brick, in moulds of the figure of the intended ſtone, and by expoſing the maſſes ſo formed to the open @@(q.) air to harden.

“ When ſuch cement is required for water @@(r) fences, two-thirds of the preſcribed quantity of bone-ashes are to be omitted ; and in the place thereof an equal meaſure *of* pow­dered terras is to be uſed ; and if the sand employed be not of the coarseſt sort, more terras muſt be added, ſo that the terras ſhall be by weight one-ſixth part of the weight of the sand.

“ When ſuch a cement is required of the fineſt grain @@(s) or in a fluid form, ſo that it may be applied with a bruſh, flint powder, or the powder of any quartoſe or hard earthy ſubstance, may be uſed in the place of sand ; but in a quan­tity ſmaller, as the flint or other powder is finer ; ſo that the flint-powder, or other ſuch powder, ſhall not be more than six times the weight of the lime, nor less than four times its weight. The greater the quantity of lime within theſe limits, the more will the cement be liable to crack by quick drying, and *vice verſa.*

“ Where ſuch sand as I prefer cannot be conveniently procured, or where the sand cannot be conveniently waſhed and ſorted, that sand which moſt reſembles the mixture of coarse and fine sand above preſcribed, may be uſed as I have directed, provided due attention is paid to the quantity of the lime, which is to be greater @@(T) as the quantity is finer, and *vice verſa.*

“ Where sand cannot be eaſily procured, any durable ſtony body, or baked earth groſsly powdered @@(u), and ſort­**ed** nearly to the sizes above preſcribed for sand, may be uſed in the place of sand, meaſure for meaſure, but not weight for weight, unleſs ſuch groſs powder be as heavy ſpecifically as sand.

“ Sand may be cleanſed from every ſofter, lighter, and leſs durable matter, and from that part of the sand which is too fine, by various methods preferable @@(x), in certain circumstances, to that which I have deſcribed.

“ Water may be found naturally free from fixable gas, ſelenite, or clay ; ſuch water may, without any notable in­convenience, be uſed in the place of the cementing liquor ; and water approaching this ſtate will not require ſo much lime as I have ordered to make the cementing liquor ; and a cementing liquor ſufficiently uſeful may be made by vari­ous methods of mixing lime and water in the deſcribed pro­portions, or nearly ſo.

“ When ſtone-lime cannot be procured, chalk-lime, or ſhell-lime, which beſt reſembles ſtone-lime, in the charac­ters above written of lime, may be uſed in the manner deſcribed, except that fourteen pounds and a half of chalk­lime will be required in the place of fourteen pounds of ſtone-lime. The proportion of lime which I have preſcri­bed above may be increaſed without inconvenience, when the cement or ſtucco is to be applied where it is not liable to dry quickly ; and in the contrary circumſtance, this pro­portion may be diminiſhed ; and the defect of lime in quan­tity or quality may be very advantageouſly ſupplied @@(Y), by cauſing a conſiderable quantity of the cementing liquor to ſoak into the work, in ſucceſſive portions, and at diſtant intervals of time, ſo that the calcareous matter of the cement­ing liquor, and the matter attracted from the open air, may fill and ſtrengthen the work.

“ The powder of almoſt every well-dried or burnt ani­mal ſubstance may be uſed inſtead of bone-aſh ; and ſeveral earthy powders, eſpecially the micaceous and the metallic ; and the elixated aſhes of divers vegetables whoſe earth will not burn to lime ; and the aſhes of mineral fuel, which are of the calcareous kind, but will not burn to lime, will anſwer the ends of bone-aſh in ſome degree.

“ The quantity of bone-aſh deſeribed may be lessened without injuring the cement, in thoſe circumſtances eſpeci­ally which admit the quantity of lime to be leſſened, and in thoſe wherein the cement is not liable to dry quickly. And the art of remedying the defects of lime may be ad­vantageouſly practised to ſupply the deficiency of bone-aſh, eſpecially in building, and in making artificial ſtone with this cement.

@@@(q) “ But they muſt not be expoſed to the rain until they are almoſt as ſtrong as freſh Portland ſtone ; and even then **they** ought to be ſheltered from it as much as the circumſtances will admit. Theſe ſtones may be made very hard and beautiful, with a ſmall expence of bone-aſh, by ſoaking them, after they have dried thoroughly and hardened, in the lime liquor, and repeating this proceſs twice or thrice, at diſtant intervals of time. The like effect was experienced in incruſtations.

@@@(κ) “ In my experiments, mortar made with terras-powder, in the uſual method, does not appear to form ſo ſtrong a cement for water-fences as that made, according to the ſpecification, with coarse sand ; and I ſee no more reaſon for avoiding the uſe of sand in terras-mortar, than there would be for rejecting ſtone from the embankment. The bone- aſhes meant in this place are the dark grey or black sort. I am not yet fully ſatisfied about the operation of them in this inſtance.

@@@(s) “ The qualities and uſes of ſuch fine calcareous cement are recommended chiefly for the purpoſe of ſmoothing and finiſhing the ſtronger cruſtaceous works, or for waſhing walls to a lively and uniform colour. For this laſt intention, the mixture muſt be as thin as new cream, and laid on brilkly with a bruſh, in dry weather ; and a thick and durable coat is to be made by repeated waſhing ; but is not to be attempted by uſing a thicker liquor ; for the coat made with this laſt is apt to ſcale, whilſt the former endures the weather much longer than any other thin calcareous covering that has been applied in this way. Fine yellow-ochre is the cheapeſt colouring-ingredient for ſuch waſh, when it is required to imitate Bath-ſtone, or the warm-white ſtones.

**@@@(T) “** If ſea-ſand be well waſhed in freſh water, it is as good as any other round sand.

@@@(U) “ The cement made with theſe and the proper quantities of purified lime and lime-water, are inferior to the beſt, as the grains of theſe powders are more periſhable and brittle than thoſe of sand. They will not therefore be employed, unleſs for the ſake of evaſion, or for want of sand : in this latter caſe, the finer powder ought to be waſhed away.

@@@(x) “ This and the next paragraph is inſerted with a view to evaſions, as well as to ſuggeſt the eaſier and cheaper methods which may be adopted in certain circumſtances, by artiſts who underſtand the principles which I endeavour­ed to teach.

@@@(Y) “ This practice is noticed, as the remedy which may be uſed for the defects ariſing from evasive meaſures, and as the method of giving ſpongy incruſtations containing bone-ashes the greateſt degree of hardneſs.’’