

Essays of natural Experiments made in the Academy del Cimento under the Protection of the most Serene Prince Leopold of Tuscany. Englisht by the ingenious Richard Waller Esq; Fellow of the Royal Society.

THIS work was published in *Italian* in the year 1667. and contains several curious *Experiments* made in the Academy del Cimento, at Florence: the *Italian* Author thought fit to prefix a *Preface* elegantly discovering the design of the *Academy*, to advance real knowledge, their Ingenuity, and Candour in communicating their *Experiments*, and their obligations to the great Duke Ferdinand of Tuscany, Father to the present Duke Cosmo.

1. The *Experiments* are couch'd under 10 heads, treating of several *Subjects*. It were improper in this place to give a large account of each *Particular*; but in short: Having described some of their *Instruments*, as *Thermometers* (of which they seem to bid fairest for the *invention*; the first having been brought from Florence, and shewn here, tho they were reduced to a Standard, and received their *perfection* hence) the *Pendulum*, and other *instruments*, they come then to their first head, the *Airs pressure*, where most of the known *Mercurial Experiments* are tryed, and confirmed, Objections answer'd, &c. with several *Experiments* made in *vacuo*, upon as well animate, as inanimate Bodies. Amongst the rest is observable an *Experiment* of *Sound*; which may be worth repeating, *viz.* that an *Organ Pipe* sounded in *vacuo*, speaks with little, or no difference, the thin *Æther* it seemes being capable of causing it. Another *Experiment* is related of a small *Fish* that surviv'd the *Wrack* of the *vacuum*, but was thereby so far disabled; that he could never after raise himselfe in the water, but had the *Serpents Curse* of creeping on his Belly in the Mud.

2. In their second Head of *Freezing* they are very curious in examining the *Expansion*, Force, and Procedure of

of freezing, whereof they have set down several very accurate Tables containing the gradual increase of *Bulke*, and particular time of every change happening in divers *Fluids*, these *Experiments* were made by an Artificial application of *Salt*, and *Snow* to the outside of the vessels. There are likewise many Tryals of *Freezing* naturally by the simple cold of the air. To these are added some *Experiments* about the alteration of the capacity of vessels by *Heat* and *Cold*.

3. *Experiments* to shew *Water* incapable of Compression.

4. Against *Positive Levity*.

5. *Magnetical Experiments*.

6. They treat of *Electric* Bodys; which are so, which not, where many *Experiments* are tryed, chiefly with *Amber*.

7. About the change of *Colours* of *Fluids* by the mixture of other *fluids*; where 'tis observable that water still'd in *Lead* inturbidates all *Spring*, *River*, and *Bath* waters.

8. About the Motion of *Sounds* made with several *Canon*, and *Musket* shot.

9. Of *Projected Bodys*, their motion.

The 10th, contains a Miscellany of *Experiments* not reducible to any of the former heads; as the Comparative weight of *air*, and *water*, Difference of weight of Bodys hot, and cold. Force of heat in *Rarefaction*, which was indeed very great, breaking a stone Pavement &c. Of *Glass* whether penetrable: of *Light*, and its quick motion: of *Burning-Glasses*: of Bodys affording *Light* when broken to pieces. *Experiments* touching the Digestion of *Animals*, which seemes to be by attrition; Grinding to Powder all bodys of what solidity soever.

So much shall suffice for a slight view of the work, which in most if not all the *Experiments* is very nice, curious, and faithful: but to satisfy those that desire a fuller information I recommend the *Book* it self as very well worth the Perusal, and by this *Translation* easy to be procured.

O X F O R D,

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