

# Robert Boyle





# BIOGRAPHY

Born in Lismore, County Waterford, Ireland 25 January 1627.

As a child, Boyle was fostered to a local family, as were his elder brothers.

After spending over three years at Eton, Robert travelled abroad with a French tutor.

They visited Italy in 1641 and remained in Florence during the winter of that year studying the "paradoxes of the great star-gazer" Galileo Galilei, who was elderly but still living in 1641.



*Emblematic image of a Invisible College*

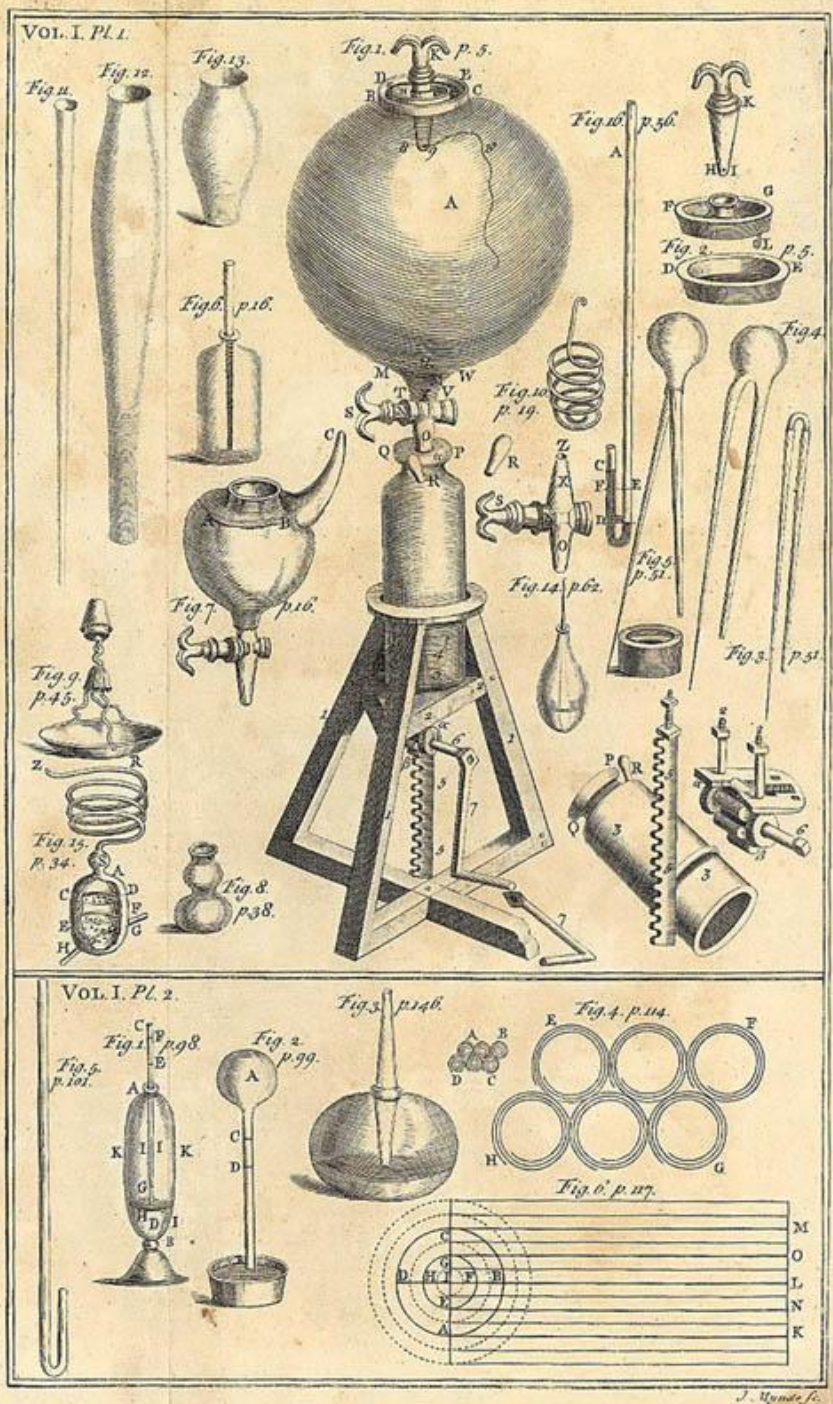
Returned to England from continental Europe in mid-1644 with a keen interest in scientific research.

Took a prominent place in the band of enquirers, known as the "*Invisible College*", who devoted themselves to the cultivation of the "new philosophy".

In 1652 Robert moved to Ireland

In 1654, Boyle left Ireland for Oxford to pursue his work more successfully.





In 1659 he constructed the "Pneumatic Engine", which was Otto von Guericke's air pump with improvements.

*Boyle's 1660*

NEW  
EXPERIMENTS  
PHYSICO-MECHANICAL,

Touching  
The SPRING of the AIR, and its EFFECTS,  
(Made, for the most part, in a New  
Pneumatical Engine)

Written by way of LETTER  
To the Right Honorable CHARLES Lord  
Vicount of DUNGARVAN,  
Eldest Son to the EARL of CORKE.

By the Honorable Robert Boyle Esq;



OXFORD: Printed by H. Hall, Printer to the University,  
for Tho. Robinson. 1662.

*2<sup>nd</sup> Edition*

# Boyle's law

$$PV=k$$

P – the pressure of the gas

V – the volume of the gas

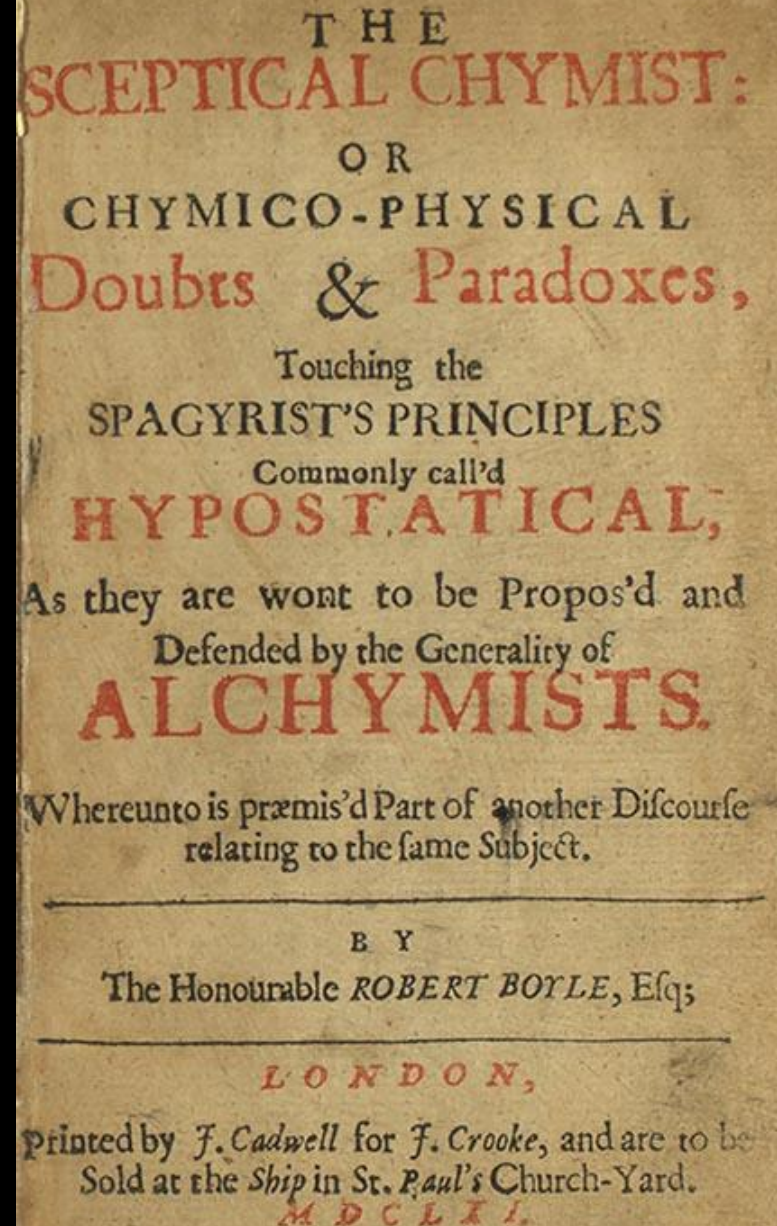
k-constant

*«The absolute pressure exerted by a given mass of an ideal gas is inversely proportional to the volume it occupies if the temperature and amount of gas remain unchanged within a closed system»*

# “The Sceptical Chymist”

In the book Boyle attacks the Aristotelian theory of the four elements (*earth, air, fire, and water*) and also the three principles (salt, sulfur, and mercury) proposed by Paracelsus.

He represents hypothesis that matter consisted of atoms and clusters of atoms in motion and that every phenomenon was the result of collisions of particles in motion.



# Boyle's major discoveries and theories:

*Elements are the indecomposable constituents of material bodies.*

*He designated the technique of detecting mixture's and compound's ingredients, by the term "analysis"*

*There is a distinction between mixtures and compounds.*

*Elements are ultimately composed of particles of various sorts and sizes*

# Theological interests

- ❖ promoted the spread of Christianity in the East
- ❖ contributed liberally to missionary societies
- ❖ supported translating the Bible or portions of it into various languages
- ❖ believed that all human beings, no matter how diverse their physical differences, came from the same source: Adam and Eve
- ❖ Boyle's writings mentioned that for Europeans beauty was not measured so much in color of skin, but in "stature, comely symmetry of the parts of the body, and good features in the face".



# His religious and philosophical writings

## THE Christian Virtuoso :

SHEWING,

That by being addicted to *Experimental Philosophy*, a Man is rather Assisted, than Indispos'd, to be a *Good Christian*.

The First Part.

By T. H. R. B. Fellow of the  
ROYAL SOCIETY.

To which are Subjoin'd,

- I. A Discourse about the Distinction, that represents some Things as Above Reason, but not Contrary to Reason.
- II. The first Chapters of a Discourse, Entitled, Greatness of Mind promoted by Christianity.

By the same AUTHOR.

In the SAVOY:

Printed by Edw. Jones, for John Taylor at the Ship in St. Paul's Church-yard, 1690.

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Num. 112.

## PHILOSOPHICAL TRANSACTIONS.

Febru. 24. 1691.

### The CONTENTS.

An Experimental Discourse of Quicksilver growing hot with Gold; by B. R. Some Observations on several Passages of the two last Months Translations; relating to June, till now un-observed, Qualities in the Air; to the Mixing and Fermenting of Liquors in vacuo; to the History of Birds; the Anatomy of the Trunks of Vegetables; Boreas, &c. Some Experiments touching Animals; others, about producing Ice free from bubbles in vacuo, and giving by means of the Air-pump certain properties to things which they never had before; others, touching Gun powder, and they may of delivering the quantity of Air contained therein, together with its degree of Compression in that body, &c. An Account of some Books; I. COURS D'ARCHITECTURE, Premiere partie; par M. Francois Blondel, II. Dr. Henry Moore's Remarks upon two late Ingenious Treatises, &c. AN INDEX for the Tracts of this whole Year.

Of the Inefficiency of Quicksilver with Gold, generally imported by B. R.

The Introduction of the Publisher.

Though the following discourse was by the Author of it made part of a short Examen of the supposed Sympathy between Gold and Quicksilver, (which it self belongs to another Treatise) yet the worthiness of the subject, and the great curiosity that is observed among many Virtuosi, (not only Chymists, but others,) about Mercurial Preparations and Experiment, made me think I

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might

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might do them an acceptable piece of service, if I could prevail with the Author to sever them from the papers, whereto he had annex'd them, (but to which they seem'd not absolutely necessary) though upon the conditions he judg'd requisite to insist on.

And since I venture to impart before the time these things unto the Curious, I hope and desire, they will be frequitable as to indempne me to the Author, and not fruitlessly endeavour to put a period, that has already given so many proofs of his propensity to gratifie Ingenious men, upon making unreasonable answers to any Verbal or Epistolary Questions about things, wherein some consideration, that he thinks are not to be dispensed with by him, do as yet enjoy him silence.

Now, to gratifie the Curious amongst Strangers, as well as those of our own Nation, the Publisher was not unwilling to give this discourse in Latin, as the Author hath been pleas'd to impart it in English.

Follows the Discourse it self.

Of Mercury growing hot with Gold; Communicated by B. R.

— **B** ut that what I have hitherto said, may not be drawn to the disparagement or discouragement of those Spagyrics that possess or aspire to the nobler streams of Gold and Mercury, I will need you to take notice, that what I have objected against the supposed Sympathy of Gold and Quicksilver, is spoken only of common Mercury, that being it whose Sympathy with Gold is wont to be celebrated. And though perhaps, a good part of the things I have alledg'd will be found applicable even to true running Mercuries; yet I would not be thought to deny, that there may be

De Mercurio cum Auro incalescente, Diatriba B. R.

— **V** Erum enoveri ne que hactenus deservit et tergastantur, ac si laudat amovisque veris illis Spagyricis nemere velimus, qui Nihilivra Auri & Argenti Fusi arcana possident amovendo, monentur et nihil at advertat, ne quid contra suspitionem Auri & Mercurii sympathiam object, de Vulgari duntaxat Mercurio dictum velle, idem illi sit, inquam cum Auro sympathia celebrari soverit. Ea quomodo forte magna a me diltatione par, impudens experientia, ad nostrum etiam Mercurium correntem extensis posita non tanto rectore Lullium velum, argere ne fieri Argentum verum posse