



TO
THE TRULY NOBLE
PHILOSOPHER,

ROBERT BOYLE Esq;
Brother to the Right Honorable the
Earl of Burlington, &c.

SIR,



Cannot forbear any longer to address one of the Volumes of these Transactions to You, to whom I most willingly profess I am sincerely devoted, and who is known to have obliged the learned World with so many uncommon Discoveries in Nature, and so solidly maintain'd the Power and Usefulness of Experimental Philosophy. And this I do by offering you this Volume, because in it (besides other parcels of not ordinary remark elsewhere interspersed) two of the Twelve Tracts are almost entirely your own; of which the judicious do generally affirm, that though they are draughts written only for your own memory, and have not yet the polishing of your last hand, yet they contain most diving Researches into some of the deepest Recesses of Nature, that ever appear'd in Publick; and have most industriously examin'd the Breath and Fuel of Life: the State of Air, and Water,

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in the various degrees of Rarity and Density, Weight, and Absence, longer or shorter, for the Respiration of Animals; And have left us manifest evidences of the necessary Weight, and other enforcements of Air, to preserve us from Suffocations and Convulsions; And that neither common Liquids can raise their Usual Steams, nor the minutest Insects continue their Motion even whilst they retain life, without the Presence and Help of Air.

And yet I may be asked, what Patronage, what Heroe, or what Genius can give safe guard against the malicious scurrility of many of this Age, who attempt to deface every vertue, and whatsoever is excellent, and particularly that which is most obliging to the Publick? To this discouragement I reply cheerfully, that the malicious and scurrilous are short-lived, and will soon expire in an odious snuff, or will hasten to hide themselves in shame and confusion: But Truth is mighty and will prevail; Wisdome will be justifi'd; Vertue will in good time emerge; Knowledge will abound; Arts will flourish; and Posterity will applaud them, from whom they receive the clearest Light and the best Accommodations.

I am inform'd by such as may well remember the best and worst days of the Famous Lord Bacon; That though he wrote his Advancement of Learning, and his Instauration Magna, and many other elaborate Treatises of Philosophy, in the time of his greatest power; yet his greatest Reputation rebounded first from the most Intelligent Forrainers in many parts of Christendome: It cannot be doubted, but that England had then better knowledge of the absurdities, many troubles and burthens of our Municipal Laws, and Chancery, which lay long and much upon his shoulders; And that he bore the stress of State affairs in almost all King James's days, and in Queen Elizabeth's later days; That he authored the solemn Addresses, and was the Extra-ordinary Pen-man for most Apologies, Deliberations, and gravest Advise's in Parliaments, and otherwise: Here they saw also, How he excelled in the best Theology of that Age, and in the Politest of Civil and Moral Essays: And therefore here they might justly wonder, how a person so publickly immersed in all Civil Interests should find leisure to do any thing at all in Philosophy: And much more justly may we still wonder, how, without any great skill in Chymistry, without much pretence to the Mathematicks or Mechanicks, without Optick Ayds, or other Engins of later Invention, he should so much transcend

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scend the Philosophers, then living, in judicious and clear instructions, in so many useful Observations and Discoveries; I think, I may say beyond the Records of many Ages. Hence, and from all this I would infer, that all Mortals must wait for their just renown post cineres, after their mortality; and that Envy lyes close at the doors, and pursues great merit to the last stages of life.

Sir, As the Greek Poet seth'd in Castor and Pollux for his highest applauses, when he had another concernment in his chief aim; so, that I may not by any Temptation put your Modesty to a blush, I must continue to discourse of the Lord Bacon, Gilbert, des-Cartes, Gassendus, and others the Miracles of modern and revived Philosophy; of the indefatigable industry of some; the ingenious Contrivances of others; and of many their successful performances. And truly 'tis to me very strange, that several of these Excellent persons have so luckily espoused those Hypotheses of Nature in many true particulars, which You have by manifest Experiments evinced and confirm'd; as if by an especial blessing upon their Labors, and for their good Affections towards Man-kind, they had been guided by an Heavenly Ray to divine, what would be the Result from diligent Tryals.

And, since a noyse hath been raised by temerarious Censurers against you, as if you were too indulgent to the old Atomists, I hold myself bound in Justice, to take publick notice of your impartiality, that you were neither led aside on the one hand by the addition to Chymists, to favour their Principles above truth; nor on the other hand, deterr'd by the Heathenish mistakes about Atoms; nor by the Vulgar notions of the Elements, from giving due place to the Corpuscularians (so far as they might have Truth on their sides) even by the Assistance of Chymistry; as you have done most candidly in your Sceptical Chymist, and in your Origine of Forms and Qualities.

And now Sir, this would look more like a neglectful Omission of due Respects, than a just Address, if I should forbear to acknowledge, that you have so coherently deduced, and so conspicuously illustrated the General, and the less Obvious Processes of Nature in her Occult and subtile Influences, Whether Atmospherical, or more remotely Cosmical; Whether Celestiall, Æthereal, or Aereal; Whether Subterraneous or descending; Whether of Air, or any known kind of Water, Liquids, or Menstruous; Spirituous,

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or in some degree *Incrassated* ; their *Hydrostatical* tendency, *Weight*, or *State* ; that it must give abundant satisfaction to future Ages, ease them of much pains, and allow them the more leisure and manifold Assurances for further Processes. I must add, that in the Treatises of Firmness and Fluidity of Cold, and the Thermoscopical Measures of Warmth and Frigidity, of Colours and Light, you have given us good ground for our Rest, and for a fair prospect into the Labyrinths of Nature. Besides, I must take the freedom to ask, Who did ever suspect the Ambient Air of having such a force to consolidate firmness in stubborn and inflexible Bodies, as you have shew'd it to have ? Who suspected, that Air (the purest we can obtain so near the surface of the Earth) should so widely Expand it self when at some liberty ; or should endure such Mechanical Compressions ? That the most Solid Bodies we have amongst us should emit spacious Atmospheres ; and that the parts of our firmest Rocks and Jewels are not in an absolute Rest in their long lasting duration ? What divining Imagination or Conjecture did admit of all these points for sound Philosophy, till you taught us to feel it in our Scales, and to see it with our Eyes ?

But I must not here heap up together your many costly and assiduous Labours : I must stop my Pen, and consider more what your Ears can bear, than what is due to your Merit. Only this I must here avouch, as one amongst a great number of good Witnesses, that many of the most learned Forrainers (to say nothing now of worthy Englishmen) do so highly value all the Treatises you have published, that they do importunately desire, your Desks were forthwith emptied into the publick Light, and carefully rendred into their known Languages.

Sir, all that value true Worth and true Philosophie, are bound to pray for the Recoverie of your Health and Strength, and for your long Life, and perpetual Increase in all Happiness. So does he, who esteems the most useful things in Human Societies, to be Knowledge and Vertue, (combined in you,) and who is

SIR,

Your very Humble and Faithful Servant,
HENR. OLDENBURG *Soc. Reg. Secr.*