Hence, as the Reſiſtance from Preſſion may be ſingle; and as the ſame always accompanies that ariſing from the Magnitude of the Surfaces; and is uſually much the more conſiderable of the two, when it does accompany it: For theſe Reaſons in moſt of the Experiments that are made, it is the only one perceived, and the only one that need to be conſider'd.

But then, as 'tis poſſible, in certain Caſes, for the Preſſion to be very ſlender; and the Number of Parts to be rub'd very great: It muſt be own'd there are Caſes wherein the *Friction* follows very ſenſibly the Proportion of the Surfaces.

For the Friction *of the Parts of Fluids*, ſee RESISTANCE, and RETARDATION *of Fluids*.

FRICTION, in Medicine, and Chirurgery, the Act of rubbing a diſeaſed Part with Oils, Unguents, or other Matters, in order to eaſe, relieve, and cure it. See UNGUENT.

Frictions are much uſed, eſpecially abroad, in Venereal Caſes; where they prefer the applying of Mercury externally, by way of *Friction*; to that of giving it internally to raiſe a Salivation. See SALIVATION, and MERCURY.

There are alſo *Frictions with the Fleſh-bruſh*, a *linen Cloth*, or the *Hand* only: For the Effect of which laſt, ſee STROAKING.

Frictions in the general, and of any kind, are a ſort of Exerciſe that contributes very greatly to Health; as they excite and ſtir up the natural Warmth, divert Defluxions, promote Perſpiration, open the Pores of the Skin, and carry off Humors.

The *Fleſhbruſh*, Dr. *Cheyne* obſerves, is an Exerciſe moſt uſeful for promoting a full and free Perſpiration and Circulation. Every Body knows the Effect of currying of Horſes; that it makes them ſleek, gay, lively, and active; ſo as to be judg'd equivalent to half the Feeding.

This it can no otherwiſe effect, but by aſſiſting Nature to throw off the Recrements of the Juices which ſtop the free Circulation; and by conſtant *Friction*, Irritation and Stimulation, to call the Blood and Spirits to the Parts moſt diſtant from the Seat of Heat, and Motion, and ſo plump up the ſuperficial Muſcles. And the ſame Effects it would have in other Creatures, and Man himſelf, if managed in the ſame manner, and with the ſame Care and Regularity.

Perſons, therefore, of weak Nerves and ſedentary Lives, would do well to ſupply the Want of other Exerciſe with ſpending half an Hour, Morning and Night, in currying and rubbing their whole Body, eſpecially their Limbs, with a Fleſh-bruſh. See EXERCISE.

FRICTION, or FRIXION, in Chymiſtry, is the ſame with what in Cookery we call *Frying*, *viz.* a Preparation of certain Matters in a Pan, with the Addition of ſome unctuous thing, as Oil, Fat, *&c.*

The *Frixion* of Medicines is perform'd over a ſlow, moderate Fire; and that of Foods over a quick one.

FRIDSTOLL, and FRITHSTOW, in our antient Writers, ſignifies a Seat, Chair, or Place of Peace. See SANCTUARY.

In the Charter of Immunities granted to the Church of St. *Peter* in *York*, by *Hen.* 1. and confirmed *An.* 5. *H.* 7. we read thus,—*Quod ſi aliquis veſano ſpiritu agitatus diabolico auſu quemquam capere præſumerit in Cathedra lapidea juxta Altare, quod Anglici vocant* Fridſtol, *i. e.* Cathedra quietudinis *vel* pacis; *hujus tam flagitioſi ſacrilegii emendatio ſub nullo judicio erat, ſub nullo pecuniæ numero claudebatur, ſed apud Anglos* Botelee, *hoc eſt, ſine emenda, vocabatur.*

Of theſe there were many others in *England*; but, the moſt famous was at *Beverly*, which had this Inſcription, *Hæc ſedes lapidea* Freedſtoll *dicitur, i. e.* Pacis Cathedra, *ad quam reus fugiendo perveniens, omnimodam habet ſecuritatem.* Camb.

It ſignifies alſo a Palace, which is uſually a priviledg'd Place.

FRIENDLY *Society*, ſee OFFICE of INSURANCE.

FRIEZE, or FRIZE, or FREEZE, in Architecture, a Member, or Diviſion of the Entablature of Columns, by the Antients call'd *Zophoros*. See FREEZE.

FRIGATOON, a *Venetian* Veſſel, commonly us'd in the *Adriatick*.

It is built with a ſquare Stern, and without any Fore-maſt; having only a Main-maſt, Miſſen-maſt, and Bowſprit.

FRIGID, of the Latin *frigidus*, cold, is variouſly uſed.

A *frigid* Style, is a low, jejune manner of Diction, wanting Force, Warmth of Imagination, Figures of Speech, *&c.* See STYLE.

FRIGID *Zone*, or *Frozen Zone*, in Geography. See ZONE.

FRIGIDITY, is alſo uſed in the ſame Senſe with *Impotency*; ſee IMPOTENCY.

FRIGORIFIC, in Phyſicks; ſomething that occaſions cold. See COLD.

Some Philoſophers, particularly *Gaſſendus*, and other Corpuſcularians, denying Cold to be a mere Privation or Abſence of Heat, contend that there are actual *frigorific* Corpuſcles, or Particles as well as fiery ones: Whence proceed Cold and Heat. But the later Philoſophers allow of no other *frigorific* Particles, beſide thoſe nitrous Salts, which float in the Air in cold Weather, and occaſion Freezing. See FREEZING.

FRIPPERY, a *French* Term, ſometimes uſed in our Language.

Frippery, or *Fripperie*, properly imports the Trade, or Traffick of old ſecond-hand Cloaths, and Goods.

The Word is alſo uſed for the Place, where ſuch ſort of Commerce is carried on, and even for the Commodities themſelves.——

The Company of *Frippiers*, or *Fripperers* at *Paris*, are a regular Corporation, of an antient Standing, and make a conſiderable Figure among the *Communautes* of that City. See BROKER.

FRIT, or FRITT, in the Glaſs Manufacture, is the Matter, or Ingredients, whereof Glaſs is to be made, calcined, or baked in a Furnace. See GLASS.

A Salt drawn from the Aſhes of the Plant Kali, or from Fern, mix'd with Sand, or Flints, and baked together, make an opake Maſs, called by Glaſſmen *Frit*; probably from *frittare*, to fry; or by reaſon the *Frit*, when melted, runs into lumps like *Fritters*, called by the *Italians*, *Fritelli*.

By the Antients it was called *Hammonitrum*, or *Ammonitrum*, of ἄμμος, Sand, and νίτρον, Nitre: Under which Name it is deſcribed by *Pliny* thus: Fine Sand from the *Volturnian* Sea, mix'd with three times the Quantity of Nitre, and melted, makes a Maſs call'd *Ammonitrum*; which being re-boiled, makes pure Glaſs. *Hiſt. Nat. L.* 36. *c.* 26.

Frit, *Neri* obſerves, is only the Calx of the Materials which make Glaſs; which, tho' they might be melted, and Glaſs be made without thus calcining them, yet would it take up much more Time. This Calcining, or making of *Frit*, ſerves to mix and incorporate the Materials together, and to evaporate all the ſuperfluous Humidity. The *Frit* once made, is readily fuſed and turned into Glaſs.——

There are three kinds of *Frits*: The Firſt, *Cryſtal Frit*, or that for Cryſtal Metal, made with Salt of Polverine and Sand.

The Second, and ordinary *Frit* is made of the bare Aſhes of Polverine, or Barillia, without extracting the Salt from them. This makes the ordinary white, or cryſtal Metal.

The Third, is *Frit* for Green Glaſſes, made of common Aſhes, without any Preparation. This laſt *Frit* will require 10 or 12 Hours baking.

The Materials in each, are to be finely powder'd, waſh'd, and ſierced; then equally mix'd; and frequently ſtirr'd together in the Melting Pot. For the reſt ſee GLASS, and CRYSTAL.

FRITHBURGH, ſee FRIBURGH.

FRITHGILD, was antiently the ſame we now call a *Guild*, or a *Fraternity*, or *Company*. See GILD.

FRIZE, or FRIEZE, in Architecture, a Part of the Entablature of Columns, more uſually wrote, and pronounced *Freeze*. See FREEZE.

FRIZE, or FREEZE, in Commerce, a kind of woollen Cloth, or Stuff, for Winter Wear, being *frized* or nap't on one Side; whence, in all Probability, it derives its Name.

Of *Frizes*, ſome are croſs'd; others not croſs'd. The former are chiefly of *Engliſh* Manufacture: The latter of *Iriſh*. See FRIZING.

FRIZING *of Cloth*, a Term in the Woolen Manufactury, applied to the forming of the Nap of a Cloth, or Stuff, into a number of little hard Burs, or Prominences, covering almoſt the whole Ground thereof.

Some Cloths are only *frized* on the Back-ſide; as black Cloths: Others on the right Side, as colour'd and mix'd Cloths, Rateens, Bays, Frizes, *&c.*

Frizing may be perform'd two ways: One *with the Hand*, *i. e.* by means of two Workmen, who conduct a kind of Plank, that ſerves as a *frizing* Inſtrument.

The other *by a Mill*, work'd either by Water, or a Horſe; or ſometimes by Men. This latter is eſteem'd the better way of *frizing*; by reaſon the Motion being uniform, and regular, the little Knobs of the *Frizing* are form'd more equably, and alike. The Structure of this uſeful Machine is as follows.

The three principal Parts are, The *Frizer*, or Criſper; the *Frizing* Table; and the *Drawer*, or Beam.

The two firſt are two equal Planks or Boards, each about ten Foot long, and fifteen Inches broad; differing only in this, that the *Frizing* Table is lined, or cover'd with a kind of coarſe Woolen Stuff, of a rough, ſturdy Nap; and that the Frizer is incruſtated with a kind of Cement, compoſed of

Glue, Gum Arabick, and yellow Sand, with a little *Aqua Vitæ*, or Urine. The *Beam*, or Drawer, is thus called, by reaſon it draws the Stuff from between the *Frizer* and *Frizing* Table, which is a wooden Roller, beſet all over with little, fine, ſhort Points or Ends of Wire, like thoſe of Cards, uſed in carding of Wool.

The Diſpoſition and Uſe of the Machine is thus: The Table ſtands immoveable, and bears, or ſuſtains the Cloth to be frized, which is with that Side uppermoſt, on which the *Frize* is to be raiſed. Over the Table is plac'd the *Frizer* at ſuch Diſtance from it, as to give room for the Stuff to be paſs'd between them: So, that the *Frizer* having a very ſlow ſemicircular Motion, meeting the long Hairs or Nap of the Cloth, twiſts and rolls them into little Knobs, or Buttons; while, at the ſame time, the Drawer, which is continually turning, draws away the Stuff from under the Frizer, and winds it over its own Points.

All that the Workman has to do while the Machine is going, is to ſtretch the Stuff on the Table, as faſt as the Drawer takes it off; and, from time to time, to take off the Stuff from the Points of the Drawer.

It has already been obſerv'd, that the *Frizing* Table is lined with Stuff of a ſhort, ſtiff, ſtubby Nab; the Uſe whereof is to detain the Cloth between the Table, and Frizer long enough for the Grain to be form'd; that the Drawer may not take it away too readily; which muſt otherwiſe be the Caſe, inaſmuch as it is not held by any thing at the other End.

It were needleſs to ſay any thing particular of the manner of *frizing* Stuffs with the Hand; it being the Aim of the Workmen to imitate as near as they can, with their wooden Inſtrument, the ſlow, equable, and circular Motion of the Machine. It needs only be added, that their Frizer is but about two Foot long, and one broad; and that to form the Nap more eaſily, they moiſten the Surface of the Stuff lightly with Water, mingled with Whites of Eggs, or Honey.

FRONT, the *Forehead*, or that Part of the Face above the Eyebrows. See *Os* FRONTIS.

The Word is form'd of the Latin *Frons*, and that from the *Greek* φρενεῖν, to think, perceive; of φρὴν, *mens*, the Mind, Thought. *Martinius*, to make out this Etymology, obſerves, that from the Forehead of a Perſon we perceive what he is, what he is capable of, and what he thinks of. *DuLaurens* chuſes to derive it from *ferre*, by reaſon it *bears* the Marks of what we have in our Head.

FRONT is alſo us'd where ſeveral Perſons, or Things are ranged Side by Side, and ſhew their *Front*.

Thoſe Troops ranged in form of Battel made a large *Front*: The three Legions were here diſpos'd in two Lines, as *Cæſar* us'd to do, when with a few Forces he had occaſion to extend his *Front*. The *Front* of the Army conſiſted of ſo many Battalions, and ſo many Squadrons.

The Military Evolutions teach how to make a *Front* of any Side, *i. e.* How to preſent the Face and Arms to the Enemy, what Side ſoever he attack on. They attack'd the Enemy in *Front*, and in *Flank*. See FLANK,

FRONT, in Architecture, the principal Face, or Side of a Building: Or that preſented to the chief Aſpect, or View. See FACE.

The Palace conſiſts of a large Pile in *Front*, flank'd with two Wings. See FRONTISPIECE.

FRONT, in Perſpective, a Projection, or Repreſentation of the Face or Fore-part of an Object; or of that Part directly oppoſite to the Eye; call'd alſo, and more uſually, *Orthography*. See ORTHOGRAPHY.

FRONTAL, in Architecture, a little *Fronton*, or Pediment, ſometimes placed over a little Door, or Window. See PEDIMENT.

FRONTALE *Os*, in Anatomy, ſee *Os* FRONTIS.

FRONTALE, or FRONTAL, in Medicine, an external Form of Remedy, applied on the Forehead, with a Bandage; for the Cure of the Head Ach, Megrim, Vapours, &c.

Frontals are compoſed of Roſes, Elder Flowers, Betony, Marjoram, Lavender, &c. wrap'd in a Linen Cloth, and applied over the Forehead and Temples.

There are alſo *Frontals* in manner of Linements, made of *Unguentum populeum*, Extract of Opium; or of Paſtes, Powders, Seeds, &c.

In *Frontals* applied to eaſe the Violence of the Head-ach in the height of Fevers, they frequently mix the Kernels of Cherries.

FRONTAL, FRONTLET, or BROW-BAND, is alſo us'd in ſpeaking of the Jewiſh Ceremonies.

The *Frontal* conſiſts of four ſeveral Pieces of Vellum, on each whereof is wrote ſome Text of Scripture. They are all laid on a piece of black Calves Leather, with Thongs to tye it by. The Jews apply the Leather with the Vellum on their Foreheads, in the Synagogue, and tie it round the Head with the Thongs.

FRONTALES, in Anatomy, two Muſcles, one on each Side the Forehead; commonly ſuppoſed to ſpring from the Skull, but now known to ariſe from the Occipital Muſcles; or rather, it appears that the *Frontales* and Occipitales are only one continued Digaſtric Muſcle, on each Side, moving the Scalp and Skin of the Forehead and Eyebrows. See OCCIPITALIS.

The *Frontales* begin to be thus denominated after they have begun to paſs the Coronal Suture, with Fibres paſſing obliquely to the Eyebrows, where they terminate, and in the lower Part of the Skin of the Forehead.

They have each two Appendages; the ſuperior, or external is commonly fix'd to the Bone of the Noſe; the lower is fix'd to the *Os Frontis*, and is by *Volcherus Coiter* made a diſtinct Muſcle, and called *Corrugator*, from its Uſe in drawing the Eyebrows to each other.

FRONTATED, a Term us'd by the Botaniſts, to expreſs that the Petalum or Leaf of a Flower grows broader and broader; and at laſt, perhaps, terminates in a Right Line.

In oppoſition to *cuſpidated*, which expreſſes that the Leaves terminate in a Point. See PETALA.

FRONTIER, the Border, Confine, or Extreme of a Kingdom, or Province; which the Enemies find in *Front*, when they would enter the ſame.

A *Frontier* Town: *Frontier* Province. *Frontiers* were antiently called *Marches*. See MARCHES.

The Word is derived from the French *Frontiere*, and that of the Latin *Frontaria*, as being a kind of Front oppoſed to the Enemy. *Skinner* derives *Frontier* from *Front*; inaſmuch as the *Frontier* is the exterior, and moſt advanced Part of a State, as the Front is that of the Face of a Man.

FRONTIS *Os*, in Anatomy, the Bone of the Forehead. See FRONT.

The *Os Frontis* is a Bone of the Cranium, in form almoſt round: It joins the Bones of the Sinciput and Temples by the Coronal Suture, and the Bones of the upper Jaw by the tranſverſe Suture, and the Os Sphænoides, by the Sphænoidal Suture. See CRANIUM.

It forms the upper Part of the Orbit, and has four Apophyſes, which are at the four Angles of the two Orbits.

It has two Holes above the Orbits, thro' which paſs the Vein, Artery, and ſome Twigs of the firſt Branch of the fifth Pair. It has alſo one in each Orbit, a little above the Planum, thro' which a Twig of the Opthalmick Branch of the fifth Pair of Nerves paſſes to the Noſe.

It has two Sinus's above the Eyebrows, between its two Tables; they are lined with a thin Membrane, in which there are ſeveral Blood Veſſels and Glands, which ſeparate a mucous Seroſity, that falls into the Noſtrils.

The Inſide of this Bone has ſeveral Inequalities, made by the Veſſels of the Dura Mater. It has two large Dimples made by the anterior Lobes of the Brain. Above the Criſta Galli, it has a ſmall blind Hole, into which the End of the Sinus *longitudinalis* is inſerted.

FRONTISPIECE, in Architecture, the *Portail*, or principal Face of a fine Building. See PORTAIL.

The *Frontiſpiece* of the *Louvre* is the fineſt Piece of Architecture in *France*.

The Word is form'd of the Latin *Frontiſpicium*, q. d. *Frontis hominis inſpectio*. Hence, by a Figure, we ſay the *Frontiſpiece* of a Book, meaning an Ornament with an engraven Title on the firſt Page.

FRONTLET, ſee FRONTAL.

FRONTON, in Architecture, an Ornament among us, more uſually called *Pediment*. See PEDIMENT.

FROST, an exceſſive cold State of the Weather, whereby the Motion and Fluidity of Liquors is ſuſpended: Or, it is that State of the Air, &c. whereby Fluids are converted into Ice. See FREEZING, and ICE.

Metals contract, or are ſhorten'd in *Froſt*. Monſ. *Auzout* found by Experience, that an iron Tube twelve Foot long loſt two Lines of its Length, upon being expoſed to the Air, in a froſty Night. But this we ſuppoſe wholly the Effect of the Cold.

Froſt does not contract Fluids, as was formerly imagined: On the contrary, it ſwells or dilates them by nearly $\frac{1}{10}$ of their Bulk.

Scheffer aſſures us, that in *Sweden* the *Froſt* pierces into the Earth two Cubits, or *Sweediſh* Ells; and turns what Moiſture is found therein, into a whitiſh Subſtance, like Ice. He adds, that ſtanding Waters freeze to a greater Depth; even to three Ells, or more: But thoſe that have a Current, leſs; and rapid Waters, and bubbling Springs, never.

Mr. *Boyle* gives us ſeveral Experiments of Veſſels made of Metals, exceeding thick and ſtrong; which being fill'd with Water, cloſe ſtop'd, and expoſed to the Cold: The Water, in freezing, coming to be expanded; and not finding either Room, or Vent, burſt the Veſſels.

A ſtrong Barrel of a Gun, with Water in it, cloſe ſtop'd and *frozen*, was rent the whole Length: And a ſmall Braſs Veſſel, five Inches deep, and two in Diameter, fill'd with Water, &c. liſt up its Lid, which was preſs'd with a Weight of 56 Pounds.

Olearius

Olearius assures us, that in the City of *Moscow* he observ'd the Earth to be cleft by the *Frost* many Yards length, and a Foot broad. *Scheffer* mentions sudden Cracks or Rifts in the Ice of the Lakes of *Sweden*, nine or ten Foot deep, and many Leagues long; and adds, that the Rupture is made with a Noise not less terrible than if many Guns were discharged together. By such means the Fishes are furnish'd with Air; so that they are rarely found dead.

In the great *Frost* of 1683, Oaks, Ashes, Walnut Trees, *&c.* Mr. *Bobart* tells us, were miserably split, and cleft, so that one might see thro' them; and this frequently with terrible Noises, like the Explosion of Fire Arms. The Clifts were not only in the Bodies, but continued to the larger Boughs, Roots, *&c.* See an Inquiry into the Circumstances and Causes hereof in the *Philos. Transact.* N° 165. See also FREEZING *Rain.*

The Natural History's of *Frosts* furnish very extraordinary Effects thereof. The Trees are frequently scorch'd and burnt up as with the most excessive Heat; of which there are divers Instances in so warm a Climate as that of *Provence*. *Mezeray*, *Hist. de France*, An. 1570.

The Year 1708 was remarkable throughout the greatest Part of *Europe* for a severe *Frost*. Mr. *Derham* says, it was the greatest in Degree, if not the most universal in the Memory of Man. It extended throughout *England*, *France*, *Germany*, *Denmark*, *Italy*, &c. But was scarce felt in *Scotland* or *Ireland*. All the Orange Trees, and Olives in *Italy*, *Provence*, &c. And all the Walnut Trees throughout *France*, with an Infinity of other Trees, perish'd by *Frost*.

They had a kind of Gangrene grew on them; which Mons. *Gauteron* takes to have been the Effect of a corrosive Salt, corrupting and destroying their Texture. He adds, there is so much Resemblance between the Gangrene befalling Plants thro' *Frost*, and that which the Parts of Animals are liable to, that they must have some analogous Cause. Corrosive Humors burn the Parts of Animals; and the aerial Nitre condensed, has the same Effect on the Parts of Plants. *Penetrabile* Frigus *adurit. Memoires de l'Academie Royale des Sciences*, An. 1709.

In *Germany* the Fresh-water Fish were every where killed; and a vast Destruction befell the smaller Birds. The Spittle was no sooner out of a Man's Mouth, than it was froze. The *Lusatian* Letters add, that many Cows were froze to death in their Stalls; and many Travellers on the Road were some quite froze to death, others lost their Hands, Feet, Noses, or Ears.

G. Remus, the Author of an Academical Exercise on this Subject, publish'd at *Hall* in *Saxony*, entitled *Consideratio Physico-Mathematica Hyemis proxime præterlapsi*, gives Instances from the News Papers, of two Gentlemen and a Smith in *England*; and above 60 Men, and many Cattle near *Paris*; and the like at *Venice*, and 80 *French* Soldiers near *Namur*; all kill'd on the Road with *Cold*. On the Coasts of *Italy* many of the Mariners abroad the *English* Men of War died of the Cold; and several lost part of their Fingers and Toes.

In *England*, the greatest Sufferers in the animal Kingdom, Mr. *Derham* observes, were Birds and Insects; particularly Larks and Robin-red-breasts: Much the greatest Part of which perish'd. But the Vegetables were much the greatest Sufferers. Few of the tender Sorts escaped: Bays, Hollies, Rosemary, Cypress, Alaterni, Phyllyrea's, Arbuti, Lauristines, and even Furze, with most of the frutescent Herbs, as Lavenders, Abrotonums, Rue, Thyme, *&c.* Mr. *Bobart* informs us, were generally destroyed. The same Writer adds, that the Sap of the finer Wall Fruit was so congealed, and disorder'd, that it stagnated in the Limbs and Branches, and produced Disorders like to Chillblains in human Bodies, which in many Parts of Trees would turn to Mortifications: That the very Buds of the finer Trees, both the Leaf Buds, and Blossom Buds, were quite killed and dried into a farinaceous Matter.

In *Switzerland*, *Scheuchzer* relates, that not only the Walnut Trees and Vines, but even the Beech, Laryx, *&c.* were undone. And yet in some Parts of those Cantons, he adds, there never was a milder Winter Season known.

Mr. *Derham* relates it as a common Observation, that Vegetables suffer'd more from the Sun, than the *Frost*; in that the Sun-shine melting the Snow, and opening the Ground, left it more exposed to the Rigours of the ensuing Night. And at a Meeting of the Royal Society, it was observed, that the Calamities which befel Trees, arose not purely from their being frozen; but principally from the Winds shaking and rocking them, when they were so; which rent and parted their Fibres. *Philosoph. Transact.* N° 324.

Hoar FROST, or *White* FROST, *Pruina*, is the Dew, *froze* or congealed early in cold Mornings; chiefly in Autumn.

Hoar Frost, Mr. *Regis* observes, consists of an Assemblage of little Parcels of Ice, or Crystals; which are of various Figures, according to the different Disposition of the Vapours, when met and condensed by the Cold. See CRYSTALLIZATION.

Dew, is in all appearance the Matter of *Hoar Frost*: Tho' many of the *Cartesians* will have it form'd of a Cloud, and either congealed in the Cloud, and so let fall; or ready to be congealed assoon as it arrives at the Earth. See DEW.

FROTH, a white, light Substance, form'd on the Surface of Fluids, by vehement Agitation. See BOILING.

Froth consists wholly of little Spherules, or Globules; and accordingly, may be defined an Assemblage of *Aqueo-aereal* Bubbles. See BUBBLE; see also SCUM.

FROZEN, or FRIGID *Zone*, see ZONE.

FRUGIVOROUS *Birds*, according to Mr. *Willoughby*, are those of the Parrot kind, which tho' they have a crooked Beek and Talons, and therefore belong in general to the Birds of Prey, as being rapacious, and carnivorous; yet because they eat *Fruit* too, he distinguishes them from the rest by the Title of *Frugivorous*. See BIRD.

FRUIT, in its general Sense, includes whatever the Earth produces, for the Nourishment and Support of Men, and other Animals; as Herbs, Grains, Pulse, Hay, Corn, Flax, and every thing, express'd by the *Latins* under the Name *Fruges*. See HERB, GRAIN, PULSE.

The Devotion and Solemnity of Rogation Week, were instituted to procure a Blessing on the Fruits of the Earth. See ROGATION.

In the Civil Law, we distinguish three kinds of *Fruits*: Natural *Fruits*, which the Earth produces spontaneously, and without any Culture; as those of Trees.

Fruits of Industry, which, tho' Natural, require some Culture to perfect them.

And Civil *Fruits*, which are only *Fruits* in the Eye of Law, as Rents, Salaries, Wages, *&c.*

In the Canon Law, *Fruits* include every thing whereof the Revenue of a Benefice consists; as Glebe, Tythes, Rents, Offerings, Mills, *&c.* See FIRST *Fruits.*

FRUIT, in Nat. History, is the Production of a Tree, or Plant; for the Propagation, or Multiplication of its Kind: In which Sense *Fruit* includes all kinds of Seeds, with their Furniture, *&c.* See SEED.

FRUIT, in Botany, is properly that Part of a Plant wherein the Seed is contain'd; called by the Latins *Fructus*, and the *Greeks* καρπὸς.

The *Fruit* of a Plant is sometimes single, as in the Poppy; and sometimes in great Number, as in the Apple Tree, *&c.* Sometimes dry; and sometimes soft, and fleshy.

The Word also implies an Assemblage of Seeds, in a Plant, as in a Ranuncula, Pea, *&c.* And in the general, all kinds of Grains, whether naked, or inclosed in a Cover, Capsula or Pod, whether bony, fleshy, skinny, membranous, or the like. See SEED, GRAIN.

The *Fruit* is the Product, or Result of the Flower; or that for whose Production, Nutrition, *&c.* the Flower is intended. See FLOWER, and GENERATION *of Plants.*

The Structure and Parts of different *Fruits* are somewhat different; but in all the Species, the essential Parts of the *Fruit* appear to be only Continuations, or Expansions of those observ'd in the other Parts of the Tree.

Dr. *Beal* suggests some very good Reasons for a direct Communication between the remotest Parts of the Tree and the *Fruit*; so that the same Fibres or Stamina, which constitute the Root, Trunk and Boughs are extended into the very Fruit. See PLANT.

Thus, cutting open an *Apple* transversely, it will be found to consist of four Parts, *viz.* 1° A *Skin*, or Cortex, which is only a Production of the Skin, or outer Bark of the Tree. 2° A *Parenchyma*, or Pulp; which is an Expansion, and Intumescence of the Ble or inner Bark of the Tree. 3° *Fibres* or Ramifications of the woody Part of the Tree, dispersed throughout the Parenchyma.

Of these last, Authors generally reckon fifteen principal Branches: Ten whereof penetrate the Parenchyma, and incline to the Basis of the Flower; the other five ascend more perpendicularly from the Pedicle, or Stalk, meet with the former at the Base of the Flower: To which Branches are fasten'd the Capsulæ or Coats of the Kernels.

These Branches being at first extended through the Parenchyma to the Flower, furnish the necessary Matter for the Vegetation thereof; but, the *Fruit* increasing, it intercepts the Aliment, and thus the Flower is starved, and falls off.

4° The *Core* which is the Produce of the Pith or Medulla of the Plant; indurated and strengthen'd by Twigs of the Wood and Fibres, inosculated therewith. It serves to furnish a Cell, or Lodge for the Kernels; filtrates the Juice of the Parenchyma, and conveys it thus prepared to the Kernel.——

In a *Pear* we distinguish five Parts, *viz.* the Skin, Parenchyma, Ramification, Stone, and Acetarium.

The three first Parts are common to the Apple. The *Stone*, observ'd chiefly in Choak Pears, is a Congeries of stony Corpuscles, dispers'd throughout the whole Parenchy-

ma,

ma, but in the greateſt Plenty, and cloſeſt together, about the Centre or Acetarium. It is form'd of the ſtony or calculous Parts of the nutritious Juice of the Parenchyma, extravaſated in Maſſes.

The *Acetarium*, is a Subſtance of a tart, acid Taſte, of a globular Figure, inclos'd in an Aſſemblage of ſeveral of the ſtony Parts above-mention'd.

In the *Plumb*, *Cherry*, &c. there are four Parts, *viz.* A *Coat*, *Parenchyma*, *Ramification*, and *Stone*, or *Nucleus*. The Stone conſiſts of two very different Parts; the inner, call'd the *Kernel*, is ſoft, tender, and light; being derived from the Pith or Medulla of the Tree by ſeminal Branches, which penetrate the Baſe of the Stone: The external or harder Part, called the *Stone*, or *Shell*, is a Concretion of the ſtony, or calculous Parts of the nutritious Juice; like the Stone in Pears, and like that, contains a ſoft, parenchymous Matter within it.——

The *Nut*, analogous to which is the *Acorn*, conſiſts of a *Shell*, *Cortex*, and *Medulla*. The *Shell* conſiſts of a Coat and Parenchyma, derived from the Bark and Wood of the Tree. The *Cortex* conſiſts of an inner, and outer Part: The firſt is a Duplicature of the inner Tunic of the Shell; the ſecond is a moſſy Subſtance, derived from the ſame Source as the Parenchyma of the Shell. But whether the Medulla or Pulp of the Kernel ariſe from the Pith of the Tree, or the cortical Part of the *Fruit*, is not agreed.

Laſtly, *Berries*, as Grapes, *&c.* beſide three general Parts, *viz.* Coat, Parenchyma, and Ramification, contain *Grains* of a ſtony Nature, to do the Office of Seeds.

As to the Uſe of *Fruits*, beſide the Pleaſure and Advantage they afford Men, *&c.* they are of ſervice in guarding, preſerving, and feeding the Seed incloſed; in filtrating the coarſer, more earthy and ſtony Parts of the nutritious Juice of the Plant, and retaining it to themſelves; ſending none to the Seed but the pureſt, moſt elaborated and ſpirituous Parts for the Support and Growth of the tender delicate Embryo, or Plantule contain'd therein.

So that the *Fruit* does the ſame Office to the Seed that the Leaves do to the *Fruit*. See PLANT, GENERATION, FLOWER, LEAVES, &c.

FRUIT, in Gardening, is the Production of *Fruit-Trees*; as the *Apple*, *Pear*, *Plumb*, *Peach*, *Apricock*, *Cherry*, *Grape*, *Currant*, *Orange*, *Fig*, *Almond*, &c. See FRUIT-*Tree*.

Fruits are diſtinguiſh'd into *Stone Fruit*, and *Kernel Fruit*; *Summer Fruit*, and *Winter Fruit*; *Wall Fruit*, and *Dwarf Fruit*, &c.

Monſ. *Quintiney* obſerves, that cold, heavy, moiſt Lands produce the faireſt and largeſt *Fruit*; but the hotter, dryer, and lighter, the more delicious and rich taſted.

FRUITS, with regard to Commerce, are diſtinguiſh'd into Recent, or *Freſh*; and *Dry*.

Recent *Fruits* are thoſe ſold juſt as they are gather'd from the Tree, without any further Preparation: As are moſt of the Productions of our Gardens and Orchards, ſold by the *Fruiterers*.

Dry *Fruits* are thoſe dried in the Sun, or by Fire, with other Ingredients, ſometimes added to them, to make them keep; imported chiefly from beyond Sea, and ſold by the *Grocers*. Such are *Raiſins*, *Currants*, *Figs*, *Rice*, *Capers*, *Olives*, *Cloves*, *Nutmegs*, *Pepper*, and other *Spices*: Which ſee under their reſpective Articles, RAISIN, CURRANT, FIG, *&c.* See alſo SPICERY.

Under the Denomination of Dry *Fruits* are alſo frequently included Apples, Pears, Almonds, Filberds, *&c.*

FRUIT *Trees* are diſtinguiſh'd, like the *Fruits* they bear, into Wall *Fruit* Trees, Standard *Fruit* Trees, *&c.* See FRUIT, and TREE.

With regard to *Fruit Trees*, Monſ. *Quintiney* obſerves, 1° That the cutting and trimming of young Trees hinders them from quick bearing; tho' it contributes both to the Beauty of the Tree, and the Richneſs and Flavour of the *Fruit*.

2° That Kernel *Fruit* Trees come later to bear, than Stone *Fruit* Trees; the Time required by the firſt before they arrive at a fit Age for bearing, being, one with another, about four or five Years: But that when they do begin, they bear in greater Plenty than Stone *Fruit*.

3° That *Stone Fruit*, Figs and Grapes commonly bear conſiderably in three or four Years; and bear full Crops the fifth and ſixth Year; and hold it for many Years, if well order'd.

4° That *Fruits* in the ſame Neighbourhood will ripen a fortnight ſooner in ſome Grounds, than others of a different Temperature.

5° That in the ſame Spot, hot or cold Summers ſet conſiderably forward, or put backwards the ſame *Fruit*.

6° That the *Fruits* of Wall Trees generally ripen before thoſe on Standards; and thoſe on Standards before thoſe on Dwarfs.

7° That the *Fruits* of Wall Trees planted in the South and Eaſt Quarters commonly ripen about the ſame time; only thoſe in the South rather earlier than thoſe in the Eaſt: Thoſe in the Weſt are later by eight or ten Days, and thoſe in the North by 15 or 20. See EXPOSURE.

For the *Planting*, *Pruning*, *Engrafting*, &c. of *Fruit Trees*, ſee PLANTING, TRRNSPLANTING, PRUNING, ENGRAFTING, &c. See alſo ORCHARD, GARDEN, SEMINARY, &c.

Monſ. *de Reſſons*, in the *Memoires de l'Academie Royale des Sciences*, An. 1716. gives us a Method of *Grafting Stone Fruit Trees*, without loſing of Time; ſo that a Tree which bore ſorry *Fruit* the preceding Year, ſhall bear the choiceſt the Year following.

It frequently happens, that Perſons are deceiv'd in their *Fruit* Trees; eſpecially thoſe bought of the Nurſery Men: And it is a melancholy thing, after having waited three Years for *Fruit*, to find it naught at laſt; and to be oblig'd to graft the Tree again, and wait four Years more, for the ſecond Hopes. In effect, in the common Methods of grafting, they know nothing better than to cut off the Head of a Tree, and make it put forth new Wood, to graft in: This neceſſarily makes a long Delay; which Monſ. *Reſſons* ſhews how to abridge.

Upon conſidering the Union of the Sap in Grafts, that Author was led to think, that all the Office the Bark has in grafting, is to receive the Scutcheon; ſo that if the Bark be not quite hard, dry, and inflexible, and incapable of yielding without Cracking, or Burſting; it ſhould ſeem indifferent, whether one grafted on new Wood, or old: The Sap paſſing equally into both. Which Reaſoning had the Fortune to be verify'd by a Number of Experiments made with that View.

We are at liberty, then, to graft almoſt at any Age, and in any Wood. Accordingly, a Peach Tree of a worſe Kind or Quality, may be grafted from another of the beſt, in Autumn, in the Height of its *Fruit*, and Sap, without cutting off any Branches; the Graft ſoon cements to the Tree by the Union of the Saps, without ſhooting at all: So that cutting off the Branches above the Grafts the Spring following; the ſame Graft inſerted the preceding Autumn will ſhoot vigorouſly; and being on a Wood of the ſame Kind, the *Fruit* thenceforth produc'd will be much the larger and finer. But this is not the great Point: For the Tree thus ingrafted will not bear till the third Year; and we want *Fruit* the firſt.

In order to this, it is to be obſerv'd, that there are three kinds of Branches: *Wood Branches*, growing immediately from the Stem or Stock of the Tree: *Fruit Branches*, and Branches *half Wood*, *half Fruit*, being ſuch as ariſing from the largeſt Wood Branches, preſerve the Character thereof, but which, in two Years time will produce *Fruit* Branches. Now, 'tis theſe intermediate kind of Branches, that we are to chuſe for Scutcheons or Grafts. They are eaſily known by being bigger than the *Fruit* Branches; and leſs than the Wood Branches: They have each of them two, three, four, or even five Leaves to each Eye; and the Eyes are further diſtant from each other than thoſe of the *Fruit* Branches, but cloſer than thoſe of the Wood Branches. It muſt be added, that the Eyes on ſuch Branch are three; one, intended for a Wood Branch, being ſituate between the two Leaves, and advancing further than the other two, which are intended for *Fruit*, and are plac'd without-ſide the Leaves.

'Tis theſe laſt are the preciſe Subject to be choſen for the Grafting withal. Twelve of theſe Scutcheons, more or leſs, according to the Strength of the Tree to be grafted on, being duly applied; we may depend on a Crop of good *Fruit*, the very next Year, on the ſame Tree which laſt Year produced the worſt.

Stone-FRUIT-*Trees*, ſee STONE *Fruit*, and TREE.
Wall-FRUIT-*Trees*, ſee WALL *Fruit*, and WALL.

FRUITERY, a Place for the laying up and keeping of *Fruit*.

The *Fruitery* ſhould be inacceſſible to any thing of Moiſture, or even Froſt.

FRUITFULNESS, the Quality of bearing plenty of Fruit; call'd alſo Fertility, and *Fecundity*. See FECUNDITY.

FRUMENTACEOUS, a Term applied to all Plants which have a Conformity with Wheat, or *Frumentum*; either in reſpect of their Fruits, Leaves, Ears, or the like.

Thus Barley, Dogs-graſs, *&c.* are *Frumentaceous Plants*.

FRUMENTARII, in Antiquity, a kind of Soldiers, or Archers, under the Weſtern Empire.

St. *Cyprian* relates, in one of his Letters, that ſome of theſe *Frumentarii* were ſent to take him.

The firſt time we read of *Frumentarii*, as Officers, is in the Time of the Emperor *Adrian*. *Spartian*, in his Life of that Prince, aſſures us, that he made uſe of them to inform himſelf of what paſs'd: Before, the Name *Frumentarius* was only given to the Corn Merchants, or Meaſurers of Corn.

These *Frumentarii* did not make any particular Corps, distinct from the other Forces: But there were a certain Number of them in each Legion; as, among us, there are a certain Number of Grenadiers in each Battalion. Accordingly, in antient Inscriptions, we meet with *Frumentarii* of this or that Legion.

'Tis suppos'd they were originally a Number of young Persons dispos'd by *Augustus* throughout the Provinces, particularly on all the grand Roads, to advertise the Emperor with all Expedition of every thing that happen'd. In order to this, they had a kind of Intendance of all the Carriages: And on this account came to be employ'd for the Conveyance of Corn, *Frumentum*, to the Armies: Whence their Appellation.

Afterwards they were incorporated into the Troops themselves; where they still retain'd their antient Name.

Their principal Office was the giving of Intelligence; in which they agreed with those call'd *Curiosi*, with whom they were frequently join'd. See CURIOSI.

FRUMENTY, popularly FURMETY, a kind of Pottage, or Broth, the Basis whereof is Wheat, boil'd up with Milk, Sugar, and sometimes Spice.

Pliny tells us, that in his Time they mix'd Chalk among it. *Galen* describes it as a very nutritious sort of Corn or Pulse, boil'd with Water, Wine, and Oil.

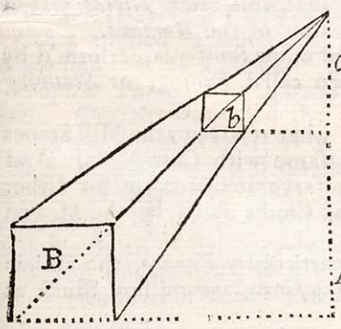
The *Latins* call'd it *Alica*, which *Festus* derives *ab alendo*; as being very feeding. But then it must be observ'd, they made it of any kind of Corn.

Ours being restrain'd to Wheat, we have given its Denomination accordingly, from *Frumentum*.——An Emulsion, wherein Wheat were an Ingredient, would be a kind of *Frumenty*.

FRUSTUM, in Mathematicks, a Piece cut off or separated from a Body.

Thus the *Frustum of a Pyramid*, or *Cone*, is a Part, or Piece thereof; cut off, usually, by a Plane, parallel to the Base. See PYRAMID, and CONE.

All round, and square Timber that goes tapering, may be conceived as the *Frustum* of a Cone, or Pyramid; to find the Quantity whereof, take the following Theorem; which in the main is Mr. *Oughtred's*. Given, B, the Side of the Greater Base, *b* the lesser Base's Side, A the Height of the *Frustum*: Tho', below, we suppose B and *b* to represent the Area's of the two Bases. Whole Height $a + A = H$.



First, to find *a*, say, as $B - b : b :: A : \frac{bA}{B-b}$, or $\frac{bA}{x}$. Now B H = 3 times the whole Pyramid, because any Prism is 3 times a Pyramid of the same Base, and Height with it, by 7 and 10 Euclid, and $ba = 3$ times the upper Pyramid.

Wherefore $\frac{BH - ba}{3}$ equal to the *Frustum* of the Pyramid required; which Theorem in Words is this.

Multiply the lower Base by the whole Height; and from the Product subtract the upper Base multiply'd by the Height of the Top-piece wanting; and then one third of the Remainder shall give the *Frustum*.

And the same way you may proceed for the *Frustum* of a Cone; only it will be more difficult to find the Circular Bases.

FRUTEX, SHRUB, a Vegetable, of a Genus between a Tree, and Herb; but of a woody Substance. See SHRUB.

FRUTICOSE *Stalks*, of Plants, are those of a hard woody Substance. See STALK.

FRYTH, or FRITH, is explain'd by Sir *Edward Coke*, as a Plain between two Woods; a *Lawnd*. *Chaucer* uses it for a Wood.

Camden, for an Arm of the Sea; or a Streight, between two Lands: from *Fretum*.—Maketh his Issue into the Estuary or *Frith* of *Thames*.

Smith, in his *England's* Improvement, makes it signify all Hedge-wood, except Thorns.

How to reconcile these different Sentiments, we know not; but we are sure the *Saxon* Word signifies *Peace*; and that *Fryth*, in our Records, is often us'd for a Wood: *Lector, tu tibi Oedipus esto.*

FUAGE, or FOCAGE, a Tax, or Imposition, laid on Hearths, or Chimnies; *i. e.* Fire-places, or Families, call'd also *Hearth Silver*, and *Chimney Money*. See HEARTH *Silver*, and CHIMNEY *Money*.

Edward III, the Black Prince, having *Acquitain* granted him, laid an Imposition of *Fuage*, or *Focage* upon the Subjects of that Dukedom, *viz.* One Shilling for every Fire. After his Example, *Charles* V. of *France* laid a like Tax of a Franc for each Fire for one Year only. His Successor *Charles* VI. augmented it under the same Name: *Charles* VII. render'd it perpetual, and call'd it *Taille*.

By an Ordinance of *Humbert* II. Dauphin of *France*, the Imposition of *Fouage*, or *Feuage*, was then laid *per Feu*, i. e. *per Fire*, or Family, *seu per Lares focum habentes*. In *Latin* it was call'd *Focagium*, q. d. *pro singulis focis*.

Sometimes it was also call'd *Fournage*, on account of the Oven, or Furnace: In *Greek* καπνικὸν, of κάπνος, *fumus*, Smoak.

In *Will. Tyr. de Bello Sacro*, it is call'd *Foagium*: For it was also impos'd by the Kings of *Jerusalem*. The Counts, and other Lords likewise impos'd it on their Feudataries, or Vassals. *Zonaras* assures us, that the General *Nicephorus* first establish'd it among the *Greeks*.

FUCUS, in Natural History, a Sea-plant, call'd also *Alga*. See *Marine* PLANT.

The Flowers of the *Fucus* grow on the whole Extent of its Leaves; in form of little Tufts, composed of a great Number of exceedingly fine Filaments, about the length of a Line. The Seed is inclos'd in a viscid Matter, at the Extremity of the Leaves. See MUSHROOM, CORAL, GENERATION *of Plants*, SEED, &c.

FUCUS is also us'd for a *Paint*, or a Composition applied on the Face, to beautify it, and heighten the Complexion. See COSMETIC.

Old Women make use of *Fucus's* and Pomatums, to appear young. The *Fucus* made with Cerus, is corrosive, and pernicious to the Skin.

The Chymists abuse the Ladies in selling them Oil of Bricks, as an excellent *Fucus*. *Pliny* says, that the *Fucus* of the *Roman* Ladies was a kind of white Earth, or Chalk brought from *Chio*, and *Samos*, dissolv'd in Water.

The *Fucus Solimanni* is a Composition of prepared Sublimate, in great Repute among the *Spaniards* of *Peru*.

FUEL, or FEWEL, the Pabulum of Fire; see FEWEL.

FUGA *Vacui*, in the antient School Philosophy, a Principle, whereby various Effects were produced, arising from a supposed Aversion, in Nature, to a Vacuum. See VACUUM.

The *Fuga Vacui* was a very fertile, and extensive Principle; and solved abundance of Difficulties with a deal of Ease. Suppose, *e. gr.* a Syringe; immerse one Extreme of it in Water; and draw up the Embolus, or Sucker: Then hear how the Antients will reason upon it. They first laid it down for granted, that there can be no Vacuum; then arguing, that there must be a Vacuum, unless the Water should follow the Embolus; they conclude, that the higher the Embolus is drawn, the higher shall the Water ascend; and this, *Fugâ Vacui*, to keep out a Vacuum.

In after times, the Matter was stated in other Terms; and the Water was said to rise, *Metu Vacui*, for fear of the Vacuum; which must otherwise ensue. And at length, as if this were not enough, instead of *Fuga*, and *Metus*, they substituted the Word *Horror*; and affirm'd, that the Water rose out of Natures *Abhorrence* of a Vacuum. Which was just as good Sense, as if a Person being ask'd, Why Coals were brought to *London*? should answer, That it was done *fuga*, or *metu*, or *horrore frigoris*; for *fear* of Cold. Which is giving the Final Cause, when the Efficient one was required.

Most of the Phænomena, which the Antients ascribed to the *Fuga Vacui*, the Moderns have demonstrated to arise from the Gravity and Pressure of the Air. This is the Case in the Ascent of Water in Syringes, Pumps, &c. See AIR; see also PUMP, SYRINGE, &c.

FUGALIA, in Antiquity, a Feast, celebrated among the *Romans*. See FEAST.

Hoffman, after *Festus*, takes the *Fugalia* to be the same with the *Regifugium*, a Feast held on the 24th of *February*, in Memory of the Expulsion of the Kings, and the abolishing of the Monarchical Government. But *Struvius*, *Antiq. Roman. Syntag. c. 9.* distinguishes the *Fugalia* from the *Regifuge*: And even doubts, whether the *Regifugium* were thus called on account of the Expulsion of the Kings; or, by reason the *Rex Sacrorum*, after the Sacrifice was ended, fled hastily out of the *Forum*, and *Comitia*. See REGIFUGIUM.

Be this as it will, the only antient Author of Note, that makes express mention of the *Fugalia*, is St. *Augustin*, *De Civit. Dei*, L. II. c. 6. And his Commentator *Vives*, shews a great Inclination to correct the Reading of the Word, were it not, that St. *Augustin* adds, that the Feast was a true *Fugalia*; all Decency and Modesty being banish'd therefrom.

That learned Person conjectures, that the *Fugalia* were the same thing with the *Poplifugia*, or the Feast of *Fugia*, the Goddess of Joy; occasioned by the Rout of an Enemy; which was the Reason why the People abandon'd themselves to Riot and Debauchery: And that the Feast was first instituted on occasion of the Victory gain'd over the *Ficulneates*, *Fidenates*, and neighbouring Nations, upon their Attempt to take Possession of *Rome*, the Day after

ter the People had withdrawn from it. As related by *Varro L. V. de Ling. Lat.*

But *Varro* relates, that the *Poplifugia*, which fell on the Month of *June*, were held in Memory of the Flight, or Retreat of the People, in a Sedition rais'd among them: 'Tis true, he adds, that the Day followed soon after the Retreat of the *Gauls*, and the time when the neighbouring Nations conspir'd against them: But this does not appear to have any relation to the *Poplifugia*, being only meant to mark the *Æra*, or Time when the Sedition and Flight of the *Roman* People happen'd.

After all, tho' the *Poplifugia* might have been originally establish'd in Commemoration of the Flight of the People; and not that of the Enemies; this does not hinder, but the *Fugalia* of St. *Auguſtin* may probably be the *Poplifugia* of *Varro*: according to the Conjecture of *Vives*.

FUGITIVE, a Wanderer, or Renegado; a Person oblig'd to fly his Country, or remove from a Place where he had some Aboad, or Establishment; on account of his Crimes, Debts, or other Occasions.

A Person who has broke open, or escaped out of Prison, is oblig'd to be a *Fugitive*. *Cain* became a *Fugitive*, after the Murther of his Brother.

Among the Learned, *fugitive* Pieces are those little Compositions, on loose Sheets, or half Sheets; thus call'd, because easily lost, and soon forgot.

In the *Roman* Law, a *Fugitive* Slave was such a one as was apt to run away from his Master. In selling a Slave, the Master was oblig'd to declare, whether or no he were *fugitive*. The Term is also apply'd to Deserters in an Army; or those who fly from the Combat.

FUGITIVES *Goods*, *Bona Fugitivorum*, are the proper Goods of him that flies upon Felony; which after the Flight lawfully found, do belong to the King, or Lord of the Manor. See WAIF.

FUGUE, in Music, is when the different Parts of a musical Composition follow each other; each repeating what the first had perform'd.

There are three kinds of *Fugues:* The Single *Fugue*; Double *Fugue*, and *Counterfugue*.

The *Single*, or *Simple* FUGUE, is some Point consisting of 4, 5, 6, or any other Number of Notes, begun by one single Part, and then seconded by a third, fourth, fifth, and sixth Part, if the Composition consists of so many, repeating the same, or such like Notes; so that the several Parts follow, or come in, one after another in the same manner, the leading Parts still flying before those which follow.

FUGUE-*Double*, is when two or more different Points move together in a *Fugue*, and are alternately interchanged by several Parts.

For the Counter FUGE, see COUNTER *Fugue*.

The *Italians* say, a *Fugue of Rooms*, or *Chambers*, meaning a Series, or Range of Rooms, the Doors whereof answer in a Right Line behind each other; so as they may be all seen at once, from one Extreme to the other.

FULCRUM, PROP, in Mechanicks; see LEVER.

FULIGINOUS, an Epithet applied to a thick Smoak, or Vapour, replete with Soot, or other crass Matter. See SMOAK, SOOT, and VAPOUR.

The Word is form'd from the Latin *Fuligo*, Soot; and is rarely used but when join'd with *Vapour*. In the first Fusion of Metals there exhales a great deal of *fuliginous* Vapour; which retain'd and collected, makes what we call *Litharge*. See LITHARGE.

Lampblack is what is gather'd from the *fuliginous* Vapours of Pines, and other resinous Woods, when burnt. See *Lamp* BLACK.

Some Physicians talk of *fuliginous* Vapours, emitted from the Spleen to the Brain; which they will have the Cause of the Hypocondriac and Hysteric Disorders: Thence called the *Vapours* and *Spleen*. See HYPOCONDRIAC, &c.

FULL, is variously us'd, in opposition to empty, narrow, confin'd, &c.

The *Carteſians* hold, that the Universe is *full*, i. e. every Part, or Point has Matter in it. See PLENUM.

When the Body is *full* of Humors, it should be purged. See PLENITUDE, and PLETHORA.

An Embassador has *full* Power given him to act, transact, &c.——The Army was in *full* March, *i. e.* the whole Army was in March, with all the Forces it consisted of.—

A Man is said to bear the Arms of a Family, *full*, i. e. without any Differences. See DIFFERENCE.

FULL *Moon*, *Plenilunium*, the Phasis of the Moon, when her whole Disk, or Face is illumined; which is in the Time of her Opposition to the Sun. See PHASIS, MOON, and OPPOSITION.—

Eclipses of the Moon, happen at the time of *full Moon*, See ECLIPSE.

FULLER, a Workman employ'd in the Manufactories, to *full*, mill, or scour Cloths, Rateens, Serges, and other woolen Stuffs, by means of a Mill; to render them thicker, more compact, and durable. See FULLING.

The *Fullers*, among the *Romans*, wash'd, scour'd, and fitted up Cloaths; and their Office was judged of that Importance, that there were formal Laws prescrib'd them for the manner of performing it.

Such was the *Lex Metella de Fullonibus*. See also *Pliny* L. VII. c. 56. *Ulpian* lib. 12. ff. *de Furtis*, l. 13. §. 6. *Locati*, l. 12. §. 6. ff. &c.

The Word is form'd of the Latin *Fullo*, which signifies the same thing.

FULLERS *Earth*, a fatty, fossile Earth, abounding in Nitre; of great Use in the woolen Manufacture.

It serves to scour Cloths, Stuffs, &c. and imbibe all the Grease, and Oil necessarily used in the preparing, dressing, &c. of the *Wool*. See WOOL, CARDING, WEAVING, CLOTH, &c.

Fullers Earth is only dug out of certain Pitts near *Brickhill* in *Staffordshire*; no other Country affording any.

It is absolutely necessary to the well dressing of Cloth; and hence, Foreigners, who can procure Wool to be clandestinely exported out of the Kingdom, can never reach to the Perfection of the *English* Cloths, &c. without *Fullers* Earth.

For this reason, it is made a contraband Commodity; and the Export made equally criminal, with that of exporting Wool. See CONTRABAND.

Abroad they make great use of Urine, in lieu of *Fullers* Earth. This Earth abounds much in the vegetative Salt, which promotes the Growth of Plants; and is therefore reckon'd by Sir *H. Plat*, and others, a great Improver of Land. When dissolv'd in Vinegar, it disperses Pimples and Pushes; checks Inflammations, and cures Burns.

FULLERS *Weed*, *Thistle*, or *Teazle*. See TEAZLE.

FULLERY, a Work-house, or Place where Cloths, &c. are *fulled*.

The Term is principally understood of the Fulling Mill. Thus, when they say, Carry that Cloth, Serge, or the like, to the *Fullery*, they mean it is to be sent to the Mill, to be scour'd and fulled. See *Fulling* MILL.

FULLING, the Art, or Act of cleansing, beating, and pressing Cloths, Stuffs, Stockings, to render them stronger, closer, and firmer; call'd also *Milling*. See MILL.

Pliny, *lib.* 7. *cap.* 16. assures, that one *Nicias*, the Son of *Hermias*, was the first Inventor of the Art of *Fulling*: And it appears by an Inscription, quoted by Sir *G. Wheeler*, in his Travels thro' *Greece*, that this same *Nicias* was a Governour in *Greece*, in the time of the *Romans*.

The *Fulling of Cloths*, and other Stuffs, is perform'd by a kind of Water Mill; thence call'd *Fulling*, or *Scouring Mill*.

These Mills, excepting in what relates to the Mill Stones and Hopper, are much the same with Corn Mills. And there are even some, which serve indifferently for either Use; Corn being ground, and Cloths full'd by the Motion of the same Wheel.

Whence, in some Places, particularly *France*, the Fullers are call'd Millers; as grinding Corn, and milling Stuffs at the same time.

The principal Parts of the *Fulling* Mill, are, The *Wheel*, with its Trundle; which gives Motion to the *Tree*, or Spindle, whose Teeth communicate it to the *Pestles*, or Stampers, which are hereby raised, and fallen alternately according as its Teeth catch on, or quit a kind of Latch in the Middle of each Pestle. The Pestles and Troughs are of Wood; each Trough having at least two, sometimes three Pestles, at the Discretion of the Master, or according to the Force of the Stream of Water.

In these Troughs are laid the Cloths, Stuffs, &c. intended to be *fulled:* Then, letting the Current of Water fall on the Wheel, the Pestles are successively let fall thereon, and by their Weight and Velocity stamp, and press the Stuffs very strongly; which by this means become thickned and condensed.

In the Course of the Operation, they sometimes make use of Urine; sometimes Fullers Earth, and sometimes Soap.

To prepare the Stuffs, to receive the first Impressions of the Pestle, they are usually laid in Urine; then in Fullers Earth, and Water; and lastly in Soap, dissolv'd in hot Water.

Soap alone would do very well; but this is expensive; though Fullers Earth, in the way of our dressing, is scarce inferior thereto; but then it must be well clear'd of all Stones and Grittinesses, which are apt to make Holes in the Stuff.

As to Urine, 'tis certainly prejudicial, and ought to be entirely discarded; not so much on account of its ill Smell, as of its Sharpness, and Saltness; which is apt to render the Stuffs dry and harsh.

The true Method of *Fulling* with Soap, is deliver'd by Monsr. *Colinet*, in an authentic Memoir on that Subject, supported by Experiments made by order of the Marquis *de Louvois*, then Super-Intendent of the Arts and Manufactories of *France*. The Substance of which we shall here subjoin.

Method

Method of Fulling *Cloths and Woolen Stuffs, with Soap.*

A colour'd Cloth, of about 45 Ells, is to be laid, in the uſual manner, in the Trough of a *Fulling* Mill; without firſt ſoaking it in Water, as is commonly practiced in many Places.

To full this Trough of Cloth, 15 Pounds of Soap are requir'd; one half of which is to be melted in two Pails of River or Spring Water, made as hot as the Hand can well bear it. This Solution is to be pour'd by little and little upon the Cloth, in proportion as 'tis laid in the Trough: And thus it is to be fulled for at leaſt two Hours; after which it is to be taken out, and ſtretch'd.

This done, the Cloth is immediately return'd into the ſame Trough; without any new Soap; and there full'd two Hours more. Then taking it out, they wring it well, to expreſs all the Greaſe and Filth.

After this ſecond *Fulling*, the Remainder of the Soap is melted, as the former, and caſt at four different times, on the Cloth; remembring to take out the Cloth every two Hours, to ſtretch it, and undo the Plaits and Wrinkles it has acquired in the Trough. When they perceive it ſufficiently full'd, and brought to the Quality and Thickneſs required, they ſcour it out for good, in hot Water, keeping it in the Trough, till it be quite clean.

As to white Cloths; in regard theſe *full* more eaſily, and in leſs time, than colour'd ones, a third Part of the Soap may be ſpared.—

FULLING *of Stockings, Caps*, &c. ſhould be performed ſomewhat differently; *viz.* either with the Feet, or the Hands; on a kind of Rack, or wooden Machine, either arm'd with Teeth of the ſame Matter, or elſe Horſes, or Bullocks Teeth.

The Ingredients made uſe of herein, are Urine, green Soap, white Soap, and Fullers Earth. But the Urine alſo is reckon'd prejudicial here.

Note, woven Stockings, *&c.* ſhould be full'd with Soap alone: For thoſe that are knit, Earth may be us'd with the Soap.

Indeed, 'tis frequent to full theſe kinds of Works with the Mill, after the uſual manner of Cloths, *&c.* But that is too coarſe and violent a Manner, and apt to damage the Work, unleſs it be very ſtrong. See STOCKINGS.

FULMINANT, FULMINANS, or FULMINATING, an Epithet applied to ſomething that *thunders*, or makes a Noiſe like that of Thunder. See THUNDER.

Jupiter Fulminans: Aurum Fulminans: Pulvis Fulminans. Pericles was call'd the *fulminating* Orator.

Aurum FULMINANS, is a Preparation of Gold, thus called, becauſe when laid on the Fire, it produces a huge Noiſe. It conſiſts of Gold diſſolv'd in *Aqua Regia*, and precipitated by means of Oil of Tartar *per Deliquium*; or Volatile Spirit of Sal Ammoniac. See GOLD.

Pulvis FULMINANS, is a Compoſition of three Parts of Nitre, two Parts of Salt of Tartar, and one of Sulphur. See GUN-POWDER.

Both the *Aurum* and *Pulvis Fulminans* produce their Effect principally downwards: In which they differ from Gunpowder, which acts *in orbem*; but principally upwards. If they be laid in Braſs Ladles, and ſo ſet a fire; after Fulmination, the Ladles will be found perforated.—

FULMINATING *Legion*, was a Legion in the *Roman* Army, conſiſting of Chriſtian Soldiers; who, in the Expedition of the Emperor *Marcus Aurelius* againſt the *Sarmatæ*, *Quadi* and *Marcomanni*, ſaved the whole Army, then ready to periſh of Thirſt; by procuring, with their Prayers, a very plentiful Shower thereon: And, at the ſame time, a furious Hail, mix'd with Lightning and Thunderbolts on the Enemy. See LEGION.

This is the Account commonly given by Eccleſiaſtical Hiſtorians: And the whole Hiſtory is engraven in Baſs-Relivo's, on the *Anthonine* Column. And hence aroſe the Denomination *Fulminants*: Tho' ſome ſay, that the Legion thoſe Chriſtians were of, was called the *Fulminating Legion* before.

FULMINATION, in the *Romiſh* Canon Law, a Sentence of a Biſhop, Official, or other Eccleſiaſtic appointed by the Pope; whereby it is decreed, that ſome Bull ſent from the Pope, ſhall be executed. See BULL.

Fulmination is the ſame thing with the *Verification*, or Recognition of a Letter, or Inſtrument of a Prince in a Lay Court.

FULMINATION is alſo us'd for the Denunciation, or Execution of a Sentence of Anathema, made in publick, with due Solemnity.

In fulminating Anathema's, the Biſhop who pronounces Sentence, is to be cloathed in his Epiſcopalia. See ANATHEMA, EXCOMMUNICATION, &c.

FULMINATION, or FULGURATION, in Chymiſtry, a vehement Noiſe, or Shock made by divers Preparations; as *Aurum fulminans*, &c. when ſet on Fire. See DETONATION.

FUMIGATION, in Medicine, and Chymiſtry, is underſtood of Things taken in *Fume*, or Smoak; or that are turn'd into Smoak: And particularly for the Corroſion of a Metal, by the Fumes, or Steam of Lead, Mercury, Vinegar, or other acrimonious Matter.

'Tis dangerous taking Mercury by *Fumigation*. This *Fumigation* is a kind of potential Calcination; the Vapour of Mercury laid on the Fire, corroding and reducing into a Calx, the little Laminæa of Metals ſuſpended over it. See MERCURY.

Ceruſs is made by the *Fumigation*, or Vapour of Vinegar, gnawing and corroding Plates of Lead. See CERUSS.

Alexander Severus made a very ſevere Decree againſt Phyſicians who ſold Smoak, that is, *Fumigations*. The Decree imported, Fumo *pereat qui* Fumum *vendidit*. A Northern Phyſician has an expreſs Treatiſe to juſtify the Phyſicians in this reſpect.

FUMIGATION is alſo uſed for the Act of making a ſuſpended Body receive the Fumes, or Steam of one or more other Bodies; in order to calcine them, to correct them, or impart to them ſome new Quality.

FUNAMBULUS, among the *Romans*, was what we call a Rope-dancer, and the Greeks, *Scænobates*. See ROPE-DANCER.

The Term is alſo us'd for ſuch as letting themſelves down by a Rope, or Cord; make their Eſcape out of a City, or Place beſieged: as obſerv'd by *Du Cange*.

Julius Capitolinus, and *Horace*, make mention of *Funambuli*. *Acron*, on *Horace*, aſſures us, that it was the Orator *Meſſala*, who firſt introduc'd the Word *Funambulus*, in lieu of *Schænobates*, us'd by the *Greeks*. For the *Greeks* ſeem to have had of theſe Rope Dancers from the firſt Inſtitution of their Scenic Games, which are ſaid to have been invented about the time of *Iſcharius*, Son of *Erigon*; or of *Dionyſius*, ſurnamed *Liber Pater*, whom *Theſeus* firſt introduced into *Athens*.

At *Rome*, the *Funambuli* firſt appear'd under the Conſulate of *Sulpitius Peticus*, and *Licinius Stolo*, who were the firſt Introducers of the Scenic Repreſentations. It is added, that they were firſt exhibited in the Iſland of the *Tiber*: And that the Cenſors *Meſſala* and *Caſſius* afterwards promoted them to the Theatre.

In the *Floralia*, or *Ludi Florales*, held under *Galba*, there were *funambulatory* Elephants, as we are inform'd by *Suetonius*. *Nero* ſhewed the like, in honour of his Mother *Agrippina*. *Vopiſcus* relates the ſame of the Time of *Carinus* and *Numerianus*.

There was a *Funambulus*, it ſeems, of that Mankind, who perform'd at the time when the *Hecyra* of *Terence* was acted; and the Poet complains, that the Spectacle prevented the People from attending to his Comedy. *Ita populus ſtudio ſtupidus in* funambulo *animum occuparat*.

FUNCTION, the Act of doing ſomething, for which the Agent was deſtined, or which he was obliged to. See ACTION.

Thus we ſay, the Stomach performs its *Function*; *i. e.* digeſts, well. The Fumes of Wine diſturb the Brain in the Performance of its *Functions*.

Phyſicians divide the *Functions* of the human Body into *Vital*, *Natural*, and *Animal*.

Vital FUNCTIONS are thoſe neceſſary to Life; and without which it cannot ſubſiſt: As the Actions of the Heart, Brain, Lungs, *&c.* See LIFE.

Natural are thoſe which change the Food, *&c.* ſo as to aſſimilate it to our own Nature: Such are the Actions of the Viſcera, and the Veſſels which receive, retain, ſecern, *&c.* the Humors. See NATURAL.

Animal, are thoſe without which we cannot perceive, will, remember, *&c.* Such are *Feeling*, *Seeing*, *Imagining*, *Judging*, *Paſſions*, *voluntary Motion*, &c.

FUNCTION is alſo us'd figuratively in ſpeaking of the Offices, Duties, or Occupations a Perſon is engaged in.

He acquitted himſelf of all the *Functions* of the Magiſtracy with Applauſe. The Actions of an Embaſſador muſt be diſtinguiſh'd from his *Functions*; the one regard his Character; the other his Perſon.

FUND, FUNDUS, a *Latin* Term, us'd for the *Bottom* of certain Things; and particularly of certain Parts of the Body.

FUND *of the Eye*, is that Part poſſeſs'd by the Choroeides and Retina. See EYE, RETINA, &c.

The Images of Objects are repreſented in an inverted Situation, in the *Fund* of the Eye. See VISION.

FUNDUS *Uteri*, or *Fund of the Womb*, is the Body, or principal Part thereof; in contradiſtinction to the *Cervix*, or Neck; the *Oſculum*, or Mouth; and the *Vagina*. See UTERUS.

FUNDUS *Veſicæ*, or *of the Bladder*, is the Cavity thereof, wherein the Urine is contained. In Men it is placed over the Rectum; and in Women over the Matrix. See BLADDER.

FUND *of the Gall Bladder*, the *Stomach*, &c. See GALL *Bladder*, STOMACH, &c.

FUNDUS *Plantæ*, is that Part of a Plant, where the Stalk juſt meets, and joins the Root.

FUNDUS *Cœli*, is the Point oppoſite to the Point of Culmination; or the Point of the Ecliptick, wherein it is interſected by the Meridian, beneath the Horizon.—

FUND, in Commerce, is uſed for the Capital, or Stock of a Merchant, Company, or Corporation; or the Sum of Money they put into Trade. See STOCK, CAPITAL, &c.

In this Senſe we ſay abſolutely, the *Funds*, the *Publick Funds*; meaning the Stock of the great Companies, or Corporations, as the *Bank*, *South Sea*, *Eaſt India*, &c. See BANK, COMPANY, &c.

FUNDAMENT, the *Anus*, or Aperture, thro' which a Man voids his Excrements. See ANUS.

FUNDAMENTAL, ſomething that ſerves as a Baſe, Reſt, Support, or Foundation for any thing. See FOUNDATION.

The Apoſtles Creed contains the *fundamental* Points of Religion. The *Salic* Law is the *fundamental* Law of the Polity of *France*.

FUNDAMENTAL, in Muſic, the principal Note of a Song, or Compoſition, to which all the reſt are in ſome meaſure adapted, and by which they are ſway'd; call'd alſo the *Key* of the Song. See KEY.

FUNERAL, the Ceremonies perform'd at an Interment; or the laſt Offices paid the Deceaſed. See OBSEQUIES.

The Word is form'd of the Latin *Funus*; and that of *Funalia*, by reaſon of the Torches (which were *Funes*, *cera circumdati*) us'd in the *Funerals* of the *Romans*. Tho' others derive *Funus* from the *Greek* φόνος, Death, or Slaughter.

The *Funeral Rites* among the antient *Romans* were very numerous.

The Deceas'd was kept ſeven Days; and every Day waſh'd with hot Water, and ſometimes anointed with Oil, that in caſe he were only in a Slumber, he might thus be waked; and every now and then his Friends meeting, made a horrible Outcry, or Shout, with the ſame View: Which laſt Action they call'd *Conclamatio*.

The third Conclamation was on the ſeventh Day; when, if no Signs of Life appear'd, the Defunct was dreſs'd and embalmed by the Pollinctores, plac'd in a Bed near the Door, with his Face and Heels outward, toward the Street; and the Outſide of the Gate, if the Deceas'd were of Condition, garniſh'd with Cypreſs Boughs.

In the courſe of theſe ſeven Days an Altar was rais'd near his Bed ſide, call'd *Acerra*; on which his Friends every day offer'd Incenſe; and the *Libitinarii* provided Things for the *Funeral*.

On the ſeventh Day a Crier was ſent about the City to invite the People to the Solemnization of the *Funeral* in theſe Words, *Exequias L. Tito L. Filio, quibus eſt commodum, ires. Jam tempus eſt. Ollus ex ædibus effertur.*

The People being aſſembled, the laſt Conclamation ended, and the Bed cover'd with Purple; a Trumpeter march'd forth, followed by old Women, call'd *Præficæ*, ſinging Songs in praiſe of the Deceas'd: And laſtly, the Bed followed, bore by the next Relations. And if the Perſon were of Quality and Office, the waxen Images of all his Predeceſſors were carried before him on Poles. See IMAGE.

The Bed was followed by his Children, Kindred, *&c. atrati*, or in Mourning: From which Act of following the Corps, theſe *Funeral* Rites were called *Exequiæ*.

The Body thus brought to the *Roſtra*, the next of Kin *laudabat Defunctum pro roſtris*, made a *Funeral* Oration in his Praiſe, and that of his Anceſtors.

This done, the Body was carried to the *Pyra*, or *funeral* Pile, and there burnt: His Friends firſt cutting off a Finger, to be buried with a ſecond Solemnity. See PYRA, and ROGUS.

The Body conſumed, the Aſhes were gather'd; and the Prieſt ſprinkling the Company thrice with clean Water, the eldeſt of the *Præficæ* crying aloud, *Ilicet*, diſmiſs'd the People, who took their leave of the Deceas'd in this Form, *Vale, Vale, Vale: Nos te ordine quo natura permiſerit, ſequemur.*

The Aſhes, inclos'd in an Urn, were laid in the Sepulcher, or Tomb. See URN, SEPULCHER, and TOMB.

The firſt *Romans* did not burn their Dead, but interr'd them, as we do. See BURNING.

Pliny, *lib.* 7. *c.* 54. aſſures us, that the Cuſtom of Burning was not introduced till after they had learnt, that their Enemies dug up, and expos'd the Bodies of their Soldiers buried in remote Countries. And yet *Plutarch*, in his Life of *Numa*, obſerves, that *Numa* was buried; as having expreſly forbid them by his Teſtament to burn him: Which ſhews that the *Romans* had practiced Burning before him.

This Cuſtom of burning the Dead, ſo religiouſly obſerv'd by the *Greeks* and *Romans*, was held in Abhorrence by ſeveral other Nations.

Herodotus relates, that the *Perſians* deteſted it; as holding Fire to be a God. The *Egyptians* declined to burn their Dead; as taking Fire for an inanimate Beaſt; and judging it Impiety to commit the Bodies of the Deceaſed to be devour'd by Beaſts. The Cuſtom of burning among the *Romans* ceas'd under the Empire of the *Anthonines*.

FUNERAL *Oration*, or *Sermon*, a Diſcourſe pronounced in praiſe of a Perſon deceaſed, at the Ceremony of his *Funeral*.

The Cuſtom of making *funeral* Orations is very antient. The *Romans* had it of a long ſtanding; and it was always one of the neareſt Relations that made it. *Auguſtus* did the Office to his Grandmother *Julia*, when only twelve Years of Age. *Suet. Aug. c.* 8. And we have divers parallel Inſtances.

The Cuſtom ſeems to have begun with the Republic; at leaſt, the firſt *funeral* Oration we read of, was that of *Brutus*, who expell'd the Kings, and was the firſt Conſul; who having been kill'd in a Battle againſt the *Hetrurians*, was *laudatus pro roſtris*, prais'd in the *Forum* by *Valerius Publicola* his Collegue.

Indeed, ſome Authors will have the Practice more antient. They maintain it to have been in uſe among the *Greeks*; and that *Solon*, who, according to *Aulus Gellius*, gave Laws to the *Athenians* in the Time when the elder *Tarquin* reign'd at *Rome*, was the firſt Author thereof: Something like which, it ſeems, the Orator *Anaximenes* has left in Writing. See *Polydore Virgil de Invent. Rer. L. III. c.* 10.

FUNERAL *Games*, or *Ludi Funebres*, were a Part of the Ceremony of the antient *Funerals*. See GAMES.

They conſiſted in mortal Combats of Gladiators around the *funeral* Pile. See GLADIATOR.

The Cuſtom was very antient; tho' it had not always been the ſame. At firſt, they cut the Throats of a Number of Captives before the *Pyra*, as Victims to appeaſe the *Manes* of the Deceas'd. This *Achilles* does in *Homer*, *Iliad*, φ, at the *Funeral* of *Patroclus*: And *Æneas*, in *Virgil*, *L. XI.* at that of *Pallas*, Son of *Evander*. *Cæſar*, in his Commentaries *L. VII.* relates, that the *Gauls* did the ſame.

But at length it appear'd barbarous, thus to butcher Men; and therefore to ſave the Horror of the Spectacle, yet without the Dead's loſing any thing thereby; they made the poor Captives fight and kill one another, only ſaving ſome few of ſuch as came off Victors.

This Cuſtom was borrowed of the *Greeks* by the *Romans*; among whom the cruel Diverſion was call'd *Munus*.

The firſt who introduc'd it at *Rome*, was *Junius Brutus*, at the Obſequies of his Father; or, according to others, *Ap. Claudius*, and *M. Fulvius*, during their Conſulate.

The like horrible Combats were alſo occaſionally exhibited by the Magiſtrates; and ſometimes added to the Theatrical Pieces.

The Emperor *Claudius* decreed, that whereas theſe accurſed Games were till then arbitrary; it ſhould be the Practice for the future, to perform them regularly every Year, at the Expences of the State; and that the Ædiles ſhould have the Care and Direction thereof. But he conceiv'd a Horror for them himſelf; and ſoon after aboliſh'd them: Tho' it was ſtill allow'd particular Perſons to have them, provided they were worth forty thouſand Seſterces *per Annum*.

They were not finally aboliſh'd before *Theodoric* King of the *Goths*, at the End of the fifth Century.

FUNERAL *Column*, a Column crown'd with an Urn, wherein the Aſhes of ſome deceas'd Perſon are ſuppos'd to be inclos'd; the Fuſt, or Shaft being ſet with Tears, or Flames; the Symbols of Grief, and Immortality. See COLUMN.

FUNGUS, in Natural Hiſtory; ſee MUSHROOM.

FUNGUS, in Medicine, a fleſhy Tumor, or Excreſcence, very ſpongeous, ſoft, and pale; ariſing on the Membranes, Tendons, and other nervous Parts, in conſequence of Ulcers, Wounds, Contuſions, and Strains.

Fungus's are frequently form'd on the Meninges, or Membranes of the Brain, in Wounds of the Head when not well cover'd, or defended from the external Air: They are alſo frequent about the Joints; which laſt grow very inſenſibly. But where the Skin is open, finding more room, they grow to a prodigious degree in a very little time, aſſuming the Form of a Muſhroom or *Fungus*.

There are alſo *Fungus's* of the *Anus*, and *Uterus*. They are all ſuppos'd to proceed from a Retention and Depravation of the nutritious Juice.

The *Fungus* is a general kind of Excreſcence, whereof there are divers particular Species; as the *Ficus*, *Sarcoma*, *Condyloma*, &c. See FICUS, &c.

FUNGOUS *Fleſh*, is a ſpongeous, excreſcent, or (as we popularly call it) *proud* Fleſh, frequently growing on the Lips of Wounds, Ulcers, *&c.* See FUNGUS.

The *Sarcocele* is ſometimes the Reſult of a *fungous* Fleſh. See SARCOCELE.

In Ulcers, *Wiſeman* obſerves, there frequently ariſes a ſpongious, or *fungous* Fleſh, either from the too great Afflux of Humors; or thro' the Surgeon's Unskilfulneſs.

It muſt be ſuppreſs'd, or taken off by drying Medicines, or even Cauſticks: As *Lapis Tutiæ*, burnt Alum, Precipitate of Mercury, *Roman* Vitriol, &c. See ULCER.

There is alſo a malignant kind of *Fungus* rooted in the *Rectum*. See RECTUM.

FUNNEL *of a Chimney*, the Shaft, or ſmalleſt Part of the Chimney, from the Waſt upwards. See CHIMNEY.

Palladio orders, that the *Funnel* be carried three, four, or five Foot at leaſt above the Roof, that it may carry the Smoak clear from the Houſe into the Air.

Care too is to be taken, as to the Width; for that if they be too wide, the Wind will drive back the Smoak into the Room; and if too narrow, the Smoak will not be able to make its way.

Chamber Chimneys therefore are not to be made narrower than ten or eleven Inches; nor broader than fifteen.

FURBISHER, a Perſon who *furbiſhes* or poliſhes Arms, and gives them a Brightneſs and Luſtre. See FURBISHING.

In the general Senſe of the Word, it includes what we now call Armorers and Sword Cutlers: In a more reſtrain'd Senſe, it is appropriated to thoſe who clean, and ſcour up old Swords, Guns, Halberds, and put them in order.

Among the Officers of the Tower is a *Furbiſher of ſmall Arms*, and another *of Swords*. And the like is at moſt of the Palaces and Armories of *England*; as St. *Jame*'s, *Windſor*, *Cheſter*, *Plymouth*, *Hull*, and *Berwick*.

FURBISHING, the Act of cleaning, ſcouring, and poliſhing Arms; as Guns, Piſtols, Swords, &c. See FURBISHER; ſee alſo SWORD, GUN, &c.

Furbiſhing is principally perform'd with Emery. See EMERY.

The Word is form'd of the French *Fourbiſſure*, which *Hicks* derives from *Furben*; which in the Language of the antient *Franks* ſignify'd to clean and poliſh.

M. *Huet* chuſes rather to derive the French *Fourbir* and *Fourbeſſure*, from the Engliſh *Furbiſh*, and *Furbiſhing*.

Skinner obſerves, that ſome Authors derive the Engliſh *Furbiſh* from the Latin *furvus*, and *fervor*; but for his part he rather derives it from the German *Farb*, Colour, and *farben*, to give a colour.

FURCA, FORK, in Antiquity, a kind of Puniſhment, or rather Inſtrument of Puniſhment, among the *Romans*.

The Form of the *Roman Furca* is very obſcurely deſcribed by the Antients, and much controverted by the Moderns.

All we know for certain, is that it was of Wood, and reſembled a Fork; whence it is called in Writers ξύλον δικελὲν, δικρὲν, δίδυμον, that is, *lignum duplex*, *bicornutum*, *geminum*, a double fork'd or horned Timber.

Plutarch, treating of the *Furca*, ſays, it is originally a piece of Timber, wherewith the Beam of the Waggon was upheld: He adds, that it is the ſame with what the *Greeks* call *Hypoſtate* and *Sterigma*: And the Sterigma is deſcribed by *Heſychius* as the forked Piece of Timber put under the Yoke of the Waggon.

From the two, *Goodwin* takes the *Furca* to have been the Beam of a Waggon, to which the Yokes were faſten'd.

The Puniſhment of the *Furca* was of three kinds: The firſt, only *Ignominious*, was when a Maſter forc'd his Servant for ſmall Offences to carry a *Furca*, or Fork on his Shoulders, about the City; confeſſing his Fault, and warning others to beware of the like; whence ſuch Servant came to be denominated *Furcifer*.

The ſecond kind was *Penal*; when the Party having the *Furca* on his Neck, was lead about the Circus, or other Place, and whip'd all the way.

The third was *Capital*; the Malefactor having his Head faſten'd to the *Furca*, and ſo whip'd to death.

In After-times of the Empire, when Crucifying became interdicted, the Form of the *Furca* was changed, and made like our Gibets or Gallows. See CROSS, CRUCIFYING, GIBET, &c.

FURCA, in our antient Cuſtoms, was the ſame with *Catifurcia*, or *Foſſa*, *i. e.* Gallows, and Pit; *viz.* a Right or Juriſdiction of puniſhing Felons; that is, Men with hanging; Women with drowning. See GALLOWS.

FURCHE, in Heraldry, a Croſs in the Form here repreſented. See CROSS.

FURCULA, in Anatomy; ſee JUGULUM.

FURFUR, literally ſignifies Huſk, or Chaff; and therefore is uſed for the Scales, Scurf, or Dandriff, which grows upon the Skin with ſome Likeneſs thereto. See CUTICLE. Hence

FURFURATION, the falling off of Furfures in Combing, &c.

FURIES, EUMENIDES, DIRÆ, in the Heathen Theology, and Poetry, were infernal Deities, ſuppoſed to enter, and poſſeſs Men; to torment, and puniſh them. See GOD.

The *Furies* were reputed the Miniſters of *Pluto*; and the Avengers of Crimes. *Strabo* paints them cloathed in long Robes falling to their Heels, but girt about the Breaſt. They were three in Number: *Tyſiphone*, *Megæra*, and *Alecto*.

Patin, *Spanheim*, &c. will have it to be them, which we ſee on a Medal of the Emperor *Philip*, ſtruck at *Antioch*, on whoſe Reverſe are repreſented three Women dreſs'd as above-mentioned, and arm'd with a Key, burning Torches, Poniards, and Serpents.

Struvius, *Antiq. Rom. Synt. C. I. p.* 182. adds, that the three *Furies* may probably be no other than the triple *Hecate*, whom the Antients believ'd to purſue and torment the Wicked in Hell, on Earth, and in Heaven.

Some of the Poets add a fourth *Fury*, call'd *Lyſſa*; a *Greek* Word, ſignifying Madneſs, Rage. They repreſent them with Eyes inflam'd; their Heads twiſted round with Snakes, with Whips and burning Torches in their Hands to puniſh the Guilty.

The Daffodil was ſacred to the *Furies*; and ſuch as offer'd Sacrifices to them, were crown'd therewith. This we learn from *Euſtathius*, on the firſt Book of the Iliad, *p.* 87.

Theſe *Furies* were alſo call'd *Pœnæ*, Ποιναὶ, by reaſon of the Puniſhments they inflicted on Criminals: As their Denomination *Furies* aroſe from the Rage and Madneſs, which they threw into the Conſcience. *Voſſ. de Idolol. L. VIII. c.* 18.

The *Grecks* call'd them *Eumenides*; the Origin of which Name is much controverted among the Learned: The Etymology that ſeems beſt authorized, derives it from Εὐμενὴς, gentle, mild; which was applied to them on occaſion of *Oreſtes*'s being abſolv'd of the Murther committed by him on the Perſon of his Mother. *Minerva*, it ſeems, appeas'd and pacified the *Furies*; ſo that they ceas'd to purſue him: Upon which the *Athenians* ever after denominated them *Eumenides*.

But it muſt be added, that the *Athenians* called them by the ſame Name, long before *Oreſtes*'s time; as appears from the *Oedipus* of *Sophocles*. There was a Temple in *Athens*, near the *Areopagus*, conſecrated to the *Eumenides*, whom the *Athenians* call'd *Venerable Goddeſſes*. *Ariſtides* and the Scholiaſt of *Thucydides* ſpeak of this Temple as erected in Memory of the Judgment of *Oreſtes*. See EUMENIDES.

FURLING *Lines*, are ſmall Lines made faſt to the Top-ſails, Top-gallant Sails, and to the Miſen-yard Arms, ſerving to *furle* up thoſe Sails.

The Miſen hath but one *Furling Line*, but all the reſt have two, one at each End.

FURLONG, an *Engliſh* long Meaſure, containing the eighth Part of a Mile. See MILE, and MEASURE.

The *Engliſh Furlong* is equal to forty Poles, or Perches; and the Perch to 16½ Feet. See PERCH, FOOT, &c.

Hercules is ſaid to have run a Stadium or *Furlong* at one breath. See STADIUM.

FURLONG is alſo us'd for the eighth Part of an Acre, now called a Rood. See ROOD.

Tho', in an old Law Book, printed in *Henry* the VIII's time, we read, that ſix hundred Foot, of five Score to the Hundred, make a *Furlong*. See ACRE.

In the former Signification the *Romans* call it *Stadium*; in the latter, *Jugerum*.

FURLONG is alſo us'd for a piece of Land, of more, or leſs Acres.

Omnibus Chriſti Fidel. Johannes Blunt de Eyc, Arm. —Dedit Thomæ Croft & Franciſco Lovel, Arm. unum Furlongum *terræ arabilis continen. per æſtimationem quatuor Acras*, &c. *Dat.* 20 *Jan.* 3 *Eliz.*

FURLOUGH, a Licence granted by an Officer to a Soldier, to be abſent for a while.

FURNACE, an Utenſil, or Veſſel, proper to contain Fire; or to raiſe and maintain a vehement Fire in; whether of Coal, or Wood. See FIRE.

There are divers kinds of *Furnaces*, of various Forms, and for various Uſes.

The Domeſtick *Furnace*, us'd in making Confections, &c. is uſually of Iron, or Earth.

Thoſe us'd by the Goldſmiths, Refiners, &c. are much larger, and of a different Structure.

Thoſe wherein Lime, Bricks, &c. are burnt, are called *Kilns*. See LIME, BRICK, &c.

FURNACE is particularly us'd for a kind of Oven, wherein the Ores of Metals, after beating, waſhing, &c. are melted down, by a huge Coal or Wood Fire. See FUSION.

The Structure and Application of theſe *Furnaces* is ſomewhat different in the different Metals. See GOLD, SILVER, COPPER, TIN, &c.

FURNACE is more ſtrictly applied to thoſe us'd in the melting of Iron; which Authors frequently confound with Iron *Forges*; tho' there is a conſiderable Difference between them.

The *Furnace* is a Brick Structure, much in the Shape of an Egg ſet an end, wherein the Iron Ore, after it has been burnt in a Kiln, is put, intermix'd with Cinders and Charcoal; and the whole melted, till it trickle down into a Receiver underneath; where, the Scum and Droſs being taken away, the Metal is thrown into Furrows made in a Bed of Sand, and thus caſt into Sows or Pigs of Iron. See IRON-*work*.

The *Forge* is a Place, where the Pigs are heated and fuſed a ſecond, and even third time, to prepare and fit them further for uſe. See FORGE.

Glaſs-houſe FURNACE, is the Place wherein the Materials of Glaſs are fuſed, and vitrified. See GLASS.

There are three kinds of *Furnaces* us'd in the Glaſs-works.

The firſt called the *Calcar*, ſerves to prepare or calcine the *Frit* in. It is made in faſhion of an Oven, ten Foot long, ſeven broad, and two deep. The Fuel, which is Sea Coal, is put in a Trench, on one Side of the *Furnace*; and the Flame reverberates from the Roof back upon the Frit. The Coals burn in an iron Grate, and the Aſhes fall hence into a Hole underneath. See FRIT.

The ſecond, is the *Working Furnace*, ſerving to melt the Metal in, or make the Glaſs. Its Figure is round, three Yards in Diameter, and two high, being arch'd over. Round the Inſide are eight, or more Pots plac'd, and piling Pots on theſe. The Number of Pots is always double that of the *Boccas* or Mouths, or that of the Workmen; that each may have one Pot refined, to work out of; and another for Metal, to refine in, while he works out the former.

The *Furnace* has two Partitions; the lower, ſeperating the Pots from the Fire Place, has a circular Hole in the Centre, cover'd with a Grate, through which the Flame paſſes from the Fire Place into the *Furnace*; from the arched Sides and Roof whereof it is reverberated into the Melting-pots.

The ſecond Partition divides this from the *Leer*, or *Annealing Furnace*. Thro' the Boccas, or Working-holes the Metal is taken out of the Pots, and the Pots put in the *Furnace*. Theſe Boccas are ſtop'd with moveable Covers, made of Lute and Brick, to ſcreen the Workmens Eyes from the Fire. On each Side the Bocca is a Boccarella, out of which, colour'd Glaſs, or the finer Metal is taken from the Piling-pot. To the *Furnace* likewiſe belong Ovens or Holes near the Leer, for the calcining of Tartar, Iron, &c.

The *Leer*, which ſerves to anneal and cool the Veſſels; and which *Agricola* makes a particular *Furnace*, conſiſts of a *Tower*, and the Leer. The Tower lyes directly over the Melting *Furnace*, with a Partition betwixt the Aperture; having an Aperture, call'd *Occhio*, or *Lumella*, thro' which the Flame or Heat aſcends out of the *Furnace* into the Tower: On the Floor or Bottom of this Tower, the Veſſels faſhion'd by the Maſters, are ſet to anneal. It has alſo two *Boccas* or Mouths, by which the Glaſſes are put in with a Fork, and ſet on the Floor.

The *Leer* is an Avenue, five or ſix Yards long, continued to the Tower: Thro' this the Glaſſes, when anneal'd, are drawn in iron Pans, called *Fraches*; by which they come to cool by degrees; being quite cold, by that time they reach the Mouth of the Leer, which enters the *Saroſel*, or Room where the Glaſſes are to be ſet.

The third, is the *Green Glaſs Furnace*, which is a kind of Compound of all the former. It is made ſquare (the two former being circular) having an Arch, at each Angle thereof, for annealing and cooling the Glaſſes. The Metal is wrought on two oppoſite Sides; and on the other two, they have their Calcars, into which are made *Linnet Holes* for the Fire to come from the *Furnace* to bake the Frit; as alſo to diſcharge the Smoak. Fires are made in the Arches to anneal the Veſſels; ſo that the whole Proceſs is done in one *Furnace*.——

The Stones wherewith the Inſides of theſe *Furnaces* are built, are not Brick (which would ſoon melt down into Glaſs, as alſo all the ſofter Stones); but hard, and ſandy, by *Imperat.* call'd *Pyrachmia*.——

Founders FURNACE, is of divers kinds, according to the different kinds of Work to be caſt.

That us'd by the Founders of Small Work, is much like the Smiths Forge, with this only Difference, that the Fire is made on the Maſſive, built in a Cavity in the Middle of the *Furnace*, to which the Pipe of the Bellows reaches.

This Cavity goes to the Bottom of the Maſſive: A-croſs the Middle of it is plac'd a Grate, which holds the Fire and the Crucible: And below is the Place for the Aſhes, &c. See FOUNDRY.

The Statuaries, or Figure-makers, uſe two kinds of *Furnaces*; which ſee deſcrib'd under the Article FOUNDRY *of Statues*.

Glaſs-Painters FURNACE, is made of Brick, nearly ſquare, and about two Foot and a half each way.

It is cut horizontally in the Middle by a Grate, which ſuſtains the Pan or Shovel the Glaſs is baked in. This *Furnace* has two Apertures; one below the Grate, to put the Fuel in at; the other above it, thro' which the Workman ſpies how the Coction of the Colours goes on. See *Painting on* GLASS.

Letter Founders FURNACE, is very ſmall, not exceeding a Foot and half in Height, and one in Diameter; being plac'd on a wooden Stand, or Bench, to raiſe it to a proper Height for the Artiſt, who works ſtanding. It is made of the ſame Earth with Crucibles. See *Letter* FOUNDRY.

Plumbers FURNACE is of three Kinds: In the firſt, they melt the Lead, whereof Sheets are to be caſt.

This is only a ſort of large Copper, or Receptacle like a Copper, made of Free-ſtone and Potters Earth, well plaiſter'd round with a little iron Pan at bottom.

In the ſecond, they melt the Lead to be caſt in Moulds, for Pipes, &c. which are not to be ſolder'd.

The third, is the Tinning *Furnace*, which is a ſquare Frame of Wood, or ſometimes a Maſſive of Stone-work, with a Brick Hearth, whereon is made a Charcoal Fire, which ſerves them for the applying of thin Tin Leaves on their Works. See PLUMBERY.

Hatters FURNACES are of three Kinds: A little one under the Mould, whereon they form their Hats: A larger, in the Fullery under a little Copper full of Water and Lees: And a very large one under the great Copper they dye their Hats in. See HAT.

Bellows-FURNACE, is one of the two kinds of *Furnaces* us'd in the Mintage, for the fuſing of Metals.

It conſiſts of a flat Hearth at Bottom, into which the Air may be admitted by a Hole contriv'd therein.

On a Level with the Hearth is a ſecond Aperture, which gives Paſſage to the Pipe of the *Bellows*, from which the *Furnace* is denominated. About a Foot over this is a moveable Grate, which may be taken off and put on at pleaſure. Laſtly, over this is the Place where the Crucible is ſet; which is ſquare, and made of the ſame Earth with the Crucible; of Breadth ſufficient to bear a Range of Coals around the Crucible.

To melt a Metal in this *Furnace*, they lay a little Plate of forged Iron over the Grate; and on this they ſet the Crucible, which is likewiſe cover'd with an iron, or earthen Lid. Then they fill the *Furnace* with Charcoal; and when it is well lighted, and the Crucible ſufficiently hot, they ſtop the Vent-hole. Laſtly, throwing on freſh Coals, they ſtop the *Furnace* with an iron Lid: Thus, continuing to work the Bellows, and ſupply freſh Fuel, till the Metal be in Fuſion. See COINING.

Wind-FURNACE is the ſecond *Furnace* us'd in the Fuſion of Metals for Coinage. At Bottom it has a Hearth made hollow, in manner of a Coupel, with a Vent-hole in the Fore-part thereof. Over the Vent-hole, is a Grate ſeal'd in the Maſſive of the *Furnace*. Over the Grate is the Place for the Crucible, which is uſually of forged Iron.

The Fire being lighted, the Crucible is ſet in, with a Cover over it; and a Capital or Cover of Earth or Iron laid likewiſe over the *Furnace*. A-top of this Capital is a Hole five or ſix Inches in Diameter.

It is called *Wind Furnace*, by reaſon the Air entring thro' the Vent-hole at bottom, which is always open, ſerves the ſame purpoſe as the Bellows in other *Furnaces*,

Gold is uſually melted in the *Bellows Furnace*, as requiring an intenſer Heat before it fuſes. See GOLD.

Silver, and Copper, are commonly melted by the *Wind-Furnace*. See COINAGE.

FURNACE, in Chemiſtry, is an earthen Veſſel, wherein the Fire neceſſary for the ſeveral Operations, is contain'd, determined, and directed. See FIRE.

The *Furnace* conſiſts of ſeveral Parts; as, a Place for the Veſſel, or Body to be wrought on; a *Focus* or Hearth fot the Aſhes; a *Chimney*; a *Grate*; a *Door*; a *Dome*, and a *Fan*; or elſe *Regiſters*, whereby to let in Air, to increaſe, or abate the Fire.

The Perfection of a *Furnace* conſiſts in its maintaining a conſtant equable Fire; and this eaſily temper'd; and at an eaſy Expence.

To have the *Expence* eaſy, the whole Action of the Fire or Fuel muſt be employ'd on the Subject or Matter of the Operation.

It muſt be *equable*, ſince different Degrees of Fire have different Effects; ſo that if any given Degree would anſwer any given Intention; an Alteration of that Degree will prevent the Intention from taking place. And on theſe Circumſtances does all the Variety of *Furnaces* depend.

Furnaces are either fix'd and immoveable, call'd *Athanors*; or portable, call'd *Catholic*, or Univerſal, being proper for all Operations, where the Body to be operated on is not too large.

The firſt Species of Athanor, or fix'd *Furnace* is fitted to give a Heat equal to that of a healthy Man.

The ſecond is the *Furnace* of the *Balneum Mariæ*, fit for the Deſtillation of the more ſubtile Spirits. See BALNEUM *Mariæ*.

The third is the *Digeſting Furnace*. See DIGESTING.

The fourth, the Anema, or *Wind Furnace*, call'd alſo Melting *Furnace*, and Metallic *Furnace*; us'd in the Fuſion of Metals, Minerals and Vitrifications.

It is call'd *Wind Furnace*, by reaſon the Air drives forcibly in at the ſame, to blow up the Coals: Its Form is much like that of the Reverberatory *Furnace*, only leſs.

For the Reverberatory Furnace, *ſee* REVERBERATORY.

FURNACE *of a Mine*, in the Art of War; ſee CHAMBER and MINE.

FURNITURE, in Dialling, certain additional Points and Lines, drawn on a Dial, by way of Ornament. See DIAL.

Such are the Signs of the Zodiac, Length of Days, Parallels of Declination, Azimuths, Meridians of the principal Cities, *Babylonick* and *Italian* Hours, Points of the Compaſs, *&c.* See DIALLING.

For drawing *Furniture* on Dials, the *Analemma*, or Trigon of Signs is an Inſtrument of principal Uſe. See ANALEMMA.

FUROR *Uterinus*, a Species of Madneſs, peculiar to Women, exciting them to a vehement Deſire of Venery, and rendering them inſatiate therewith. See UTERINE *Fury*.

It is owing, according to *Sennertus*, to a too great Abundance of Semen, and a præternatural Heat and Pungency thereof.

FURR, the Skin of divers kinds of Wild Beaſts, dreſs'd with the Hair on; to be us'd as a Lining, or Doubling of Garments, Robes, *&c.* either for Warmth, Ornament, or Diſtinction of Rank and Dignity.

The Robes of Kings, Dukes and Peers are lined with divers kinds of *Furrs*, and particularly Ermine, to render them more magnificent. See ERMINE, &c.

The ſame may be obſerv'd of ſeveral chief Magiſtrates, Judges, and Doctors of different Faculties in the Univerſities.

The Kinds of *Furrs*, or the Skins chiefly dreſs'd in Alum, and with the Hair on, are thoſe of the *Ermine*, *Sable*, *Squirrel*, *Cony*, *Caſtor*, *Otter*, *Dog*, *Fox*, *Wolf*, *Tiger*, *Bear*, &c. See SKIN.

The Word is form'd of the French *Fourrure*, a Lining; which *Du Conge* derives from *Furrura*,, us'd, in the barbarous *Latin*, for the ſame thing. We alſo meet with *Forratura*, *foderata*, *fodratum*, and *fodratura*, in the ſame ſenſe.

FURR, in Heraldry, a Repreſentation of the Skins of certain wild Beaſts, ſeen, both in the Doublings of the Mantles of Coat Armour, and in the Armour it ſelf.

The Heralds uſe two Metals, five Colours, and two *Furrs*, or hairy Skins, *Ermin* and *Vaire*.

The Origin of theſe *Furrs*, *Mackenzy* aſcribes to the Shield's being antiently cover'd with Skins; which Skins or Coverings were afterwards repreſented in the Shields: A more probable Derivation, in our Opinion, than to ſay they were plac'd on Shields, becauſe they had been wore in Mantles and Garments.

Furrs either conſiſt of one Colour, which is *white*; or more than one; and theſe either two, or more than two.

Furrs of two Colours are either *Ermine*, being white with black Spots; *Ermines*, black with white Spots; *Erminois*, whoſe Ground is yellow; or *Pean*, which is black, pouder'd with yellow. See ERMINE, PEAN, *&c.*

Furrs of more than two Colours are *Vair*. See VAIR, and VAIRY.

FURRIER, a Perſon who trades, or works in *Furrs*, or lines Robes, *&c.* therewith. See FURR.

FURRING, in Architecture, the making good the Rafters Feet in the Cornice. See RAFTER.

Thus, when Rafters are cut with a Knee, theſe *Furrings* are Pieces which go ſtrait along with the Rafter, from the Top of the Knee, to the Cornice.

Alſo, when Rafters are rotten, or ſunk hollow in the Middle, there are Pieces cut thickeſt in the Middle, and tapering towards each End, which are nailed upon them to make them ſtrait. Such Pieces are called *Furrs*; and the Putting them on, *Furring the Rafters*.

FUSAROLE, in Architecture, a Moulding, or Ornament, placed immediately under the Echinus, in the *Doric*, *Ionic*, and Compoſite Capitals

The *Fuſarole* is a round Member, carved, in manner of a Collar or Chaplet, with oval Beads. The *Fuſarole* ſhould always anſwer exactly under the Eye of the Volute in the *Ionic* Capital.

The *Italians* call it *Fuſciolo*; and the *French*, from whom we borrow it, *Fuſarole*.

FUSEE, or FUSY, in Watch-work, is that conical Part, drawn by the Spring, and about which the Chain, or String is wrapp'd. See WATCH.

The Spring of a Watch is the firſt Mover. It is roll'd up in a Cylindrical Box, againſt which it acts, and which it turns round in unbending itſelf. The String, or little Chain, which at one End is wound about the *Fuſee*, and at the other faſten'd to the Spring-box, diſengages itſelf from the *Fuſee*, in proportion as the Box is turn'd. And hence the Motion of all the other Parts of the Spring Watch. See SPRING.

Now the Effort, or Action of the Spring is continually diminiſhing from firſt to laſt; and of conſequence, unleſs that Inequality was rectify'd, it would draw the String with more Force, and wind a greater Quantity of it upon the Box at one time than another; ſo that the Movement would never keep equal time.

To correct this Irregularity of the Spring; nothing could be more happily contriv'd than to have the Spring applied to the Arms of Levers, which are continually longer as the Force of the Spring is weaker. This foreign Aſſiſtance, always increaſing as 'tis moſt needed, maintains the Action, and Effect of the Spring in an Equality.

'Tis for this reaſon, that the *Fuſy* is made of a conical Figure. Its Axis, which is immoveable, is the Series of the Centres of all the unequal Circumferences, which compoſe the Surface of the *Fuſy*. According as the Part of a String which is untwiſting, is applied to a larger Circumference, it is at a greater Diſtance from the fix'd Point in the Axis, correſponding thereto; and of conſequence the Power which draws by this String, *viz.* the Spring, acts with the more Advantage. The Spring begins to draw by the Top of the Cone; the moſt diſadvantageous Part, by reaſon its own Force is then the greateſt. See LEVER.

If the Action of the Spring diminiſh'd equally, as the Parallel Baſes of a Triangle do; the Cone, which is generated of a Triangle, would be the preciſe Figure required for the *Fuſee*. But 'tis certain the weakening of the Spring is not in that Proportion; and of conſequence the *Fuſy* ſhould not be conical.

In effect, Experience ſhews, that it ſhould not be ſtrictly ſo; but that it be a little hollow toward the Middle, *i. e.* the Arm of the Lever muſt be there a little ſhorten'd; by reaſon the Action of the Spring is not ſufficiently diminiſh'd of it ſelf.——

'Tis a Matter of Inquiry among Geometricians what the preciſe Figure of the *Fuſy* ſhould be; that is, what the Curve is, by whoſe Revolution round its Axis, the Solid, whoſe Figure the *Fuſy* is to have, ſhall be produced.

M. *Varignon* has determ'd this Curve. The Axis of the *Fuſee* is alſo the Axis of the Curve, which is convex on the Side toward the Axis, and of conſequence concave all the way on the other, or outer ſide; and the Ordinates are the different Diſtances wherein the String is to be with regard to all the ſucceſſive fix'd Points of the Axis.

The Force of the Spring multiplied by the Arm of the Lever it is applied to, each Moment, being always to make an equal Product; it follows that when the Solid of the Curve ſhall be form'd, an Ordinate multiplied by the Surface of the Solid comprized between that Ordinate, and the greateſt of all the Ordinates, *viz.* that of the Baſe, will always yield a Product equal to that of any other Ordinates multiplied in the ſame manner. For the Ordinates are only Arms of the Lever; and the Parts of the Surface comprehended between them and the Baſe are equal to the Lengths of the String, which cover them; *i. e.* to the correſpondent Forces of the Spring: Which is what conſtitutes the Equation, and the Eſſence of the Curve.

FUSEE, FUSIL, or FUSE, in War, an Appendage of a Bomb, or Granado-Shell, by which the Powder or Compoſition in the Shell is ſet on Fire, to do the deſign'd Execution. See BOMB, and GRANADO.

The *Fuſee* is a wooden Pipe or Tap, fill'd with Wild-fire, or the like Compoſition; and is deſign'd to burn ſo long, and no longer, as is the time of the Motion of the Bomb from the Mouth of the Mortar, to the Place, where it is to fall; which Time is about 27 Seconds: So that the *Fuſe* muſt be contriv'd, either from the Nature of the Compoſition or the Length of the Pipe which contains it, to burn juſt that time.——

The uſual Compoſition of *Fuſees* is two Ounces of Nitre, to one of Sulphur, and three of Gunpowder Duſt.

The Word is *French*, and literally denotes a *Spindle*.

FUSIBILITY, that Quality in Metals, and Minerals, which diſpoſes them for Fuſion. See FUSION.

Gold is more *fuſible* than Iron, or Copper; but leſs ſo than Silver, Tin, and Lead. See GOLD, SILVER, &c.

Borax is frequently mix'd with Metals, to render them more *fuſible*. See BORAX.

FUSIL, in Heraldry, by the *French* called *Fuſee*, *q. d.* Spindle, is a bearing of a Rhomboidal Figure, more ſlender than the *Lozenge*; its upper and lower Angles being more acute than the two collateral or middle ones: as repreſented in the adjoining Figure.

FUSILIERS, in an Army, are the ſame with Muſqueteers; and are called ſo from the Word Fuſil, a *Fire-arm*, or Muſquet. See MUSQUET.

FUSILLY, or Fusilée, is when a Field or Ordinary is entirely cover'd over, or divided into *Fusils*.—

FUSION, the Solution, or melting of Metals, Minerals, &c. by means of Fire: Or, the Act of changing them from their ſolid State to a Fluor. See Solution, and Dissolution.

To give the Ore its metallic Form, they *fuſe* it: When it is in *Fuſion*, the metalline Subſtance, being the heavieſt, ſinks to the Bottom of the Furnace; the other terreſtrial Matters riſing in Form of Scoria to the Surface. See Metal.

'Tis commonly imagin'd, that the *Fuſion* and metalline Form of *Minerals* is wholly the Effect of Fire; and we have Theories of Fuſibility built on this Principle: But 'tis a miſtaken one. Fire, no doubt, is the principal Agent: But Fire alone is not ſufficient.

A Mineral, or piece of Metal not purify'd, being put alone in a Crucible, melts with a world of Difficulty, and never becomes a perfect Metal: Copper Ore, for inſtance, being thus applied, its impure Part forms a Scoria, and vitrifies; the metalline Part reſiding at Bottom, under the Appearance of a black Regulus.

To promote the *Fuſion* and Separation, they mix Coals, or Stones, or Cinders, or old Scoria along with the Ore; the inflammable Principle in which, by help of the Fire, fuſes them perfectly, ſets the heterogeneous Part at liberty, and attaches it to the Top.

The general reaſon of *Fuſion* is pretty eaſily aſſign'd. The Firmneſs, or Solidity of the Body ariſes from the Force wherewith its Particles cohere. See Firmness. And the Coheſion in all Bodies is as the Quantity of Contact in the component Particles. See Cohesion.

Now, the Corpuſcles of Fire entering with Rapidity into the Pores of the Metal agitates, and by degrees, looſens, divides, and diminiſhes their Contact, till at length there is not enough to hinder their rolling over each other; and giving way upon the leaſt Impulſe. See Fluidity.

The Dilatation obſervable in all *Fuſions*, is a Proof that their Particles are ſeparated and ſet at a diſtance from each other, and conſequently their Contacts and Coheſions diminiſh'd.

In effect, Rarefaction and Dilatation is the neceſſary Conſequence of Fire and Heat. See Fire, Dilatation, Rarefaction.

From the Difference of Coheſion proceeds that Variety we obſerve in the *Fuſion* of Bodies: for ſuch as have leaſt Contact of Parts, ſooneſt give way to the Fire; and ſome will melt away by the Warmth of a Vapour only, when others, which have a ſtronger Contact, are not to be ſeparated, but with Difficulty. Upon this account, Vegetables very eaſily diſunite; Minerals ſlower, and Metals ſloweſt of all: And of the laſt, thoſe wherein the Contact of Parts is leaſt, as in Lead and Tin, moſt readily melt; but thoſe which are more compact as Gold, and Silver, are not to be managed, but by a violent Heat.

If now the Force of Coheſion were proportional to the Quantity of Matter, or to the Weight of Bodies, we might from Staticks account for all the Variety that occurs in *Fuſion*; for by knowing the ſpecifick Gravity of a Body, we ſhould then know, what Force is required to melt it: But becauſe the ſame Quantity of Matter may be ſo variouſly diſpoſed, that in one Body there ſhall be a much greater Contact, than in another, tho' the Gravity be equal, or even leſs at the ſame time; therefore the Force of Coheſion cannot be eſtimated by Gravity: For Lead, tho' more ponderous than all other Metals, except Gold; yet in the Fire is more eaſily melted, than any other: So that it neceſſarily follows, that in this Metal there muſt be a leſs Coheſion, or Contact of Parts, how much ſoever it may exceed others in the Quantity of its Matter. See Lead.

Bodies after *Fuſion* return again into a ſolid Maſs, upon removing them from the Fire; becauſe their Particles hereupon approach nearer to one another by their attractive Force, and are ſo compelled to unite.

Such as conſiſt of homogeneous and unalterable Parts, as Wax, Gums, and the purer Metals, recover their antient Form: For when the ſame Texture of Parts remains in the whole Body, it muſt of courſe reaſſume the ſame Appearance, when the ſeparating Power ceaſeth to act; but other Bodies, whoſe Parts, with reſpect to Denſity and Surface, are extremely different from one another, while ſome are carried off by the Force of Heat, and others are changed as to Figure and Poſition, muſt be forced to appear in another Form: For they cannot recover their original Phaſes, unleſs every Particle could reinſtate it ſelf in that very Situation it had before, which may be hindered infinite ways; as may be experienced eaſily in heterogeneous Bodies.

The Difference, therefore, obſerv'd even in homogeneous Bodies after Liquefaction, is no ways to be accounted for but from the changeableneſs of Surface in its Parts: For thoſe Bodies whoſe Parts conſtantly retain the ſame Surfaces, never loſe their Form; but others, by having the Surfaces of their Parts altered, have a different Texture, and put on another Appearance.

FUST, in Architecture, the *Shaft* of a Column; or that Part comprehended between the Baſe, and the Capital; called alſo the *Naked*. See Shaft.

The *Fuſt* is that cylindrical Part, which makes, as it were, the Body, or Trunk of the Column, excluſive of the Head and Foot. See Column.

The Word is *French*, and literally ſignifies a *Caſk*.

FUSTIAN, in Commerce, a kind of Stuff, which ſeems, as it were, croſs'd, on one Side.

Right *Fuſtians* ſhould be made altogether of Cotton Thread, both Woof, and Warp.

There are *Fuſtians* of divers Kinds, wide, narrow, coarſe, fine; with Shag, or Nap, and without it. There are alſo a great many made whereof the Warp is Flax, or even Hemp.

Fuſtian croſs'd, and napp'd on both Sides, is called *Bombaſin*.——

The Plumbers uſe *Fuſtian* to caſt Lead on. See Plumbery.

Menage derives the Word from *Fuſtanum*, which in the corrupt *Latin* Writers is uſed in the ſame Senſe; and is ſuppoſed to be form'd from *Fuſtis*, on account of the Tree whereon the Cotton grows. See Cotton.

Bochart derives it from *fuſtat*, which in *Arabic* ſignifies the antient City of *Memphis*, where Cotton is produced in great Abundance.

FUSTICK, or Fustock, a yellow Wood, us'd by the Dyers. See Dying.

The Colour it yields is a fine golden Yellow; but there ſhould be ſome other Ingredients mix'd with it, to make it laſting. See Yellow.

The Tree that yields it, grows in all the *Antilles* Iſlands; but particularly that of *Tabago*, where it riſes to a great Height.

The Dyers uſe it chiefly for Blacks. See Black. But ſome of the ableſt, and honeſteſt among them, who would dye none but the beſt, and moſt laſting Colours, are of Opinion it ſhould be abſolutely excluded out of all Dying.

Beſide this, there is another kind of *Fuſtick* or *Fuſtel*, growing in *Italy*, *Provence*, &c. uſed to dye a Coffee Colour.

F-UT-FA, in Muſick, one of the Cleſs. See Clef.

FUTURE, ſomething *to come* hereafter. A *future* Contingency. There is none but God to whom *future* Things are preſent. A *future* State. See Resurrection, and Immortality.

Future, or Future *Tenſe*, in Grammar, an Inflexion of Verbs, whereby they denote, that a Thing *will be*, in ſome Time yet to come. The laſt Day will come. I ſhall ſee an End. See Tense.

The *future* Time admits of two Caſes: Either we may have a mind to expreſs a thing that ſhall come to paſs in a ſhort time; or a thing that ſhall happen in any indefinite Time.

Thus the *Greeks* have their *paulo poſt Future*, ὀλίγον μέλλων, which marks a thing about to be done; as ποιήσομαι; beſide the common, indefinite *Future* ποιήσω, I will do it; *amabo*, I will love.

In *Latin*, *Italian*, *French*, and even *Engliſh*, the *Future* of the *Indicative* expreſſes only the Deſign, or Intention of doing a thing, or ſimply that the Thing will be; as, I will praiſe, I will be approved: And the *Future* of the Subjunctive ſhews that the thing will be done under certain Circumſtances; when I ſhall have ſeen *Verſailles*, I will tell you. Sometimes the *Future* is expreſs'd by the Preſent; If I meet your Friend; *ſi offendero*; *ſi incidero*.