accipere quidquam; multis locis ne lectum quidem, & in tabernaculo manere plerumque. *Epist. 16. lib. 5. ad Attic.*

vate person, they had not treated him with the respect he believed his due. When he was elected consul, he thought of revenge. Being to pass through that city to his province, he let them know, that they must send their principal magistrates to meet him, to provide him lodging in the name and at the expence of the public, and to have the beasts of burthen, that were necessary, in readiness against his departure. Before him, says Livy, no magistrate had ever put the allies to any expence, nor exacted any thing from them. The republic supplied them with mules, tents, and all the carriages necessary to a commander, in order to prevent their taking any thing from the allies. As hospitality was very much honoured and practised in those times, they lodged with their particular friends, and took great pleasure in receiving them at Rome in their turn, when they came thither. When they sent lieutenants upon any sudden expedition, the cities through which they passed received orders to supply them with an horse, and nothing more. * Though the consul might have had a just cause of complaint against the people of Præneste, he ought not to have used, or rather abused, the authority of his office, to make them sensible of it. Their silence, whether the effect of moderation or excessive timidity, prevented them from laying their complaints before the Roman people, and authorised the magistrates from thenceforth to make that new yoke heavier every day; as if impunity, in the first instance, had implied the approbation of Rome, and had given them a kind of right to act the same thing.

* *Injuria (the sense requires Ira to be read) consulis etiam si justa, non tamen in magistratu exercenda, & silentium nimis aut molestum aut timidum Prænestinorum, jus veluti probato exemplo magistratibus fecit graviorum in dies talis generis imperiorum. Liv.*

The

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The antient Romans, far from behaving in this manner, or endeavouring to enrich themselves at the expence of the allies, had no thoughts but of protecting and defending them. They believed themselves sufficiently paid by the glory of their exploits, and often, after great victories and illustrious triumphs, died in the arms of poverty, as they had lived. The Grecian and Roman histories abound with examples of this kind.

S E C T. III.

Antient arms:

IT is not my design in this place to describe all the various kinds of arms used by the soldiery of all nations. I shall confine myself principally, according to my custom, to those of the Greeks and Romans, who, in this respect, had many things common to both. The Romans had borrowed the use of most of them from the Tuscans and Greeks, who inhabited Italy. Florus observes, that * Tarquinius Priscus, who was descended from the Corinthians, introduced abundance of the Grecian customs at Rome.

Armour was antiently of brass, and afterwards of iron. The poets often use one for the other.

The armour of the Greeks, as well as that of most other nations, was, in the earliest ages, the helmet, the cuirass, the shield, the lance, and the sword. They used also the bow and the sling.

The helmet was a defensive armour for the head and neck. It was either of iron or brass, often in the form of the head, open before, and leaving the face uncovered. There were head-pieces that might

* Tarquinius Priscus—oriundus Corintho, Græcum ingenium Italicis artibus miscuit. *Flor. l. 1. c. 5.*

be let down to cover the face. Upon the top of them they placed figures of animals, lions, leopards, griffins, and others. They adorned them with plumes of feathers, which floated in the wind, and exalted their beauty.

The cuirass was called in Greek *Σώμαξ*, a name which has been adopted into the Latin, that however more frequently uses the word *lorica*. At first cuirasses were made either of iron or brass, in two pieces, as they are in these days: these two pieces were fastened upon the sides by buckles. Alexander left the cuirass only the two pieces which covered the breast, that the fear of being wounded in the back, which had no defence, might prevent the soldiers from flying

Polyæn.
Demetr.
l. 4.

There were cuirasses of so hard a metal, that they were absolutely of proof against weapons. Zoilus, an excellent artist in this way, offered two of them to Demetrius, surnamed Poliorcetes. To shew the excellency of them, he caused a dart to be discharged at them out of the machine, called a catapult, at the distance of only twenty-six paces. How violently soever the dart was shot, it made no impression, and scarce left the least mark upon the cuirass.

Plut. in
Demetr.
p. 898.

Many nations made their cuirasses of flax or wool: these were coats of arms made with many folds, which resisted, or very much broke, the force of blows. That with which Amasis presented the Lacedæmonians, was of wonderful workmanship, adorned with figures of various animals, and embroidered with gold. What was most surprising in this cuirass was, that every thread in it, though very small, was composed of three hundred and sixty smaller, which it was not difficult to distinguish.

Herod.
l. 3. c. 47.

I have said that the cuirass was called *lorica* in Latin. This word comes from *lorum*, a thong or

strap of leather, because made of the skin of beasts. And from the French word *cuir* also *cuirass* is derived. The cuirass of the Roman legions consisted of thongs, with which they were girt from the armpits to the waist. They were also made of leather, covered with plates of iron, in the form of scales, or of iron rings twisted within one another, in the form of chains. These are what we call *coats of mail*, in Latin, *lorica hamis conferta*, or *hamata*.

With the *thorax* of the Greeks the soldier was much less capable of motion, agility, and force: whereas the girts of leather, successively covering each other, left the Roman soldier entire liberty of action, and, fitting him like a vest, defended him against darts.

The buckler was a defensive piece of armour, proper to cover the body. There were different sorts of them.

Scutum, *συτίον*, or *σάκος*. The shield. This buckler was long, and sometimes of so immoderate a size, that it would cover a man almost from head to foot. Such were those of the Egyptians mentioned by Xenophon. It must have been very large amongst the Lacedæmonians, as they could carry the body of one who had been killed upon it. From whence came the celebrated injunction of a Spartan mother to her son, when he set out for the war: ἢ τὰν, ἢ ἐπὶ τὰν, that is to say, *Either bring back this buckler, or return upon it*.

Cyrop. l. 7.
p. 178.

It was the greatest disgrace to return from battle with the loss of the buckler; undoubtedly, because it seemed to argue, that the soldier had quitted it to fly the more easily, without regard to any thing but saving his life. The reader may remember, that Epaminondas, mortally wounded in the celebrated battle of Mantinea, when he was carried off into his tent, asked immediately,
with

with concern and emotion, whether his buckler was safe.

Clypeus, ἀσπίς. It is often confounded with the *Scutum*. It is, however, certain, that they were different; because, in the *census*, or muster, made by Servius Tullius, the *clypeus* is given to those of the first class, and the *scutum* to those of the second. And in fact the *scutum* was long and square: the *clypeus* round and shorter. Both had been used by the Romans in the time of the kings. After * the siege of Veii, the *scutum* became more common. The † Macedonians always made use of the *clypeus*, except perhaps in later times.

The buckler of the Roman legions was convex, and in the form of a gutter-tile. According to Polybius it was four feet long, and two and an half broad. These bucklers were antiently made of wood, says Plutarch, in the life of Camillus: but this Roman general caused them to be covered with plates of iron, to make them the better defence against blows.

Plut. in
Cam.
P. 150.

The *Parma* was a small round buckler, lighter and shorter than the *scutum*, used by the heavy-armed infantry. The light-armed foot and the cavalry had this shield.

The *Pelta* was almost the same thing with that called *cetra*. This buckler was light, in the form of a half moon, or semi-circle, on the top.

The SWORD. The forms of it were very different, and in great number: I shall not amuse the reader with describing them, but content myself with remarking, ‡ that there were long swords

* Clypeis antea Romani usi: deinde, postquam facti sunt stipendiari, scuta pro clypeis fecere. *Liv.* l. 8. n. 8.

† Arma, clypeus, sarrisque illis (Macedonibus:) Romano scutum, majus corpori tegumentum. *Liv.* l. 9. n. 19.

‡ Gallis Hispanisque scuta ejusdem formæ ferè erant, disparæ ac dissimiles gladii. Gallis prælongi, ac sine mucronibus: Hispano, punctum magis quàm casum assueti petere hostem, brevitate habiles, & cum mucronibus. *Liv.* l. 22. n. 46.

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without points, which served to strike with the edge, as were those of the Gauls, of which we shall soon speak. There were others shorter and stronger, which had both point and edge, *punctim & caesim*, such as the Spanish sabres were, which the Romans borrowed from them, and used ever after with advantage. * With these sabres they cut off arms and heads, and made most horrible wounds, at one blow.

The manner, in which the sword was worn by the antients, was not always alike. The Romans generally wore it on the right thigh, to leave room, without doubt, for the moving of the buckler with more freedom, which was on the left side: but, in certain remains of antiquity, we see that their soldiers wore them on the left.

It is remarkable, that neither the Greeks nor Romans, the two most warlike nations of the world, wore swords in times of peace; nor was duelling known amongst them.

PIKES OF LANCES were used by almost all nations. Those which we see upon the monuments, made in the times of the Roman emperors, are about six feet and an half long, including the iron point.

The *Sarissa* of the Macedonians was of so prodigious a length, that one could scarce believe such a weapon could be used, if all the antients did not agree in this point. They give it a length of sixteen cubits, which makes eight yards.

Bows and ARROWS are of the most remote antiquity. There were few nations who did not use them. The Cretans were esteemed excellent archers. We do not find that the Romans used the bow in the earliest times of the republic. They

* Gladio Hispaniensi detruncata corpora brachii abscissis, aut tota cervice desecta, divisa à corpore capita, patentisque viscera, & foeditatem aliam vulnorum viderunt. *Lib. l. 31. n. 34.*

introduced it afterwards ; but it appears that they had scarce any archers except those of the auxiliary troops.

The SLING was also an instrument of war much used by many nations. The Balearians, or the people of the islands now called Majorca and Minorca, excelled at the sling. They were so attentive in exercising their youth in the use of it, that they did not give them their food in the morning till they had hit a mark. The Balearians were very much employed in the armies of the Carthaginians and Romans, and greatly contributed to the gaining of victories. * Livy mentions some cities of Achaia, Egium, Patræ, and Dymæ, whose inhabitants were still more dexterous at the sling than the Balearians. They threw stones farther, and with greater force and certainty, never failing to hit what part of the face they pleased. Their slings discharged the stones with so much force, that neither buckler nor head-piece could resist their impetuosity ; and † the address of those who managed them was such, according to the Scripture, that they could hit an hair, without the stones going either on one side or the other. Instead of stones they sometimes charged the sling with balls of lead, which it carried much farther.

Vegat. de
re milit.
l. 1. c. 16.

JAVELINS. There are two sorts of them, which are :

† *ἄσπερον*: *hasta*. I call it javelin. It was a kind of dart not unlike an arrow, the wood of which was generally three feet long, and one inch thick. The point was four inches long, and tapered to so fine an end, that it bent at the first stroke in such

* Longius, certiusque, & validiore ictu quam Balearis fundit r, eo telo usi sunt—Non capita solum hostium vulnerabant, sed quem locum destinassent oris. Liv. l. 38. n. 29.

Among all this people there were seven hundred men left-handed, every one could sling stones at an hair-breadth, and not miss. Judg. xx. 16.

a manner, as to be useless to the enemy. The light-armed troops used it. * They carried several javelins in their left hand, with which they held their buckler, in order to have the right free, either to dart javelins at a distance, or to use the sword. † Livy gives each of them seven javelins.

ῥοδος: *Pilum*. I call this the *great javelin* ‡, because thicker and stronger than the other. The legions darted it at the enemy, before they came to close fight. When they had neither time nor room, they threw it upon the ground, and charged the enemy sword in hand.

The CAVALRY had almost the same arms as the foot: the helmet, the cuirass, the sword, the lance, and a smaller or lighter buckler.

We see in Homer, that in the Trojan war the most distinguished persons rode on chariots drawn by good horses, with an esquire or charioteer, in order to charge through battalions with the greater vigour, and to fight with more advantage from them. But people were soon undeceived in these points, by the double inconvenience of being stopped short by hedges, trenches, and ditches; or remaining useless in the midsts of the enemy, when the horses were wounded.

The use of chariots armed with scythes was afterwards introduced. These were placed in the front of the battle, to begin it by breaking the enemy.

* Et cum cominus venerant, gladiis a velitibus trucidabantur. Hic miles tripedalem parmam habet, & in dextra hastas, quibus eminus utitur—Quod si pede collato pugnandum est, translatis in lævam hastis, stringit gladium. *Liv.* l. 38. n. 21.

† Eis parmæ breviores quam equestres, & septena jacula quaternos longa pedes data, præfixa ferro, quale hastis velitaribus inest. *Liv.* l. 26. n. 4.

‡ Arma Romano scutum — & pilum haud paulo quam hasta vehementius ictu missuque telum. *Liv.* l. 9. n. 19.

This manner of fighting was at first in great use amongst all the people of the East, and was believed decisive with regard to victory. The people who excelled most in the art of war, as the Greeks and Romans, did not adopt it; finding by experience, that the cries of the troops attacked in this manner, the discharges of the light-armed soldiers, and, still more than either, the unevenness of the ground, rendered all the equipage of these chariots ineffectual, and often even pernicious to those who employed them.

The nations who had elephants amongst them, as those of the East and Africa, believed that those animals, no less docile than terrible from their force and enormous size, might be of great use to them in battles. Accordingly, when instructed and guided with art, they did them great service. They carried their guides upon their backs, and were usually placed in the front of their armies. Advancing from thence, they broke the closest ranks with an impetuosity that nothing could resist, crushed whole battalions with their vast weight, and diffused universal terror and disorder. To improve their effect, towers were placed on their backs, which were like portable bastions, from the tops of which chosen troops discharged darts and javelins upon the enemy, and completed their defeat.

This custom subsisted long amongst the nations I speak of, from whom it passed to other people, who had learned by fatal experience, how capable those animals were of contributing to victories. Alexander, having conquered the nations subject to the Persian empire, and afterwards India, began to make use of elephants in his expeditions; and his successors, in their wars with each other, rendered the use of them very common. Pyrrhus transported

some into Italy; and the Romans learned of that general, and afterwards of Hannibal, the advantage to be made of them in a day of battle. * It was in the war against Philip, that they used them for the first time.

But this advantage, as great as it appeared, was balanced by inconveniences that at length made them disapprove of the use of elephants. The generals, instructed by experience, rendered the attack of those beasts ineffectual, by ordering their troops to open and give them free passage. Besides this, the frightful cries of the enemy's army, joined with an hail of darts and stones, discharged on all sides by the archers and slingers, put them into confusion, made them mad and furious, and often obliged them to turn upon their own troops, and commit the havock amongst them intended against the enemy. At such times, he who guided the elephant was obliged, for avoiding that misfortune, to plunge an iron spike into their heads, upon which they fell dead immediately.

Liv. l. 27.
n. 49.

Veget. l. 3.
c. 23.
Xenoph.
in Cyrop.
l. 7. p. 176.

Camels, besides being employed to carry, were also of service in battles. They had this convenience in them, that in dry and sandy countries they could support thirst with ease. Cyrus made great use of them in the battle against Cræsus, and they contributed very much to the victory he gained over him, because the horses of the latter, not being able to support the smell of them, were immediately put into disorder. We find, in Livy, the Arabian archers mounted on camels with swords of six feet long, to reach the enemy from the high backs of those animals. Sometimes two Arabian archers sat back to back upon the same camel, in

Liv. l. 37.
n. 40.

* Consul in aciem descendit, ante signa prima locatis elephantis: quo auxilio tum primum Romani, quia captos aliquot bello Punico habebant, usi sunt. Liv. l. 31. n. 36.

order to be able, even in flying, to discharge their darts and arrows against their pursuers.

Neither the elephants nor camels were of any service in armies, in comparison with that of the horse. That animal seems designed by nature for battles. There is something martial in his air, his chest, his pace, as Job so well observes in his admirable description of him.

Job xxxix.
19—25.

In many countries, the horse as well as horseman were entirely covered with armour of iron: these were called *cataphracti equites*.

But what is hard for us to comprehend, amongst all the antient people, the horse had neither stirrups nor saddle, and the riders never used boots. Education, exercise, and habit, had accustomed them not to want those aids; and even not to perceive that there was any occasion for them. There were some horsemen, such as the Numidians, who did not know so much as the use of bridles to guide their horses, and who, notwithstanding, by their voice only, or the use of the heel or spur, made them advance, fall back, stop, turn to the right or left; in a word, perform all the evolutions of the best disciplined cavalry. Sometimes, having two horses, they leaped from one to the other even in the heat of battle, to ease the first when fatigued. These Numidians, as well as the Parthians, were never more terrible, than when they seemed to fly through fear and cowardice. For then, facing suddenly about, they discharged their darts or arrows upon the enemy; who expected nothing less, and fell upon them with more impetuosity than ever.

I have related hitherto what I found most important concerning the arms of the antients. In all times the great captains had a particular attention to the armour of their troops. They did not care whether they glittered or not with gold and silver;

silver; they left such idle ornaments to soft and effeminate nations, like the Persians. They* approved a more lively and martial brightness, one that might inspire terror, such as was that of steel and brass.

Xenoph.
Cypop.
l. 2. p. 40.

It was not only the brightness, but the quality of the arms in particular, to which great generals were attentive. The ability of Cyrus the Great, was justly admired, who, upon his arrival at the camp of his uncle Cyaxares, changed the arms of his troops. Most of them used almost only the bow and javelin, and consequently fought only at a distance; a kind of fight, wherein the greater number had easily the superiority. He armed them with bucklers, cuirasses, and swords or axes, in order to their being in a condition to come to close fight immediately with the enemy, whose multitude thereby became useles. Iphicrates, the celebrated general of the Athenians, made several useful alterations in the armour of the soldiers, in regard to their shields, pikes, swords, and cuirasses.

Plut. in
Philop.
p. 360.

Philopœmen also, as I have observed in its place, changed the armour of the Achæans, which, before him, was very defective; and that alteration did not a little contribute to render them superior to all their enemies. There are many examples of this kind, which it would be too long to repeat here, that shew, of what advantage to an army is the ability of a general, when applied to reforming whatever may be defective; and how dangerous it is tenaciously to retain customs established by length of time, without daring to make any alterations in them, however judicious and necessary.

* Macedonum dispar acies erat; equis virisque, non auro, non discolori veste, sed ferro atque ære fulgentibus. 2. Curt. l. 3. c. 3.

No people were ever more remote from this scrupulous attachment than the Romans. Having attentively studied what their neighbours and enemies practised, they well knew how to apply it to their own advantage; and by the different alterations they introduced in their armies, as well with regard to their armour, as whatever else related to military affairs, they rendered themselves invincible.

ARTICLE IV.

SECT. I.

Preliminary cares of the general.

ALL that we have seen hitherto, the raising of troops, their pay, their arms, their provisions, is in a manner only the mechanism of war. There are other still more important cares, that depend upon the general's ability and experience.

Those, who have distinguished themselves most in the knowledge of military affairs, have always believed it particularly incumbent on the general to settle the plan of the war; to examine whether it is most necessary to act upon the offensive or defensive; to concert his measures for the one or the other of those purposes; to have an exact knowledge of the country into which he marches his army; to know the number and quality of the enemy's troops; to penetrate, if possible, his designs; to take proper measures at distance for disconcerting them; to foresee all the events that may happen, in order to be prepared for them; and to
keep

keep all his resolutions so well disguised and so secret, that no part of them escapes him and takes air. In this last point, perhaps, nothing was ever better observed than amongst us, in the war lately

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terminated; which is not a little for the honour of the ministry and officers.

Liv. l. 44.
a. 12.

We have seen, in the war against Perseus, the wise precautions taken by Paulus Emilius, before opening the campaign, that nothing might be wanting to the success of it; which precautions were the principal cause of his conquering that prince.

It is upon these preliminary provisions the success of enterprises depends. And it was by them Cyrus began, as soon as he arrived in the camp of his uncle Cyaxares, who had not thought of taking any such measures.

It is amazing to consider the orders given by the same Cyrus, before he marched against the enemy; and the immense detail into which he entered with respect to all the necessaries of the army.

He was to march fifteen days through countries that had been destroyed, and in which there were neither provisions nor forage: he ordered enough of both for twenty days to be carried, and that the soldiers, instead of loading themselves with baggage, should exchange that burthen for an equal one of provisions, without troubling themselves about beds or coverlids for sleeping, the want of which their fatigue would supply. They were accustomed to drink wine, and, to prevent the sudden change of their drink from making them sick, he ordered them to carry a certain quantity with them, and to use themselves by degrees to do without it, and to content themselves with water. He advised them also to carry salt provisions along with them,

hand-

hand-mills for grinding corn, and medicines for the sick: to put into every carriage a sickle and a mattock, and upon every beast of burthen an ax and a scythe, and to take care to supply themselves with a thousand other necessaries. He carried also along with him smiths, shoemakers, and other workmen, with all manner of tools used in their trades. For the rest, he declared publicly, that whoever would charge himself with the care of sending provisions to the camp, should be honoured and rewarded by himself and his friends; and even if they wanted money for that service, provided they would give security, and engage to follow the army, he would assist them with it. A detail of this kind, part of which I have omitted, is not unworthy of a general, nor a great prince, as Cyrus was.

We see in Pericles's harangue to the Athenians, ^{Thucyd.} in regard to the Peloponnesian war, how much ^{l. 9.} that great man, who administered the affairs of his republic with so much wisdom, excelled in the science of war, and how vast and profound his foresight was. He regulated the plan of the war, not only for one campaign, but for its whole duration; and settled it upon the perfect knowledge he had himself, and imparted to the Athenians, of the Lacedæmonian forces. He determined them to shut themselves up within their walls, and to suffer their lands to be ruined, rather than hazard a battle against an army much more numerous than their own; whilst, on his side, he went with a fleet to ravage the whole coast of Peloponnesus. He recommended to them especially not to form any enterprises abroad, and not to think of any new conquests, upon which conditions he assured them of victory. It was from despising this advice, and carrying their arms into Sicily, that the Athenians were ruined.

Was

OF THE ART MILITARY.

Was there ever any thing more wise or better concerted than Hannibal's plan of attacking the Romans in their own country! He proposed the same design to Antiochus, which would have distressed the Romans exceedingly, had he followed it: but that prince had neither sufficient extent of mind, nor discernment enough, to comprehend its whole advantage and wisdom.

Alexander had perhaps been stopped short, reduced by famine, and obliged to retreat into his own kingdom, if Darius, as we have observed above, had destroyed the country through which his army was to pass, and had made a powerful diversion in Macedonia, as Memnon, one of his generals, and one of the greatest captains of antiquity, advised him.

To form such plans is not to make war from day to day, and in a manner by chance, and to wait till events determine us; but to act like a great man, and with a just knowledge of the cause we have in hand. * Enterprizes, concerted with so much wisdom, seldom fail of success.

* Qui victoriam cupit, milites imbuat diligenter. Qui secundos optat eventus, dimicet arte, non casu. *Veget.* l. 3. *In prologo.*

S E C T. II.

Departure and march of the troops.

THE beginning and end of the war, the departure and return of the troops, were always solemnised by public acts of religion and sacrifices. Xenoph.
in Cyrop.
l. 1.

The reader undoubtedly remembers, that, in the advice Cambyfes, king of the Persians, gave his son Cyrus, when he set out for his first campaign, he insisted principally upon the necessity of not undertaking any action great or small, either for himself or others, without having first consulted the gods, and offered sacrifices to them. He observed Ibid. l. 2. this counsel with surprising exactness. When he arrived upon the frontiers of Persia, he sacrificed victims to the gods of the country, and to those of Media, as soon as he entered it, to implore their aid, and that they would be propitious to him. His historian is not ashamed to repeat in many places, that this prince took great care, upon all occasions, to discharge this duty, upon which he made the whole success of his enterprises depend. Xenophon himself, a warrior and philosopher, never engaged in any important affair, without having first consulted the gods.

All Homer's heroes appear very religious, and have recourse to the divinity, on all occasions and dangers.

Alexander the Great did not quit Europe, and enter Asia, without having first invoked the divinities of both.

Hannibal,

Liv. l. 21.
n. 21.

Hannibal, before he engaged in the war against the Romans, went expressly to Cadiz, to acquit himself of the vows he had made to Hercules, and to implore his protection by new ones for the success of the expedition he had undertaken.

The Greeks were very religious observers of this duty. Their armies never took the field without being attended by aruspices, sacrificers, and other interpreters of the will of the gods, of which they believed it their duty to be assured before they hazarded a battle.

But, of all the nations of the world, the Romans were the most exact in their recourse to the divinity, either * in the beginning of their wars, in the great dangers to which they found themselves sometimes exposed, or after their victories; and ascribed the success of their arms solely to the care they had taken to render this homage to their gods.

They were mistaken in the object; not the principle; and this universal custom of all nations shews, that they always acknowledged a supreme almighty Being, who governed the world, and disposed at his will of all events, and in particular of those of war, attentive to the prayers and vows addressed to him.

* Ejus belli (contra Annibalem) causâ supplicatio per urbem habitâ, atque adorati dii, ut bene ac feliciter eveniret quod bellum populus Romanus jussisset. *Liv.* l. 21. n. 17.

Civitas religiosa, in principiis maximè novorum bellorum, supplicationes habuit. *Id.* l. 31. n. 9.

March of the army.

When every thing was ready, and the army assembled at the time and place fixed, it began to march. To avoid prolixity, I shall speak only of the Romans in this place: from whence the Reader may form a judgment of other nations.

It is amazing to consider the loads under which the soldiers marched. Besides their arms, says* Cicero, the buckler, the sword, the helmet, (the javelins, or half-pikes, might be added) besides these arms which they considered no more as a burthen than their limbs, for they said their arms were in a manner a soldier's members, they carried provisions for several days, and sometimes for three weeks or a month, with all the implements for dressing their food, and each a stake or palisado of considerable weight. † Vegetius recommends the exercising young soldiers, in carrying a weight of above five and forty pounds a day's march in the usual pace of the army, in order to their being accustomed to it against times of occasion and ne-

* *Nostri exercitus primùm unde nomen habeat, vides. Deinde qui labor, quantus agminis! ferre plus dimidiati mensis cibaria, ferre si quid ad usum velint, ferre vallum: nam scutum, gladium, galeam in onere nostri milites non plus numerant quam humeros, lacertos, manus. Arma enim membra militis esse ducunt; quæ quidem ita gerunt aptè, ut, si usus foret, abjectis oneribus, expeditis armis, ut membris, pugnare possint. Cic. *Tuscul.* 2. n. 37.*

† *Pondus quoque bajulare usque ad 60 libras & iter facere gradu militari, frequentissimè cogendi sunt juniores, quibus in arduis expeditionibus necessitas imminet annonam pariter & arma portandi. Veget. l. 1. c. 19.*

cessity. * And this was the practice of the antient Roman soldiers.

Veget. l. 1.
c. 27.

The usual † march of the Roman army, according to Vegetius, was twenty thousand paces a day; that is to say, at least six leagues, allowing three thousand paces to each league. Three times a month, to accustom the soldiers to it, the foot as well as horse were obliged to take this march.

De bell.
Gall. l. 7.

By an exact calculation of what Cæsar relates of a sudden march, which he made at the time he besieged Gergovia, we find that in four and twenty hours he marched fifty thousand paces. This he did with the utmost expedition. In reducing it to less than half, it makes the usual day's march of six leagues.

Xenoph.
de Exped.
Cyr. l. 7.
p. 427.

Xenophon regularly sets down the days marches of the troops, who returned into Greece after the death of the younger Cyrus, and made the fine retreat so much celebrated in history. All these marches, one with the other, were ‡ six parasanga's, that is to say, more than six of our leagues. The usual marches of our armies are far from being so long; and it is not easy to comprehend how the antients made them so. Their measures have varied very much, which perhaps is the reason of this difference between their day's march and ours.

* Non secus ac patriis acer Romanus in armis
Injusto sub falce viam cum carpit, & hosti
Ante expectatum positus stat in agmine castris.

Virg. Georg. l. 3.

*As when the warlike Roman under arms,
Charg'd with a baggage of unequal weight,
Pursues his march, and unexpected stands
Pitching his sudden tent before the foe.*

Trap.

† Militari gradu viginti millia passuum horis duntaxat quinque
æstivis conficienda sunt. Veget. l. 1. c. 9.

‡ The Parasanga was a Persian measure of the ways. The least consisted of thirty stadia, each stadium of a hundred and twenty-five geometrical paces.

The

The consul, and even the dictator, marched at the head of the legions on foot, because the greatest force of the Romans consisting in the infantry, they believed it necessary for the general to remain always at the head of the battalions. But, as age or infirmity might disable the dictator to support that fatigue, * before he set out for the army, he applied to the people, to demand a dispensation from observing that law established by antient custom, and permission to ride on horseback. † Suetonius represents Julius Cæsar as indefatigable, marching at the head of his armies, sometimes on horseback, but generally on foot, and bareheaded, however the sun shined, or how hard soever it rained. ‡ Pliny praises Trajan, for having accustomed himself early to march on foot at the head of the legions under his command, without ever using either chariot or horse, though he had immense countries to traverse; and he always did the same after he became emperor. Cæsar, of whom I spoke just before, either swam or forded rivers. It was in order to be able to do the same, and to support all the fatigues of war, that the young Romans exercised themselves in horse and foot races, and, all covered with sweat after such violent exercises, threw themselves into the Tyber, and swam over it. Care was taken to form those for several years that were to recruit the legions, and had not served before. For this purpose they made choice of the most healthy, the most active, and the most robust. They were exer-

* Dictator tulit ad populum, ut equum ascendere liceret. *Liv.* l. 23. n. 14.

† Laboris ultra fidem patiens erat: in agmine nonnunquam equo, sæpius pedibus anteibat, capite detecto seu sol seu imber esset. *Sueton. in Jul. Cæs.*

‡ Per hoc omne spatium cum legiones duceres—non vehiculum unquam, non equum respexisti. *Plin. in Trajan.*

cised by fatigues, marches, and toils, which were gradually increased; and such as experience shewed to be unequal to this discipline were dismissed, and only tried soldiers retained, who formed a body of chosen troops.

It was this manly, hardy, and robust education, which at Rome, and long before at Sparta, and in Persia, in the time of Cyrus, made the soldiery indefatigable and invincible.

S E C T. III.

Construction and fortification of the camp.

I Suppose the army upon a march. Though it were still in the territory of Rome, and had only one night to pass in a place, it incamped in all the forms, with no other difference, than that the camp was less fortified there perhaps than in the enemy's country. From thence comes this manner of speaking so usual in Latin authors, *primis castris, secundis castris, &c.* at the first camp, at the second camp: to signify the first or second day's march; because, however short their stay was to be in a place, they never failed to form a camp in it. They called it *stativa*, when they were to stay several days in it: *ibi plures dies stativa habuit.*

This exactness of the Romans in their own country sufficiently intimates their strictness when in sight of, or near, the enemy. It was a law amongst them, established by long custom, never to hazard a battle, till they had finished their camp. We have seen Paulus Emilius spend and arrest the ardour of his whole army to attack Perseus, for no other reason, but because they had not formed their

their camp. * In the war with the Gauls, the commanders of the Roman army were reproached with having omitted this wise precaution, and the loss of the battle of Allia was partly attributed to it. The success of arms being uncertain, the Romans wisely took care to secure themselves a retreat in case of the worst. The fortified camp put a stop to the enemy's victory, received the troops that retired in safety, enabled them to renew the battle with more success, and prevented their being entirely routed; whereas, without the refuge of a camp, an army, though composed of good troops, was exposed to a final defeat, and to being inevitably cut to pieces.

The camp was of a square form, contrary to the custom of the Greeks, who made theirs round. † The citizens and allies divided the work equally between them. If the enemy were near, part of the troops continued under arms, whilst the rest were employed in throwing up the intrenchments. They began by digging trenches of greater or less depth, according to the occasion. They were at least eight feet broad by six deep: but they were often twelve feet in breadth, and sometimes more, to fifteen or twenty. Of the earth dug out of the fossé, and thrown up on the side of the camp, they formed the parapet or breast-work, and, to make it the firmer, they mingled it with turf cut in a certain size and form. Upon the brow of this parapet the palisadoes were planted. I shall re-

* Ibi Tribuni militum non loco castris ante capto, non præmunito vallo quò receptus esset — instruunt aciem. *Liv.* l. 5. n. 37.

† Trifariam Romani muniebant, alius exercitus prælio intentus stabat. *Liv.*

Cæsar—singula latera castrorum singulis attribuit legionibus munienda, fossamque ad eandem magnitudinem præfici jubet; reliquas legiones in armis expeditas contra hostem constituit. *Cæs. de bell. civil.* l. 1.

peat all that Polybius remarks upon these stakes, with which the intrenchment of the camp was strengthened, though I have already done it elsewhere, because this is the proper place for it. He speaks of them, upon the occasion of the order given by Q. Flaminius to his troops, to cut stakes against the time they should have occasion to use them.

Polyb.
l. 17. p.
754, 755.

This custom, says Polybius, which is easy to put in practice amongst the Romans, passes for impossible with the Greeks. They can hardly support their own weight upon their marches: whilst the Romans, notwithstanding the buckler which hangs at their shoulders, and the javelins which they carry in their hands, load themselves also with stakes or palisadoes, which are very different from those of the Greeks. With the latter, those are best which have many strong branches about the trunk. The Romans, on the contrary, leave only three or four at most upon it, and that only on one side. In this manner a man can carry two or three bound together, and much more use may be made of them. Those of the Greeks are more easily pulled up. If the stake be fixed by itself, as its branches are strong, and in great number, two or three soldiers will easily pull it away; and thereby an opening is made for the enemy, without reckoning that the neighbouring stakes will be loosened, because their branches are too short to be interwoven with each other. But this is not the case with the Romans. The branches of their palisadoes are so strongly inserted into each other, that it is hard to distinguish the stake they belong to. And it is as little practicable to thrust the hand through these branches to pull up the palisadoes, because, being well fastened and twisted together, they leave no opening, and are carefully sharpened

sharpened at their ends. Even though they could be taken hold of, it would not be easy to pull them out of the ground, and that for two reasons. The first is, because they are driven in so deep, that they cannot be moved; and the second, because their branches are interwoven with each other in such a manner, that one cannot be stirred without several more. Two or three men might unite their strength in vain to draw one of them out, which, however, if they effected by drawing it a great while to and fro till it was loose, the opening it would leave would be almost imperceptible. These stakes, therefore, have three advantages. They are every-where to be had; they are easy to carry; and are a secure barrier to a camp, because very difficult to break through. In my opinion (says Polybius, in the conclusion he deduces from all he says) there is nothing, practised by the Romans in war, more worthy of being imitated.

The form, dimension, and distribution of the Polyb. different parts of the camp were always the same; so that the Romans knew immediately where their tents were to be pitched. The Greeks differed from them in this. When they were to incamp, they always chose the place that was strongest by its situation, as well to spare themselves the trouble of running a trench round their camp, as because they were convinced, that the fortifications of nature were far more secure than those of art. From thence arose the necessity of giving their camps all sorts of forms, according to the nature of places, and to vary the different forms of them; which occasioned such a confusion, as made it difficult for the soldier to know exactly either his own quarters, or that of his corps.

The form and distribution of the Roman camp admits of great difficulties, and has occasioned great disputes amongst the learned. I shall repeat in this place what Polybius has said upon this head, and shall endeavour to explain him in some places, and to supply what he has omitted in others.

Polyb. l. 6.
P. 473,
477.

He speaks of a consular army, which, in his time, consisted, in the first place, of two Roman legions, each containing four thousand two hundred foot, and three hundred horse; and, in the second, of the troops of the allies, a like number of infantry, and generally double the number of cavalry, which made, in all, Romans and allies, eighteen thousand six hundred men. For the better conceiving the disposition of this camp, we should remember what has been said above upon the different parts into which the Roman legion was divided.

S E C T. IV.

*Disposition of the Roman * camp according to Polybius.*

AFTER the place for the camp is marked out, says Polybius, which is always chosen for its convenience in respect to water and forage, a part of it is allotted for the general's tent, which I shall otherwise call the prætorium, upon an higher ground than the rest, from whence he may see with the greater ease all that passes, and dispatch the necessary orders (1.). A flag was generally planted on the ground where this tent was to be pitched, round which a square space was marked out in such a manner, that the four sides were an hundred feet distant from the flag, and the ground occupied by the consul about four acres. Near his tent were erected the altar, on which sacrifices were offered, and the tribunal for dispensing justice.

The consul commands two legions, of which each has six tribunes, which make twelve in all. Their tents are placed in a right line parallel to the front of the Prætorium, at the distance of fifty feet. In this space of fifty feet are the horses, beasts of burden, and the whole equipage of the tribunes. Their tents are pitched in such a manner, that they have the Prætorium in the rear, and in the front all the rest of the camp. The tents of the tribunes, at equal distances from each other,

* At the end of this section the reader will find a print of the Roman camp, with figures to which those in the text refer.

take

OF THE ART MILITARY.

take up the whole breadth of the ground, upon which the legions are incamped (2.)

Between the tents of the legions and tribunes, a space of an hundred feet in breadth parallel to those of the tribunes is left, which forms a street, called *Principia*, equal in length to the breadth of the camp, which divides the whole camp into the upper and lower parts (3.)

Beyond this street were placed the tents of the legions. The space which they occupy is divided in the midst into two equal parts by a street of fifty feet broad, which extended the whole length of the camp. On each side on the same line were the quarters of the horse, the *Triarii*, the *Principes*, and *Hastarii*. Between the *Triarii* and the *Principes*, there is on both sides a street of the same breadth with that in the middle, which, as well as the latter, runs the whole length of this space. It is also cut by a cross-street called the fifth, *Quintana*, because it opened beyond the fifth maniple.

As each of the four bodies, I have just named, was divided into ten parts; the cavalry into ten companies, *Turmas*, each of thirty men; the three other bodies into ten maniples, of an hundred and twenty each, except those of the *Triarii*, which consisted of only half that number; the quarters of the horse, *Triarii*, *Principes*, and *Hastarii*, were severally divided, each into ten squares, along the space assigned the legions as above described. Each of these squares was an hundred feet every way, except those of the *Triarii*, which were only fifty feet square, upon account of their smaller number, which we have already mentioned.

The tents, whether of the cavalry or infantry, are disposed in the same manner, with their fronts towards the streets.

The

The cavalry of the two legions are first quartered facing each other, and separated by a space of fifty feet, which is the breadth of the street in the middle. This cavalry making only six hundred men, each square contained thirty horse on each side (4), which are the tenth part of three hundred. On the side of the cavalry, the *Triarii* are quartered, a maniple behind a troop of horse, both in the same form. They join as to the ground, but the *Triarii* turn their backs upon the horse, and here each maniple is only half as broad as long, because the *Triarii* are less in number than the other kind of troops (5.)

At fifty feet distance and fronting the *Triarii*, a space which forms a street on each side in length, the *Principes* are placed along the side of the interval (6.)

Behind the *Principes* the *Hastarii* were quartered, joining as to the ground, but fronting the different way (7.)

Thus far we have described the quarters of the two Roman legions, that formed the consul's army, and consisted of eight thousand four hundred foot, and six hundred horse. It remains for us to dispose of the allies. Their infantry were equal to that of the Romans, and their cavalry twice their number. In removing, for the extraordinary or *Evocati*, the fifth part of the infantry; that is to say, sixteen hundred foot, and a third of the cavalry, or four hundred men; there remained in the whole seven thousand five hundred and twenty men, horse and foot, to quarter.

At fifty feet distance, and facing the Roman *Hastarii*, a space which formed a new street on each side, the cavalry of the allies incamp (8), upon a breadth of an hundred and thirty-three feet, and something more.

Behind

Behind that cavalry, and on the same line, in-camp their infantry upon a breadth of two hundred feet (9).

At the head of every maniple, on each side, are the tents of the centurions. The same, no doubt, should be said of the tents of the captains of the horse, though Polybius does not mention them. Part of the remaining space behind the tents of the tribunes, and on the two sides of the Prætorium or consul's tent, was employed for a market (10), and the rest for the quæstor, the treasury, and the ammunition (11).

Upon the right and left, on the sides, and beyond the last tent of the tribunes, facing the Prætorium on a right line, were the quarters of the extraordinary * cavalry, *Evocatorum* (12—14); and of the other voluntier horse, *Selectorum* (13—15). All this cavalry faced, on one side, towards the place of the quæstor, and, on the other, towards the market. It did not only in-camp near the consul's person, but often attended him upon marches; in a word, it was generally at hand to execute the orders of the consul and quæstor.

The Roman infantry, extraordinary and voluntiers, are in the rear of the horse last spoken of, and upon the same line (16), and do the same service for the consul and quæstor.

Above this horse and foot is a street an hundred feet broad, which runs the whole breadth of the camp.

On the other side of this space are the quarters of the extraordinary foot of the allies facing the

* *These two corps were horse, either chosen by the consuls themselves, or such as voluntarily attended them. This gave birth to the Prætorian cohorts, or bands under the emperors. The Selecti or Ablecti, whether horse or foot, were drawn out of the allies. The Evocati were voluntiers, old soldiers, either citizens or allies.*

market,

market, the Prætorium, and the treasury, or place of the quæstor (17).

The extraordinary foot of the allies were incamped behind their horse, and faced the intrenchment and the extremity of the camp (18).

The void spaces that remained on both sides were allotted to strangers and allies, who came later than the rest (19).

All things thus disposed, we see the camp forms a square, and that, as well by the distribution of the streets, as the whole disposition, it very much resembles a city. And this was the soldiers idea of it, who considered the camp as their country, and the tents as their houses.

These tents were generally made of skins; from whence came the expression, much used by authors, *sub pellibus habitare*. The soldiers joined together in messes, which they called *Contubernia*. These generally consisted of eight or ten men.

From the intrenchment to the tents is a space of two hundred feet; and that interval is of very great use, either for the entrance or departure of the legions. For each body of troops advances into that space by the street before him, so that the troops, not marching in the same way, were not in danger of crowding and breaking each other's ranks. Besides which, the cattle, and whatever is taken from the enemy, is placed there, where a guard is kept during the night. Another considerable advantage of it is, that, in attacks by night, neither fire nor dart can be thrown to them; or, if that happens, it is very seldom, and can do no great execution, the soldiers being at so great a distance, and under the cover of their tents. If the camp of Syphax and Asdrubal in Africa had been inclosed within
so

so great a space, Scipio had never been able to have burnt it in one night.

By the exact calculation of the camp, as Polybius describes it, each front contained 2016 feet, which make 672 yards; so that the whole superficies of the camp was 4,064,256 feet, or 225,792 square yards.

Liv. l. 27.
n. 46. When the number of troops was greater, the measure and extent of the camp was augmented, without changing its form. When the consul Livius Salinator received his colleague Nero into his camp, the extent of the camp was not enlarged; the troops were only made to take up less ground, because those of Nero were not to stay long; which was what deceived Asdrubal. *Castra nihil aucta errorum faciebant.*

Polybius does not tell us, where the lieutenants, *Legati*, who held the first rank after the consul, or the prætors and other officers, incamped. It is very likely, that they were not far from the consul, with whom they had a continual intercourse as well as the tribunes.

Liv. l. 40.
c. 27. Nor is he more express upon the gates of the camp, which were four according to Livy: *Ad quatuor portas exercitum instruxit, ut, signo dato, ex omnibus partibus eruptionem facerent.* He afterwards calls them *the Extraordinary, the Right principal, the Left principal, and the Quæstorian.* They have also other names, about which it is not a little difficult to reconcile authors. It is believed that the *Extraordinary* gate was called so, because near the place where the extraordinary troops incamped; and that it was the same as the Prætorian, which took its name from its nearness to the Prætorium. The gate opposite to this, at the other extremity of the camp, was called *porta Decumana*, because near the ten maniples of each legion;

gion; and very probably is the same with the *Quæstorian*, mentioned by Livy, in the place above cited. I shall not expatiate any farther upon these gates, which would require long dissertations.

But we cannot sufficiently admire the order, disposition, and symmetry of all the parts of the Roman camp, which resembles rather a city than a camp: the tent of the general, placed on an eminence, in the midst of the altars and statues of the gods, which seemed to render the Divinity present amongst them; and surrounded on all sides with the principal officers, always ready to receive and execute his orders. Four great streets, which lead to the four gates of the camp, with abundance of other streets on each side of them, all parallel to each other. An infinity of tents, placed in a line at equal distances, and with perfect symmetry. And this camp so vast and extensive, and so diversified in its parts, which seemed to have cost infinite time and pains, was often the work of an hour or two, as if it had rose of itself out of the earth. All this, however, is nothing in comparison with what, in a manner, constitutes the soul of the camp: I mean the wisdom of command, the attention and vigilance of the general, the perfect submission of the subaltern officers, the entire obedience of the soldiers to the orders of their chiefs, and the military discipline, observed with unexampled strictness and severity: qualities which ranked the Roman people above all nations, and at length made them their masters. The Roman manner of incamping must have been very excellent and perfect, as they observed it inviolably for so many ages, and with so great success, and there is almost no example of their camp's being forced by their enemies.

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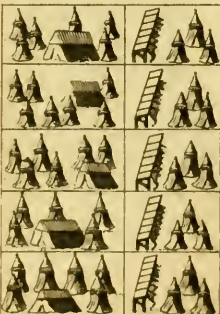
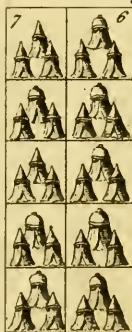
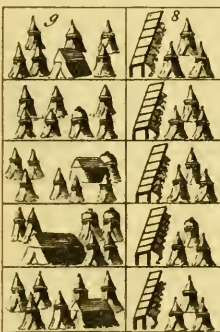
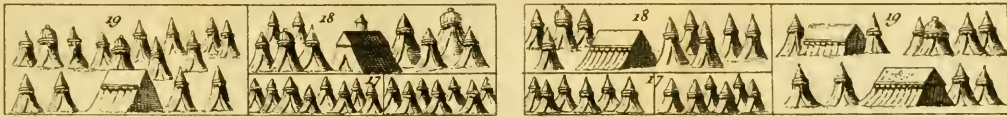
Xenoph.
in Cyrop.
l. 2. p. 80.

This custom of fortifying camps regularly, which the Romans considered as one of the most essential parts of military knowledge and discipline, has been disused by the moderns. The number of troops, of which armies are now composed, and that occupies a considerable extent of ground, seems to render this work impracticable, which would become infinite. The people of Asia, whose armies were far more numerous than ours, never failed to inclose their camp, at least with very deep trenches, though they staid only a day or a night; and often fortified it with good palisadoes. Xenophon observes, that it was the great number of their troops itself, that rendered this practice easy.

It is agreed, that no people ever carried the knowledge and practice of the art of war to an higher degree of perfection than the Romans: but it must be confessed, that their principal excellency lay in the art of incamping, and in drawing up armies in battle array. And this is what Polybius admires most in it, who was a good judge of military affairs, and had been long a witness of the excellent discipline observed amongst the Roman troops. When Philip, the father of Perseus, and before him Pyrrhus, prejudiced by their esteem for the Greeks, and full of contempt for all other nations, whom they treated as Barbarians, saw, for the first time, the distribution and order of the Roman camp, they cried out with surprise and admiration: *Sure that cannot be the disposition of Barbarians!*

But what ought to surprise us most, and what it is even difficult to conceive, so remote are our manners from it, is this character of a people inured to the rudest toils, and invincible to the severest fatigues. We see here the effects of a good

Roman Camp.



good education, and wholsome habits contracted from the most early youth. Most of these soldiers, though Roman citizens, had estates, and cultivated their inheritances with their own hands. In times of peace they exercised themselves in the most painful labours. Their hands, accustomed daily to wield the spade, turn up the land, and guide an heavy plow, only changed exercises, and even found rest in those imposed upon them by the military discipline; as the Spartans are said never to have been more at their ease than in the army and camp, so hard and austere was their manner of living at all other times.

Who could believe, that there was nothing, even to cleanliness, of which particular care was not taken in the Roman camp! As the great street, situated in the front of the Prætorium, was much frequented by the officers and soldiers, who passed through it to receive and carry orders, and upon their other occasions, and thereby exposed to much dirt; a number of soldiers were appointed to sweep and clean it every day in winter, and to water it in summer to prevent the dust.

S E C T. V.

Employments and exercises of the Roman soldiers and officers in their camp.

THE camp being prepared in the manner we have described, the tribunes assemble to take the oath of all the men in the legions, as well free as slaves. All swear in their turn; and their oath consists in a promise not to steal any thing in the camp, and to bring whatever they should find in it to the tribunes.

The soldiers had before taken a like oath, at the time they were listed: I deferred repeating it till now, that, being joined with the other, its force might be the better conceived. By this first oath

Aul. Gell.
l. 16. c. 4.

“ the soldier engages to steal nothing alone or in
“ concert with others, either in the army or with-
“ in ten thousand paces of it; and to carry to the
“ consul, or to restore to its lawful owner, what-
“ ever he may find exceeding the value of one
“ sestertius, that is to say, about five farthings,
“ excepting certain things mentioned in the oath.”

What is said here of ten thousand paces from the army does not mean, that the soldiers were allowed to steal beyond that distance: but whatever they found without those bounds they were not obliged to carry to the consul. Amongst things excepted, was the fruit of a tree, *pomum*.

Frontin.
Stratag.
l. 4. c. 3.

Marcus Scaurus tells us, however, as a memorable example of the Roman abstinence, that, a fruit-tree happening to grow within the inclosure of the camp, when the army quitted it the next day, nobody had touched it. Scaurus commanded the army at that time.

This

This oath shews, how far the Romans carried their attention and exactness in preventing all rapine and violence in the army, because theft is not only prohibited the soldiery, upon pain of the most indispensable severities; but they are not even permitted to appropriate what they find on their way, and chance presents them. Hence the laws actually treat, as theft, the retaining any thing of another's after having found it, whether the owner were known or not: *Qui alienum jacens lucri faciendi causâ sustulit, furti obstringitur, sive scit cujus sit, sive nescit.*

Sabin. ex
lib. Jur.
Civil. 2.

I have said, that theft was prohibited with inexorable severity. There is a very terrible example of this under the emperors. A soldier had stole a fowl from a peasant, and had eat it with nine other men in his mess. The emperor Pescennius Niger condemned them all to die, and only spared their lives at the earnest request of the whole army, obliging each of them to give the countryman ten fowls, and fixing a mark of public infamy upon them during the rest of the war. How many crimes is so wholesome a rigour capable of preventing! What a sight is a camp under such regulations! But what a vast difference is there between soldiers obedient to such a discipline in the midst of Paganism, and our marauders, who call themselves Christians, and fear neither God nor man! The inclosure of the camp was a good barrier against disorder and license; and we shall soon see, that, even upon marches, severity of discipline had no less effect than lines and intrenchments.

Spartian.
in Pescenn.

A wonderful order was observed night and day throughout the whole camp, in respect to the watch word, centinels, and guards; and it was in this its security and quiet consisted. To render the guard more regular and less fatiguing, the

night was divided into four parts or watches, and the day into four stations. Every one had his duty fixed, both in regard to time and place; and in the camp all things were regulated and disposed, as in a well-ordered family.

I have already spoken elsewhere of the simplicity of the antients in regard to their provisions and equipage. The second Scipio Africanus would not suffer a soldier to have any more than a kettle, a spit, and a wooden bowl. * Epaminondas, the glorious Theban general, had only this furniture both for the field and city. The antient generals of Rome were not more magnificent. They did not know † what silver plate was in the army; and had only a bowl and a saltcellar of that metal for sacrifices. The horses glittered also with silver ornaments. The hours of dining and supping were made known by a certain signal. We have observed, that most of the Roman emperors eat in public, and often in the open air. It has been remarked, ‡ that Pescennius made no use of coverings against the rain. The || meals of these emperors, as well as of the antient generals, of whom Valerius Maximus speaks, were such as might be eaten in public without any reserve! the meats of which they consisted had nothing

* Epaminondas, Dux Thebanorum tantæ abstinentiæ fuit, ut in supellecili ejus, præter ahenum & veru unicum, nihil inveniretur. *Frontin. Stratag.* l. 4. c. 3.

† Præter equos virosque & si quid argenti, quod plurimum in phaleris equorum, (nam ad vescendum facto perexiguo, utique militantes, utebantur) omnis cetera præda diripienda militi data est *Liv.* l. 22. n. 52.

‡ Idem in omni expeditione, ante omnes militare cibus sumpsit nec sibi unquam, vel contra imbres, quæsitit tecti suffragium. *Capitol.*

|| Fuit illa simplicitas antiquorum in cibo capiendo, humanitatis simul & continentię certissima index. Nam maximis viris prandere & cœnare in proætulo, verecundiæ non erat. Nec sanè ullas epulas habebant, quas oculis populi subicere erubescerent. *Val. Max.* l. 2. c. 5.

in them, that it was necessary to conceal from the eyes of the soldiers, who saw with joy and admiration, that their masters were no better fed than themselves.

What was most admirable, in the Roman discipline, was the continual exercise to which the troops were kept, either within or without the camp; so that they were never idle, and* had scarce any respite from duty. The new-raised soldiers performed their exercise regularly twice a day, and the old ones once. They were † formed to all the evolutions, and other parts of the art military. They were obliged to keep ‡ their arms always clean and bright. They were made to take hasty marches of a considerable length, laden with their arms, and several palisadoes; and that often in steep and craggy countries. They were habituated always to keep their ranks, even in the midst of disorder and confusion, and never to lose sight of their standards. They were made to charge each other in mock battles, of which the officers, generals, and even the consul himself were witnesses, and in which they thought it for their glory to share in person. When they had no enemy in the field, the troops were employed in considerable works, as well to keep them in exercise, as for the public utility. Such in particular are the highways, called for that rea-

* Opere faciendo milites se circumspectiendi non habebant facultatem. *Hirt. in bell. Afric.*

† Ibi quia otiosa castra erant, crebro decurrere milites cogebat (Sempronius) ut tyrones assuescerent signa sequi, & in acie cognoscere ordines suos. *Liv. l. 23. n. 35.*

Primo die legiones in armis quatuor millium spatio decurrerent. Secundo die arma curare & tergere ante tentoria iussit (Scipio Africanus.) Tertio die sadius inter se in modum iustæ pugnae concurrerent, præpilatisque missilibus jaculati sunt. *Liv. l. 26. n. 51.*

‡ Acuere alii gladios; alii galeas buculasque, scuta alii, loricasque tergere. *Liv. l. 44. n. 34.*

fon *viæ militares*, which are the fruits of this wise and salutary custom: *Stratum militari labore iter.* Quint. l. 2. c. 14.

We may judge whether, amidst these exercises, which were almost continual, the troops could find time for those unworthy diversions, equally pernicious in the loss of time and money. This itch, this phrenzy for gaming, which to the shame of our times has forced the intrenchments of the camp, and abolished the laws of military discipline, had been regarded by the ancients as the most sinister of omens, and the most terrible of prodigies.

End of the FIRST VOLUME.







