to be performed by the voice; in contradistinction to instrumental muſic, compoſed only for inſtruments, without singing.

VOCATIVE, in grammar, the fifth ſtate or caſe of nouns. See Grammar.

VOETIUS (Giſbert), an eminent divine of the 16th century, was profeſſor of divinity and the Oriental tongues at Utrecht, where he was alſo miniſter. He aſſiſted at the ſynod of Dort ; and died in 1676, aged 87. He wrote a great number of works ; and was the declared enemy of Des Cartes and his philoſophy. His followers are called *Voetians.*

Voetius had two ſons, *Daniel* and *Paul,* who alſo wrote ſeveral works. Joh*n Voetius,* the ſon of Paul, was doc­tor and professor of law at Herborn : he wrote a commen­tary on the Pandects, which is esteemed, and other works on law.

VOICE, a sound produced in the throat and mouth of an animal, by an apparatus of inſtruments for that purpoſe.

Voices are either articulate or inarticulate. Articulate voices are thoſe whereof ſeveral conſpire together to form ſome assemblage or little ſyſtem of sounds : such are the voices expreſſing the letters of an alphabet, numbers of which joined together form words. Inarticulate voices are ſuch as are not organized, or aſſembled into words ; ſuch is the barking of dogs, the braying of asses, the hiſſing of ſerpents, the ſinging of birds, &c.

The formation of the human voice, with all the varieties thereof obſerved in ſpeech, muſic, &c. makes a very curious article of inquiry ; and the apparatus and organiſm of the parts adminiſtering thereto, is something exceedingly ſurprising. Thoſe parts are the trachea or wind-pipe, through which the air passes and repasses into the lungs ; the larynx, which is a ſhort cylindrical canal at the head of the trachea; and the glottis, which is a little oval cleft or chink left between two ſemicircular membranes stretched horizontally withinſide the larynx ; which membranes, though capable of joining cloſe together, do generally leave an interval, ei­ther greater or leſs, between them, called the *glottis.* A particular deſcription of each part may be ſeen in Anato­my, Part IV. Sect. 5.

Voice, in grammar, a circumſtance in verbs, whereby they come to be conſidered as either active or paſſive, *i. e.* either expreſſing an action impressed on another ſubject, as, *I beat ;* or receiving it from another, as, *I am beaten.* See Grammar.

Voice, in matters of election, denotes a vote or ſuffrage.

Voice, in oratory. See Declamation ; Reading, n⁰ 5.; and Oratory, n⁰ 129—131.

VOLANT, in heraldry, is when a bird, in a coat of arms, is drawn flying, or having its wings ſpread out.

VOLATILE, in phyſics, is commonly used to denote a mixed body, whoſe integrant parts are eaſily diſſipated by fire or heat ; but is more properly uſed for bodies whoſe parts are eaſily ſeparated from each other, and diſperſed in air.

Volatile A*lkali,* in the new French nomenclature *ammoniaca,* one of the three alkaline faits. It conſiſts, as Mr Berthollet and ſeveral other chemiſts have proved, of 807 parts in 1000 of azot, and 193 of hydrogen. Several expe­riments, published by Dr Prieſtley, led the way to this analysis, though he himſelf did not ſee their reſult. It is chief­ly procurable from animal ſubſtances by diſtillation, during which proceſs the azot and hydrogen necessary to its formation unite in proper proportions; it is not however procured pure by this proceſs, being mixed with oil and water, and moſtly ſaturated with carbonic acid. To ſeparate theſe ſub­ſtances, it is firſt combined with an acid, the muriatic for inſtance, and then diſengaged from that combination by the addition of lime or pitch. In its greateſt degree of purity it can only exiſt in a gasseous form, at leaſt in the common temperature of the atmosphere. It was at firſt obtained chiefly from urine, and was therefore called *ſal urinae ;* after­wards from horns, eſpecially from thoſe of the hart, hence its name, sal *cornu cervi,* “ hart’s horn.” See Chemistry- *Index.*

VOLATILISATION, the art of rendering fixed bo­dies volatile, or of resolving them by fire into a fine ſubtle vapour or ſpirit which eaſily diſſipates and flies away. All bodies, even the moſt fixed, as gold, may be volatiliſed, either of themſelves, or with the admixture of ſome volatile ſubſtance or ſpirit, by diſtillation or ſublimation.

VOLCANO, a name given to burning mountains, or to vents for ſubterraneous fires.

The number of volcanoes with which we are at preſent acquainted is very conſiderable, not much leſs than 100. In Europe there are Ætna, Vesuvius. Hecla, Stromboli, Vul­cano; in Asia, one in Mount Taurus, three in Kamtschatka, five in Japan, two in the Philippines, and a great number more ſcattered through the iſlands in the South Sea; in Africa, one in Fez, one in the iſland Bourbon, one in Fuego, one of the Cape Verd iſlands; and in America ſeveral in the Andes, Morne Garou in St Vincent, and two diſcovered by Captain Cook on the weſtern coaſt of North America. There are others, but theſe are beſt known.

It is remarkable that all the volcanoes with which we are acquainted, four or five perhaps excepted, are situated at a ſmall diſtance from the ſea. Moſt of them have been burn­ing from time immemorial ; ſome few however have burſt out in our time. Volcanoes all occupy the tops of moun­tains, we find none of them in plains ; ſome of them indeed, which are situated in the ocean, do not riſe much above the ſurface; but even theſe volcanoes ſeem to be the apices of mountains, the greater part of which are covered by the ſea. The ſubſtances ejected by volcanoes are fixed and inflam­mable air, water, aſhes, pumice ſtones, ſtones that have under­gone no fuſion, and lava. The phenomena which take place during the eruptions of volcanoes have been ſo fully deſcribed already in the articles Ætna, Hecla, Iceland, and Vesuvius, that any repetition here would be unnecessary and improper. All that remains, therefore, is to explain the causes of volcanoes, or, to ſpeak more properly, to mention the opinions of philosophers concerning the cauſes of volcanoes ; for the real cauſe, we are afraid, after all that has been done, remains ſtill unknown. The moſt elaborate theory that has yet appeared is that of Μ. Houel@@\*.

According to him, water is necessary ſor the formation of volcanoes. All volcanoes are near the ſea : they are even extinguished when the ſea retires from them, for we can ſtill perceive the craters of volcanoes in ſeveral lofty inland moun­tains, which diſcover what they have been formerly. He ſuppoſes that a long ſeries of ages was necessary for the for­mation of a volcano, and that they were all formed under the ſurface of the ſea. The firſt exploſion which laid open the foundations of the deep, would possibly be preceded by an earthquake. The waters would be parted by a vaſt globe of burning air, which would issue forth with a tre­mendous noiſe, opening at the ſame time a large and wide vent for the immenſe flame that was to follow ; and which, as it issued from the bottom of the ſea, would be ſpread over its ſurface by the firſt guſts of wind which followed. A fire which was to burn through thouſands of years, could not be faint or feeble when it was firſt lighted up. Its firſt eruptions therefore have undoubtedly been very violent, and the ejected matter very copious. For a long ſeries of ages it would continue to diſcharge torrents of lava from the

@@@[m]\* Voyage Picturesque.