An Account

Of an Experiment made by Mr. Hook, of Preserving Animals alive by Blowing through their Lungs with Bellows.

This Noble Experiment came not to the Publisher’s hands, till all the preceding Particulars were already sent to the Presi, and almost all Printed off, (for which cause also it could not be mentioned among the Contents:) And it might have been reserved for the next opportunity, had not the Considerableness thereof been a motive to hasten its Publication. It shall be here annexed in the Ingenious Author’s own words, as he presented it to the Royal Society, October 24, 1667. The Experiment is itself having been both repeated (after a former successful trial of it, made by the same hand a good while agoe) and improved the week before, at their publick Assembly. The Relation is itself follows:

I Did heretofore give this Illustrious Society an account of an Experiment I formerly tried of keeping a Dog alive after his Thorax was all dislay’d by the cutting away of the Ribs and Diaphragm; and after the Pericardium of the Heart also was taken off. But divers persons seeming to doubt of the certainty of the Experiment (by reason that some Tryals of this matter, made by some other hands, failed of success) I caus’d at the last Meeting the same Experiment to be shewn in the presence of this Noble Company, and with that the same success, as it had been made by me at first; the Dog being kept alive by the Reciprocals blowing up of his Lungs with Bellows, and they suffered to subsire, for the space of an hour or more, after his Thorax had been so displey’d, and his Aspera arteria cut off just below the Epigastri is, and bound on upon the nofe of the Bellows.

And because some Eminent Physicians had affirm’d, that the Motion of the Lungs was necessary to Life upon the account of promoting the Circulation of the Blood, and that it was conceiv’d, the Animal would immediately be suffocated as soon as the Lungs should cease to be moved, I did (the better to fortify my own Hypothesis of this matter, and to be the better able to Judge of several others) make the following additional Experiment; viz.

The Dog having been kept alive, (as I have now mentioned) for above an hour, in which time the Tryal hath often been repeated, in suffering the dog to fall into Convulsive motions by ceasing to blow the Bellows, and permitting the Lungs to subsire and lye still, and of all suddenly reviving him again by renewing the blast, and consequently the motion of the Lungs: This I lay, having been done, and the Judicious Spectators fully satisfied of the reality of the former Experiment; I caus’d another pair of Bellows to be immediately joyn’d to the first, by a contrivance, I had prepar’d, and pricking all the outer coat of the Lungs with the slender point of a very sharp pen-knife, this second pair
pair of Bellows was mov'd very quick, whereby the first pair was always kept full and always blowing into the Lungs; by which means the Lungs also were always kept very full, and without any motion, there being a continual blast of Air forc'd into the Lungs by the first pair of Bellows, supplying it as fast as it could find its way quite through the Coat of the Lungs by the small holes pricked in it, as was said before. This being continued for a pretty while, the dog, as I expected, lay still, as before, his eyes being all the time very quick, and his Heart beating very regularly: But, upon ceasing this blast, and suffering the Lungs to fall and ly still, the Dog would immediately fall into Dying convulsive fits; but be as soon reviv'd again by the renewing the fulness of his Lungs with the constant blast of fresh Air.

Towards the latter end of this Experiment a piece of the Lungs was cut quite off; where 'twas observable, that the Blood did freely circulate, and pass thorow the Lungs, not only when the Lungs were kept thus constantly extended, but also when they were suffered to subside and ly still. Which seem to be Arguments, that as the bare Motion of the Lungs without fresh Air contributes nothing to the life of the Animal, he being found to survive as well when they were not mov'd, as when they were; so it was not the subsiding or movement of the Lungs that was the immediate cause of Death, or the stopping the Circulation of the Blood through the Lungs, but the want of a sufficient supply of fresh Air.

I shall shortly further try, whether the suffering the Blood to circulate through a vessel, so as it may be openly expos'd to the fresh Air, will not suffice for the life of an Animal; and make some other Experiments, which, I hope, will throughly discover the Genuine use of Respiration; and afterwards consider of what benefit this may be to Mankind.

FINIS.

In the SAVOY,
Printed by T.N. for John Martyn, at the Bell a little without Temple-Bar, and Nathaniel Brooks at the Angel in Gresham-Colledge, 1667.