funnel M, ſo that they may be always kept pretty fully diſtended. When an impregnation is ſpeedily required, turn the ſtop-cocks at G and E, and open that at L ; then ſeparate the pipe E from the tube F, and agitate the veſſel A ; the fixable air will paſs into the bladder K, and may be preſſed into the two other bladders, when the parts of the apparatus are united. During the agitation, the ſtop-cock at I ſhould be cloſed, and opened only occasionally to ſupply out of the bladders H, H, the fixable air abſorbed by the water. If a ſtrong impregnation be required, this proceſs ſhould be carried on in a room, the heat of which docs not ex­ceed forty-eight degrees of Fahrenheit’s thermometer. Dr Withering obſerves, that the impregnated water re­ceives no taſte from the bladders ; and that if the veſ­ſel A with its impregnated water be ſeparated from the veſſel B at the conical parting E, F, it may be incloſed in a pyramidal mahogany caſe, out of the lower part of which the ſilver cock at O projects ; and thus ſerve for an ornamental as well as luxurious and ſalubrious addi­tion to the ſide-board, particularly in the ſummer and autumnal ſeaſons.

The artificial mineral waters thus made, are more pleaſant to the taſte than the natural Pyrmont or Selt­zer waters ; which, besides their fixed air, contain ſaline particles of a diſagreeable taſte, which are known to contribute little or nothing to their medicinal vir­tues, and may, in ſome cafes, be hurtful. They are likewiſe conſiderably ſtronger. According to Sir John Pringle, theſe waters may be made more nearly to reſemble genuine Pyrmont water, by adding to each pint of them from eight to ten drops of *tinctura martis cum sρiritu ſalis.* Or this may be done, by adding to the water in the middle veſſel B (fig. ι.), in the propor­tion of about thirty grains of Epſom ſalt, ten grains of common ſalt, a ſcruple of magneſia alba, and a dram of iron filings or iron wire, clean and free from ruſt, to one gallon of spring water, and impregnating the whole with fixed air in the mariner already deſcribed. Let them remain, till the other ingredients and as much of the iron as is neceſſary are diſſolved ; which will be in two or three days : or the magneſia may be omitted, and then the operation will be finiſhed in leſs than half that time. Theſe waters may be rendered ferruginous or chalybeate very eaſily, by putting in the middle veſſel two or more ſlender phials, filled with cuttings of fine iron-binding wire, or with small iron nails ; becauſe the impregnated water will diſlblve the iron ſo faſt, as to become well ſaturated with it in a few hours, according to the experiments of Mr Lane. But the method of rendering theſe artificial waters chalybeate, uſed by Dr Hulme, is to add one grain of ſalt of ſteel to each pint (ſixteen ounces) of water already impregnated with fixed air.

But the ingenious Mr Bewley has invented a ſtill bet­ter method of exhibiting fixed air as a medicine. He directs a ſcruple of alkaline ſalt to be diſſolved in a ſufficient quantity (a quarter of a pint, or leſs) of water, which is to be impregnated with as much fixed air as it can imbibe : this is to be taken at one doſe. Mr Bewley directs it to be prepared in larger quantities at a time, and calls it his mephitic julep. If immediately after it a ſpoonful of lemon juice, mixed with two or three ſpoonfuls of water, and ſweetened with ſugar, be drunk, the fixed air will be extricated in the ſtomach ; and thus a much greater quantity of it may be given than the ſame quantity of water alone can be made to imbibe. Fixed air acts as a corroborant ; and there­fore may be given with ſuceeſs in weakneſs of the ſtomach, and in vomitings ariſing from that cause. It has alſo been given with ſucceſs in the ſtone and in nephri­tic complaints. When the lungs are purulent, fixed air mixed with the air drawn into the lungs has repeatedly been found to perform a cure. The bark also may be given with advantage in water impregnated with fixed air, as they both coincide in their effect. Fixed air may be applied by means of a ſyringe, funnel, or otherwise, to inflamed breaſts, putrid ulcers, mortified parts, ulcerated ſore throats, and has been found in ſuch and similar caſes to have very remarkable efficacy. It may alſo be given internally at the same time. In pu­trid dyſenteries, and in putrid ſtools, fixed air may be given by way of clyſter. Fermenting cataplasms are of ſervice, chiefly as they ſupply fixed air to the part. In caſes of putridity fixed air has been ſucceſsfully ap­plied to the ſurface of the body expoſed to ſtreams of it. It is alſo found an excellent cooling as well as ſtrengthening beverage in hot relaxing weather, and has the advantage of being pleaſant to the taſte.

SEM, or Shem, the ſon of Noah, memorable for his filial piety in concealing the folly and diſgrace of his father; for which he received a remarkable bene­diction, about 2476 B. C. He lived to the age of 600 years.

*Ras SeM.* See RAS *Sem* and PETRIFIED *City.*

SEMECARPUS, in botany ; a genus of the trigy­nia order, belonging to the pentandria class of plants. The corolla is quinquepetalous ; the drupa is heart- ſhaped, cellulous, and monoſpermous. There is but one ſpecies.

SEMEN, seed. See Botany, ſect. iv. p. 435.

With reſpect to number, plants are either furniſhed with one ſeed, as ſea-pink and biſtort ; two, as wood- roof and the umbelliferous plants ; three, as spurge; four, as the lip flowers of Tourneſort and rough-leaved plants of Ray ; or many, as ranunculus, anemone, and poppy.

The form of ſeeds is likewiſe extremely various, be­ing either large or small, round, oval, heart-ſhaped, kid- ney-ſhaped, angular, prickly, rough, hairy, wrinkled, ſleek or ſhining, black, white, or brown. Most ſeeds have only one cell or internal cavity ; thoſe of lesser bur­dock, valerian, lamb’s lettuce, cornelian cherry, and ſebeſten, have two.

With reſpect to ſubſtance, ſeeds are either ſoft, membranaceous, or of a hard bony ſubſtance ; as in grom- well, tamarind, and all the nuciferous plants.

In point of magnitude, ſeeds are either very large, as in the cocoanut ; or very ſmell, as in campanula, *ammannia,* rampions, and throat-wort.

With reſpect to situation, they are either diſperſed promiſcuouſly through the pulp *(femina nidulantia),* as in water-lily ; affixed to a future or joining of the valves of the ſeed-veſſel, as in the croſs-ſhaped and pea-bloom flowers ; or placed upon a *placenta* or receptacle within the feed veſſel, as in tobacco and thorn-apple.

Seeds are ſaid to be naked *(femina nuda)* which are not contained in a cover or veſſel : ſuch are thoſe of the lip and compound flowers, the umbelliferous and rough-leaved plants; covered ſeeds *(ſemina tecta)* are