V. *An Account of ſome Experiments touching the keeping of Fiſhes in Water under different Circumſtances. By Mr* Fr. Hauskbee, *F. R. S.*

THE Fiſhes made uſe of in the following Experiments were Gudgeons; which are a ſort of Fiſh very brisk and lively in the Water, and will live a pretty conſiderable time out of it. Three of them I put into a Glaſs Veſſel, to about three Pints of common Water (which Fiſhes were to be a ſtandard to compare the others by.) Into another Glaſs, to a like quantity of Water, I put three more of them, which quantity of Water juſt fill'd this Glaſs to the very Brim; upon which I ſcrew'd down a Braſs Plate with a Leather between, to prevent a Communication with the Water in the Glaſs and the External Air: And that it might the better reſemble a Pond of Water frozen over (on which account this Experiment was made) I ſuffer'd as little Air as poſſible to remain on the Surface of the included Water. The third Glaſs had a like quantity of Water put into it as the former; which Water, firſt by boyling, then by continuing it a whole Night in *Vacuo* on the Air Pump, was purg'd of its Air to the greateſt nicety: Into this Water alſo, I put a like number of Gudgeons as into the other. Thus (the Fiſhes being all put into their reſpective Receivers) I apply'd my ſelf to wait the Event; which was as follows. It was about half an Hour after Ten in the Morning when I began the Experiments; and in about half an Hour from that time, I obſerv'd the Fiſhes in the exhauſted Water, or Water purg'd of its Air, began to diſcover ſome uneaſineſs, by a more than ordinary Motion

Motion in their Mouths and Gills, or Reſpiration, if I may call it ſo, differing from the Fiſhes in the other Glaſſes; the included Fiſhes at the ſame time diſcovering no alteration; only I took notice that they would now and then aſcend to the top of the Water, but ſuddenly ſwim down again: And in this State they continued for ſome conſiderable time, without any ſenſible Alteration. About 5-Hours after the laſt Obſervation, the Fiſhes in the exhauſted Water became not ſo active (upon a Motion given the Glaſs that contain'd them) as before: And thoſe Gudgeons included without any Communication with the outward Air, now began conſiderably to abate of their Vivacy; yet ſtill continued at times their Motions upward and down again. At Seven in the Evening, the included Fiſhes lay all at the bottom of the Glaſs, with their Bellies upwards; nor upon ſhaking the Glaſs, could I put them in Motion, or cauſe them to ſtir their Fins or Tail; only I could obſerve a Motion in their Mouths, which ſhew'd me they were not perfectly dead. In this State they lay for ſome time: But conſidering the Experiment would not be compleat, if I did not attempt their Recovery by taking off the Braſs Cover, being very ſure they muſt have dy'd in ſome ſmall time under the Circumſtances they were then in, accordingly I took off the Cover, and gave the Surface of the Water a free and open Communication with the External Air. At about Ten at Night, I obſerv'd them again; at which time their Recovery was ſo evident, that upon a little diſturbing the Glaſs that contain'd them, they were actually in Motion again: And at this time alſo, the Fiſhes in the Water purg'd of Air, began to appear more brisk and lively than at the laſt Obſervation. Here I cannot but take notice, that notwithſtanding the Water was purg'd of its Air to a very great degree, yet the Fiſhes put into it did not ſo much as once aſcend in it; but continued always at the bottom

bottom, as the Fiſhes did in the common Water. At this time I left them till the next Morning; when about Eight a Clock I found them as perfectly well and lively in all the Glaſſes, as when they were firſt put in. Thoſe in the common Water expos'd to the open Air, ſuffer'd no manner of change during the whole time. After this I was willing to try whether the Air had again inſinuated itſelf into the purg'd Water, and whether that might not be the occaſion of the Fiſhes Recovery. Accordingly I put it on the Plate of my Pump, in the ſame Glaſs with the Fiſhes in it; and being cover'd with another Receiver, the Air was taken from it; yet I could perceive very little Air aſcend in it, and to me it ſeem'd to be much in the ſame State as when the Fiſhes were firſt put in. I continued it *in Vacuo* about an Hour and half; the Fiſhes almoſt all the time continued at the top of the Water, and at that time appeared as dead; for upon letting in the Air, they ſunk haſtily to the bottom, without any Motion of their Fins or Tails.

From the whole Account I obſerve;

Firſt, That Water purg'd of Air, ſo far as the Method here made uſe of, is capable to do it, renders it not altogether unfit to ſupport the Lives of Water Animals. For altho' when the Fiſhes were firſt put in, and for ſome Hours after, they ſeem'd to ſuffer ſome uneaſineſs; yet at length the Water became more familiar to them, or their Conſtitutions in ſome meaſure did ſo conform, as to render the Water to them, and them to the Water more agreeable: Otherwiſe I do not ſee how their Recovery ſhould follow, ſince upon examining, little or no alteration could be found in the Circumſtances of the Water, from the time the Fiſhes were firſt put in.

Secondly, The Fiſhes included with their Water from any Communication with the External Air, plainly demonſtrate, that common Water in its Natural State is

not alone ſufficient to preſerve the lives of its Natural Animals. Hence it follows, that in Ponds, when the Water comes to be frozen over with a pretty thick Ice, the Fiſhes in the ſaid Ponds are very likely, if not certain to periſh, upon the continuance of ſuch a Congelation for ſome time on their Surfaces; unleſs (as in the latter part of the Experiments) the Impediment, which hinder'd the immediate Contact of the Air to the Surface of the Water, be remov'd; that is, by breaking Holes in the Ice, whereby it is reſtored, and undoubtedly will perform the ſame thing as my Removal of the Braſs Plate. This is to be underſtood only in Ponds, where the Water is ſtagnant; for where there are Springs, or a current of Water conſtantly ſucceeding under the Ice, the effect moſt likely will not be the ſame.

VI. *Part of a Letter from Mr.* Patrick Blair *to Dr.* Hans Sloane, *R. S. Secr. Giving an Account of the* Asbeſtos, *or* Lapis Amiantus, *found in the the* High-lands *of* Scotland.

I Take leave to communicate the Relation of a Gentleman in the *High-lands*, not many Miles hence, who has lately built an Houſe of a ſingular kind of Stone, digg'd out of a Quarry not far from him. This Stone, after the Rubbiſh, which is not very deep, is done away, lyes Horizontally in a Bed endu'd with parallel Fibres, with few Interſtices, ſoft at the beginning, and eaſy to be ſmooth'd and poliſh'd without any Tool, but rather with Sand, or an other hard Stone of a blewiſh Colour, which afterwards hardens ſo, that it reſiſteth the injuries of Air or prejudice of Fire. When

firſt