ſkin worked off by degrees with an old file, This is the caſe with ſeveral of the cylinders, which have not the natural poliſh of the reſt.

When a ſhell is covered with a thick and fatty epi­dermis, as is the caſe with ſeveral of the muſcles and tellinae ; in this caſe aquafortis will do no ſervice, as it will not touch the ſkin : then a rough bruſh and coarſe emery are to be uſed ; and if this does not ſucceed, seal-ſkin, or, as the workmen call it, fish-skin and pu *miceſtone,* are to be employed.

When a ſhell has a thick cruſt, which will not give way to any of theſe means, the only way left is to plunge it ſeveral times into strong aquafortis, till the stubborn cruſt is wholly eroded. The limpets, auris marina, the helmet-ſhells, and ſeveral other ſpecies of this kind, muſt have this fort of management ; but as the deſign is to ſhow the hidden beauties under the cruſt, and not to deſtroy the natural beauty and poliſh of the inside of the ſhell, the aquafortis muſt be uſed in this manner : A long piece of wax muſt be pro­vided, and one end of it made perfectly to cover the whole mouth of the ſhell ; the other end will then ſerve as a handle, and the mouth being flopped by the wax, the liquor cannot get in to the inside to ſpoil it ; then there muſt be placed on a table a veſſel full of aquafortis, and another full of common water.

The ſhell is to be plunged into the aquafortis ; and after remaining a few minutes in it, is to be taken out, and plunged into the common water. The progreſs the aquafortis makes in eroding the ſurface is thus to be carefully obſerved every time it is taken out : the point of the ſhell, and any other tender parts, are to be covered with wax, to prevent the aquafortis from eating them away ; and if there be any worm- holes, they alſo muſt be ſtopped up with wax, other­wiſe the aquafortis would ſoon eat through in thoſe places. When the repeated dippings into the aqua­fortis ſhow that the coat is ſufficiently eaten away, then the ſhell is to be wrought carefully with fine emery and a bruſh ; and when it is poliſhed as high as can be by this means, it muſt be wiped clean, and rubbed over with gum-water or the white of an egg. in this fort of work the operator muſt always have the caution to wear gloves; otherwiſe the leaſt touch of the aquafortis will burn the fingers, and turn them yellow ; and often, if it be not regarded, will eat off the ſkin and the nails.

Theſe are the methods to be uſed with ſhells which require but a moderate quantity of the ſurface to be taken off ; but there are others which require to have a larger quantity taken off, and to be uncovered deeper: this is called entirely ſcaling a ſhell. This is done by means of a horizontal wheel of lead or tin, impreg­nated with rough emery ; and the ſhell is wrought down in the same manner in which ſtones are wrought by the lapidary. Nothing is more difficult, however, than the performing this work with nicety: very often ſhells are cut down too far by it, and wholly ſpoiled ; and to avoid this, a coarſe vein muſt be often left Handing in ſome place, and taken down afterwards with the file, when the cutting it down at the wheel would have ſpoiled the adjacent parts.

After the ſhell is thus cut down to a proper degree, it is to be poliſhed with fine emery, tripoli, or rotten stone, with a wooden wheel turned by the ſame machine

as the leaden one, or by the common method of work­ing with the hand with the ſame ingredients. When a ſhell is full of tubercles, or protuberances, which muſt be preſerved, it is then impoſſible to uſe the wheel : and if the Common way of dipping into aquafortis be at­tempted, the tubercles being harder than the reſt of the ſhell, will be eat through before the reſt is ſuffici­ently ſcaled, and the ſhell will be ſpoiled. In this caſe, induſtry and patience are the only means of effecting a poliſh. A camel's hair pencil muſt be dipped in aqua­fortis ; and with this the intermediate parts of the ſhell muſt be wetted, leaving the protuberances dry : this is to be often repeated ; and after a few moments the ſhell is always to be plunged into water to ſtop the eroſion oſ the acid, which would otherwiſe eat too deep, and deſtroy the beauty of the ſhell. When this has ſuffici­ently taken off the foulneſs of the ſhell, it is to be po­liſhed with emery of the fineſt kind, or with tripoli, by means of a ſmall ſtick, or the common poliſhing-ſtone uſed by the goldſmiths may be uſed.

This is a very tedious and troubleſome thing, eſpecially when the echinated oyſters and murices, and ſome other ſuch ſhells, are to be wrought : and what is worſt of all is, that when all this labour has been em­ployed, the buſiness is not well done ; for there still re­main ſeveral places which could not be reached by any inſtrument, ſo that the ſhell muſt necessarily be rubbed over with gum-water or the white of an egg afterwards, in order to bring out the colours and give a gloſs ; in ſome cases it is even necessary to give a coat of varniſh.

Theſe are the means uſed by artiſts to brighten the colours and add to the beauty of ſhells ; and the changes produced by poliſhing in this manner are ſo great, that the ſhell can ſcarcely be known afterwards to be the ſame it was ; and hence we hear of new ſhells in the cabinets of collectors, which have no real exiſtence as ſeparate ſpecies, but are (hells well known, diſguiſed by poliſhing. To caution the reader againſt er­rors of this kind, it may be proper to add the most re­markable ſpecies thus uſually altered.

The onyx-ſhell or volute, called by us the *purple* or *violet-tip,* which in its natural ſtate is of a simple pale brown, when it is wrought slightly, or polished with just the ſuperficies taken off, is of a fine bright yellow; and when it is eaten away deeper, it appears of a fine milk-white, with the lower part bluiſh : it is in this ſtate that it is called the *onyx-shell ;* and it is preſerved in many cabinets in its rough ſtate, and in its yellow appearance, as different ſpecies of ſhells.

The *violet shells,* ſo common among the curious, is a ſpecies of porcelain, or common cowry, which does not appear in that elegance till it has been poliſhed ; and the common auris marina shows itſelf in two or three different forms, as it is more or leſs deeply wrought. In its rough ſtate it is duſky and coarſe, of a pale brown on the outside, and pearly within ; when it is eaten down a little way below the ſurface, it shows variegations of black and green ; and when it ill farther eroded, it appears of a fine pearly hue within and without.

The *nautilus,* when it is poliſhed down, appears all over of a fine pearly colour ; but when it is eaten away but to a ſmall depth, it appears of a fine yellowiſh colour with duſky hairs. The burgau, when entirely cleared of its coat, is of the most beautiful pearl co-