

**An account of the life and writings of Herman Boerhaave, doctor of philosophy and medicine; professor of the theory, and practice of physic ... in the university of Leyden ... / In two parts. With an appendix. [Anon].**

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**Publication/Creation**

London : H. Lintot, 1743.

**Persistent URL**

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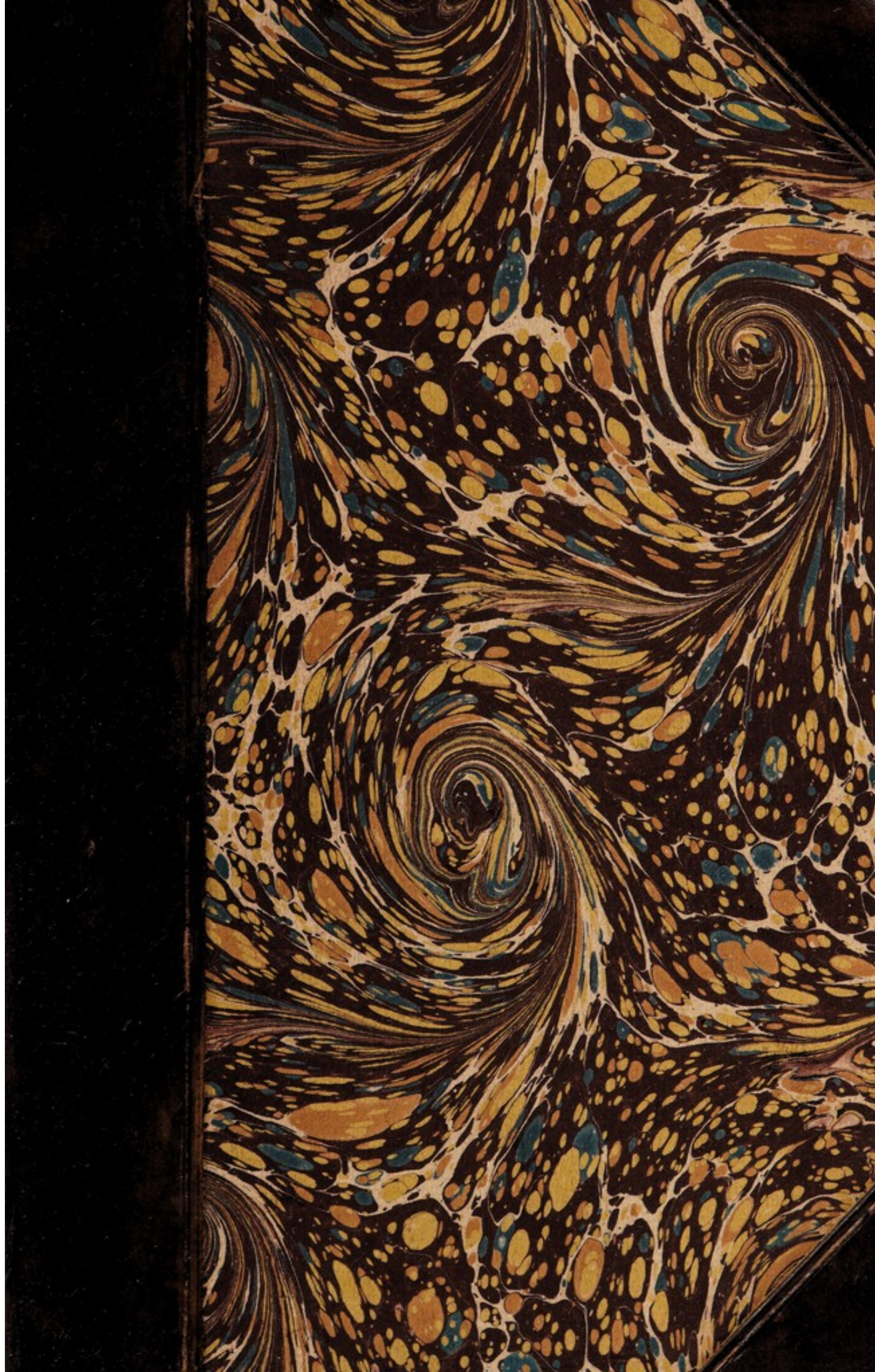
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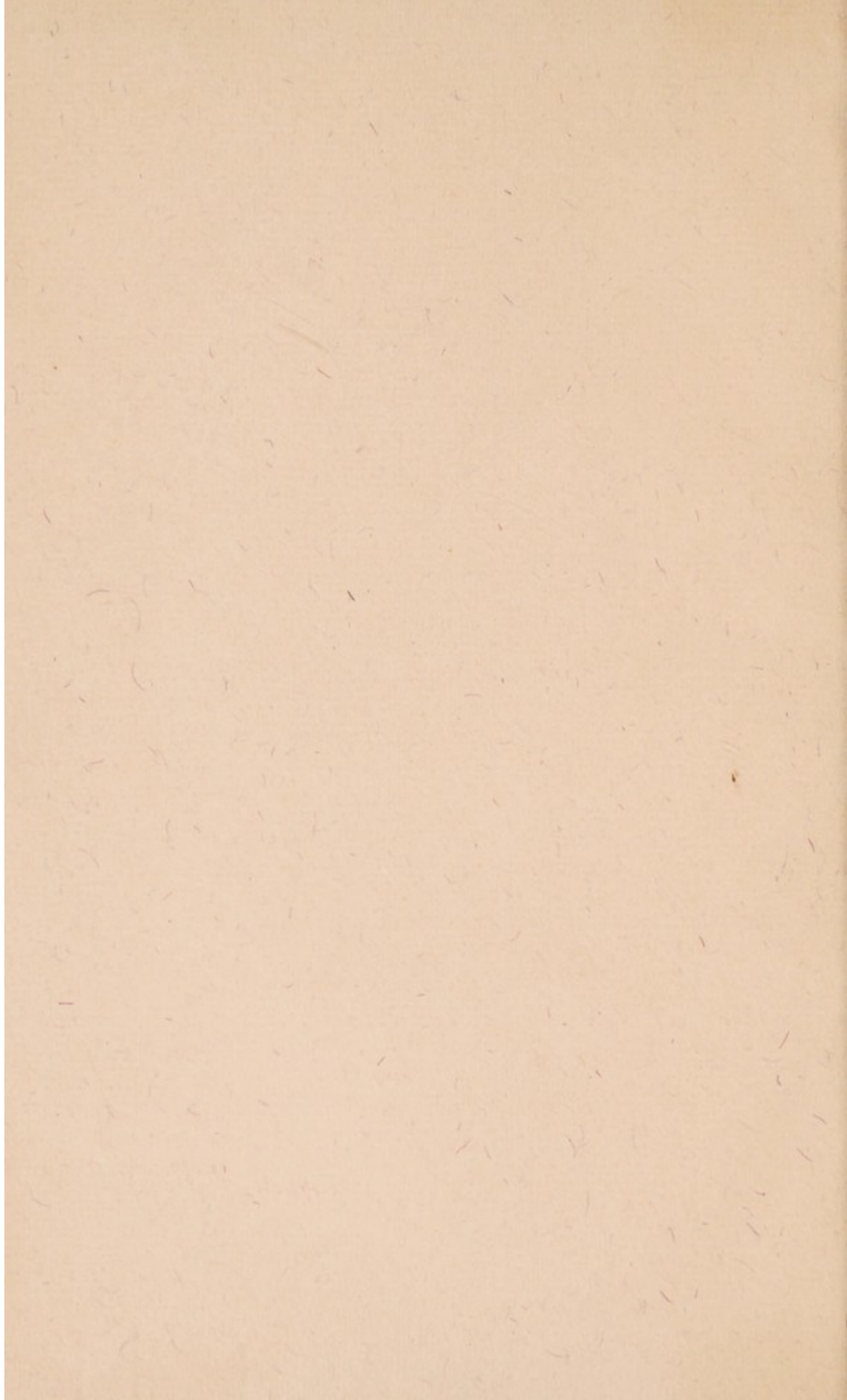


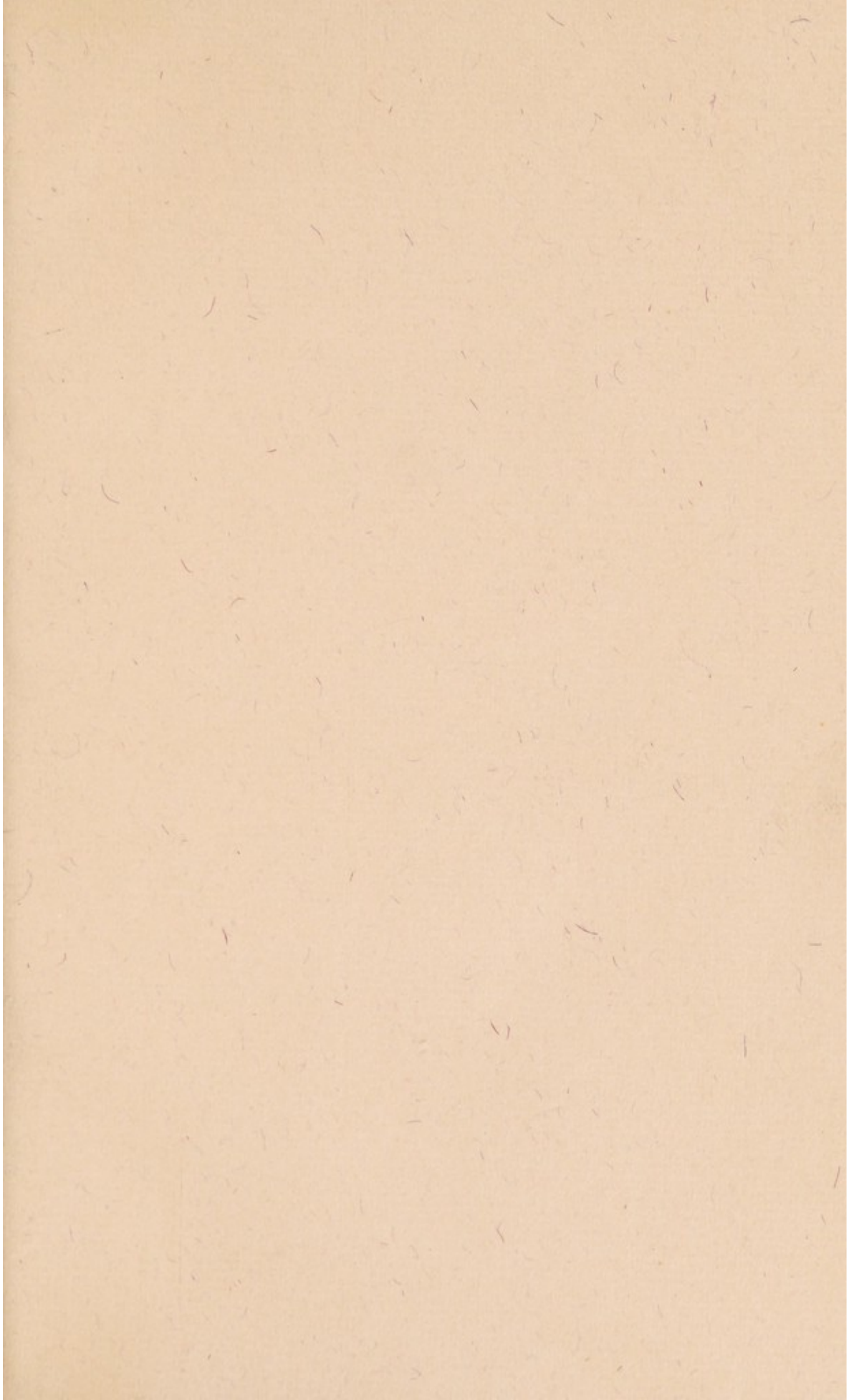
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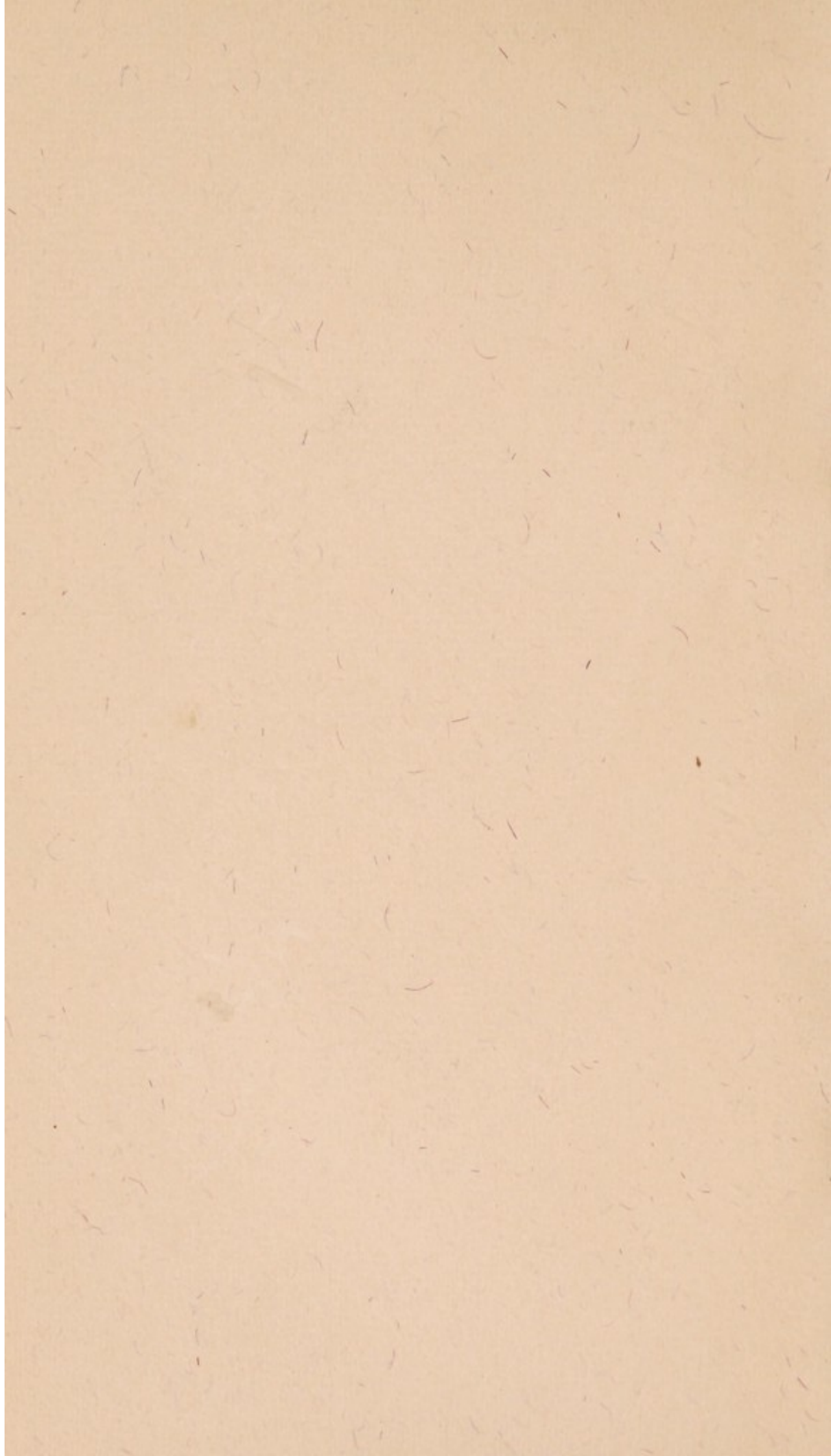


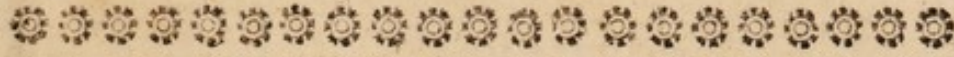
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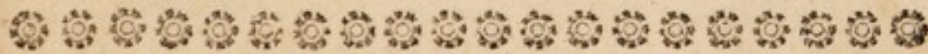
ACCOUNT

OF THE

L I F E

O F

Dr *H. Boerhaave.*











*Hippocrati Batavo — — — qualem  
Optabunt semper Secula, nullas ferents.  
T. Hoog. in Epiced. ad finem Orat. Schult.*

*J. Hulett Sculp.*

12/12  
A N  
A C C O U N T  
O F T H E  
L I F E  
A N D  
W R I T I N G S  
O F

*Herman Boerhaave,*

DOCTOR of Philosophy and Medicine;  
PROFESSOR of the Theory, and Practice  
of Physic; and also of Botany, and Chemistry  
in the UNIVERSITY of *L E Y D E N*;  
PRESIDENT of the CHIRURGICAL COL-  
LEGE in that CITY;  
FELLOW of the ROYAL SOCIETY in  
*L O N D O N*, and of the ROYAL ACA-  
DEMY at *P A R I S*.

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I N T W O P A R T S.

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W I T H A N  
A P P E N D I X.

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L O N D O N:  
Printed for HENRY LINTOT,  
M.DCC.XLIII.

A N  
ACCOUNT

OF THE  
E I F E

AND  
W R I T I N G S

Henry Bowdler

Doctor of Philosophy and Medicine  
Professor of the Theory and Practice  
of Physic; and also of Botany, and Chemistry  
in the University of the City of London  
President of the College of Physicians  
Fellow of the Royal Society  
LONDON, and of the Royal Academy  
of Sciences



IN TWO PARTS

WITH AN

A P P E N D I X

L O N D O N

Printed for Henry Lister,

M.D.C.C.C.

---

T H E

P R E F A C E.

**T**H E publication of the following sheets, written above two years ago, was at first delayed by the loss of some part of the manuscript, when near half of it had been printed; other accidents, equally unforeseen, prevented their appearance till now, notwithstanding all but two sheets have been worked off this twelvemonth; thus so long an interval escaped, which might otherwise have been improved in enlarging, or rather in embellishing the Narration.

Since the predominant taste of the inquisitive among us inclines so much toward history, it seems strange, that four years

*should elapse from the death of Dr BOERHAAVE, e'er any separate Piece on his Life and Writings appear'd in the language of that people, from whom, during a length of time, he received singular encouragement, whilst they in return have been proportionably benefited by his skill, and precepts.*

*It was not without reason expected, that the veneration many in neighbouring countries retain'd for his memory, would long before have been manifested in a distinct volume; especially, since his funeral oration by the learned and reverend professor SCHULTENS has supplied materials for one.*

*Extracts indeed from this oration occur in the Monthly Miscellanies of 1739; particularly in Journal des SçAVANS, Juin; with some additions in Nouvelle Bibliotheque, Janvier, tom. 2, in the Gentleman's Magazine of January, February, and March, in the same year; and in 1741, an Eloge on Mr BOERHAAVE was publish'd in the Bibliotheque Raisonnée for the three last months, p. 338.*

*Nevertheless the Enlargements in the following pages may justify this undertaking,*

*bow*

how difficult soever it be to do ample justice to the subject: In our latter part they abound; and in the former, the substance of two or three excellent dissertations is introduced not impertinently, considering that it thence appears, how far the Panegyric so liberally bestowed upon others in BOERHAAVE'S Declamations, &c. was truly applicable to Himself, and that the real character, and sentiments of our author are thus represented together; Sentiments no less instructive, and a character not less amiable, perhaps, than any of modern date, were not the weight of the one, and the lustre of the other diminished by the medium, which now transmits them to the public.

Yet, seeing men of more leisure and abilities have hitherto declined giving an account of a LIFE so exemplary, and of WRITINGS so valuable, large enough to satisfy the commendable curiosity of the solicitous about them; a fuller, tho' artless narrative can hardly prove unacceptable, containing particulars meriting the inspection of Philosophers and Divines, as well as Physicians: Besides, a genuine representation of the gradual advances of a worthy mind,  
 Strug-



*struggling in its very youth, and under the lowest circumstances, to promote the welfare of mankind equally with its own, must, in some degree, interest every Citizen of the world, every man of generous principles.*

*Should any particulars however be thought too trivial, even with an indulgence to a personal acquaintance, may they not be tolerated in some cases, as collateral evidence of historical memoirs? The memoirs concerning himself found in his library after his decease, and extracts from some letters, are annext as further authorities: The abstracts of those memoirs are distinguishable in the account of his Life by the usual mark of quotations join'd with references to their original in the appendix, where the words inserted by Mr SCHULTENS, or for connection-sake, are in Italics.*

*The appendix is partly supplemental to BOERHAAVE'S Opuscula, mentioned p. 163; for, to compleat them, his last paper on Mercury, and Biographical Prefaces, as well as that to the Aphrodisiacus, should be included, with the whole of his Thesis, for the scientific part of it only is republished here;*

The P R E F A C E.

here ; But most of those other pieces may easily be procured with the books, to which they are prefixed, and this appendix is rather too large already.

In our catalogue of BOERHAAVE'S *Writings* no notice is taken of a letter, concerning which the following mention is made in the catalogue of the Bodleian library under the name of HERMAN BOERHAAVE, "Lettre sur l'Impossibilité des Operations Sympathiques. A Rotterdam 1697." \* The asterisk affixt denotes, that this letter is not now to be found in that library ; but may it not be reasonably suspected, there never was such an one? And that the above is a misrepresentation of this title to a pamphlet in 12mo.

"Lettre A. Mr B\*\*\* sur l'Impossibilité des Operations Sympathiq; par M. L\*\*\* Docteur en Medicine. A Rotterd. 1697?"

How such a mistake could happen, is not so much our business to enquire, as it is to plead for the excuse of our own inaccuracies; most of which, especially defects in the pointings, were owing to a distance from the press, that prevented a Revise of the greater part of the sheets; but this we hope, is the more pardonable

*able considering the judicious observations; they contain on Things, and Authors; observations made by a person of such copious reading, and clear discernment claim at least the regard of Students; who will probably be induced to unite a due reverence for the ancients with a just esteem for the moderns, upon gaining hence a previous acquaintance with their respective merits; while those of the Faculty, if any such there are, strangers to his scattered dissertations here abstracted, may from this view of their contents be excited to peruse the originals, which will abundantly recompence their labour.*

*But waving all apologies for the disadvantageous representation of any of our author's works in so narrow a compass, let it suffice, that there are no willful misrepresentations; and therefore better information, or candid animadversions from any quarter, will be thankfully accepted by a writer, who conceals his name, for the sake of learning with less difficulty the undisguised sentiments of the reader; and who, whatever be the fate of this performance, will enjoy the satisfaction of having furnished*

*a larger stock of materials, with which some exquisite artist may hereafter erect a Monument to our Professor no less permanent, if possible, than his own Productions.*



E H T

~~THE P R E F A C E~~  
~~Some expeditious signs may be observed~~  
THE  
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*A N Account of Dr BOERHAAVE's Life.*

SECT. I.

- Of his Birth and Education.*  
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PART II.

*An Account of his Writings.*

SECT. I.

- Abstracts of two Orations, the one relating to Theory in general, the other, to the Practice of Physic.*  
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**B**OERHAAVII *Disputatio medica  
inauguralis nonnihil contracta.*

———— *Commentariolus de Familia, Studiis,  
Vitæ cursu, &c. propria Manu  
conscriptus.*

———— *Ex Epistolis nondum editis Excerpta.  
Operum genuinorum, Spuriorum, necnon  
editionum post obitum cum titulis prælec-  
tionum publicarum CATALOGUS,  
Indici simul hujus Opusculi inserviens.*

---

## E R R A T A.

**P**A G E 4. line 11. and Mark, *read* as was lately Mark;  
p. 6, l. penult, r. cataracts; p. 8, l. ult, r. orat schul; p.  
11, l. 16, after or r. that They should be; p. 14, l. 20, r.  
dissections; p. 23, l. 9, r. persuaded, l. ult, for vos, r. suos;  
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terrupted succession; p. 28, l. 14, after city r. of Leyden.  
p. 30, l. 22, for is r. seems; p. 32, l. 2, for lead. r. led p.  
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as, r. to; p. 53, l. 11, r. aptitude; p. 55, l. 19, *erase* as; p. 71,  
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HIN; p. 126, antepen, for not, r. by no means; p. 140, l.  
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T H E  
L I F E  
O F  
Dr H. BOERHAAVE.

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PART. I. SECT. I.

---

*Of his Birth and Education.*



W O of the principal inducements to record the lives of Those, who by their distinguish'd merit have done honour to mankind, are, to reflect that honour on their memory, and to excite posterity to a noble emulation; Biography is not more laudable in the former of these respects, than useful in the latter, when conversant about such persons, as were blest with extraordinary endowments, and studiously exerted them for the benefit of society.

From history it appears, that ever since the rise of the Athenian common wealth,  
the



the sciences have flourished most under the freer governments, especially in Republics; witness the United Provinces; yet among the many renowned for their learning and labours, which that country has produced from ERASMUS to the present time, it may be difficult to mention one more universally celebrated than Dr H. BOERHAAVE, late Professor of physic in the university of Leyden.

The gratitude of ancient times dignified even the native place, however obscure, of men famed for science; would ARPINUM have remained memorable to this day, had not CICERO been born there? and may not VOORHOUT likewise, a small village in Holland, about two miles distant from the Harlem-gate of the city of Leyden, be great in after ages by the birth of a person, no less deservedly eminent in a most useful profession during many years of his Life; no less serviceable to the world by his remains after death; which will probably secure to him a future fame not inferior to that illustrious Philosopher's. altho' he never seem'd alike anxious about it.

He was born in the year 1668, on the last of December, about one in the morning.

His father, the Reverend Mr JAMES Ap. § 1.  
BOËRHAAVE, minister of the church in that village, had “ a good acquaintance with  
“ the Hebrew as well as Greek and Latin  
“ languages, but excelled in his knowlege of  
“ history ; and was no less remarkable for  
“ frankness and candour in general, than  
“ for the prudence of his œconomy, and  
“ a tender exemplary behaviour to his nu-  
“ merous offspring ;” his first wife, the mother of HERMAN, was HAGAR (daughter of HRRMAN DAELDER of Amsterdam, a very ingenious artificer, and trader in instruments for navigation, particularly the mariners compass;) her genius and delight in physic was such; that she became really skilled in it : But whatever may be ascrib’d to the inheritance of that genius, her son’s education owed little to her influence ; for she died when he was but five years old.

To restore a mother to seven children, his father the year ensuing married Mrs DU BOIS, a minister’s daughter in Leyden, who

Ap. § 2. answered his intention effectually, “ by  
 “ such obliging impartial conduct, that her  
 “ children-in-law esteem’d her as their own  
 “ mother.”

By the former wife were six daughters, beside HERMAN the only son, and by the latter two sons, and four daughters; JAMES the elder of these sons, who was design’d for physick, is an eminent divine at Leyden, and MARK the younger, at Breda.

But HERMAN, who by descent seems to have been equally related to learning and ingenuity, divinity and physick, was instead of his brother JAMES intended by their father for divinity; with this view  
 “ he himself initiated him in grammar,  
 “ according to the method of VOSSIUS,  
 “ and proceeded with him from the Collo-  
 Ap. § 3. quies of ERASMUS to TERENCE, the  
 “ Greek testament, and universal history,  
 “ particularly CHRISTIANI MATTHIÆ  
 “ Theatrum;” and with such success, that  
 “ at eleven our youth was well versed in  
 “ these, expert in the rules of the Latin and  
 “ Greek grammar, ready at translating  
 “ and

“ and writing Latin, and not ignorant of  
 “ etymological learning.”

Due regard was had at proper intervals to invigorate the body and divert the mind, not by trifling recreations, but by the instructive, as well as salutary exercise of horticulture, which contributed not a little to his natural robustness; by such laborious interludes at a mature age, he prevented those hypocondriacal disorders, that frequently attend too sedentary a state, to remedy which, some imprudently have recourse to spirituous liquors instead of exercise; and, decoy'd by momentary relief, impair their constitutions, and shorten their days. Although the pleasure and advantage of that amusement rendered it his favourite afterwards, he was necessitated to discontinue it about the twelfth year of his age, when he was unhappily afflicted “ with a malign- Ap. § 4  
 “ nant ulcer in his left thigh, eluding the  
 “ art of surgery, and occasioning such ex-  
 “ cessive pain,” as greatly interrupted his studies for five years together; but at length, after all the vain efforts of physicians,

\* he himself, “ by fomenting it continual-  
 “ ly with salt and urine, effected a cure,  
 “ and thereupon conceived his first thoughts  
 “ of studying phyfic.”

In 1682, being now fourteen, he was sent to Leyden for the benefit of his health and learning, and put under Mr WYN-SCHOTAN, then master of the publick school, who, upon examination, placed him in the fourth form : Such were his abilities and application, that at the end of six months, obtaining the usual premium, he ascended into the fifth; and at the expiration of the year mounted to the sixth and highest class, from whence 'tis customary after six months to be removed to the university; but at this juncture the calamitous death of his father, leaving a wife and nine children (of which this, not sixteen, was the eldest) with but a slender provision, had like to have frustrated his scheme; and, though he was rewarded  
 with

\* The surgeons in Holland are generally barber-surgeons, who perform the rougher operations under the direction of physicians; lithotomy, couching of catarachs, &c. some physicians make a part of their province *there*, as some of ours do midwifry.

with all the prizes attainable at school, yet on account of his circumstances, and remaining indisposition, he chose “to continue there half a year longer.” Ap. § 5.

Upon his admission at sixteen into the university, he was advantageously distinguished by a friend of his father’s, Mr TRIGLAND, one of the professors of divinity, who building the highest expectations on the quickness of his apprehension, and the virtues of his mind, procured him “the generous patronage of  
 “ Mr DANIEL VAN ALPHEN, burgo-  
 “ mester of Leyden; by the advice of these Ap. § 6.  
 “ gentlemen he attended SENGUERD’s lec-  
 “ tures in logic, the use of the globes,  
 “ natural philosophy, metaphysics, and  
 “ ethics;” all which he imbibed with such facility and success, as to maintain disputations five times under SENGUERD by this professor’s special desire: He likewise attended the learned JACOB GRONOVIVS on Greek and Latin authors, (whose stile he has been thought to imitate in some of his earliest orations;) RYCHIUS on Latin classics, rhetoric, chronology, and geography;

TRIGLAND and SCAAF, on the Hebrew and Chaldee languages; all to understand the sacred writings in their originals; these Ap. § 7. he laboured incessantly, “ ’till perceiving  
 “ the necessity of mathematics,” and applying a little to them in 1687, he found this study so entertaining, that, not content with compassing soon geometry and trigonometry, he proceeded to algebra under VOLDER, in the beginning of 1689, and with a genius adequate to abstruse speculations, exprest “ the highest satisfaction  
 “ in the geometric synthesis of the ancients,  
 “ as improving the power of the understanding, and in the analysis of the moderns, as adapted to making new discoveries.” In this year, the Twenty first of his age, he gave a specimen of his erudition and eloquence in an academic oration on this topic, “ that \* the doctrine of EPICURUS concerning THE CHIEF GOOD  
 “ was well understood by CICERO ;” upon which he received, by way of premium, the

\* *Oratione academica probabat bene intellectam a CICERONE, & confutatam sententiam EPICURI de summo bono. Orat. Schul. p. 14.*

the golden \* medal which usually accompanies a general applause merited by any such probationary exercise.

In 1690, he took a degree in philosophy. The subject of his thesis was, † “the distinct natures of the mind and body.” In this performance, by a strength of argumentation much superior to his years, he subverted the systems of EPICURUS, HOBBS and SPINOSA. The peculiar esteem signified hereupon by VOLDER his promoter, excited the envy of some of his contemporaries,

\* Whoever proposes to give a Latin oration in that university, is required first to address the rector magnificus, (nearly analogous to the chancellor of our university, excepting that there the election out of the professors only is annual,) who with the senators inform the curators of it, and these appoint a day for the oration; then he waits on each of the curators, and on the chief magistrate and sheriffs of the city to desire their presence. If the oration gives general satisfaction to the curators, their secretary is sent to his habitation to thank him in their name, and to acquaint him, that he shall have the present of a golden medal, which has on the front a PALLAS in Relief, on the reverse an inscription, (relating the occasion and name of the person) in letters not stamped but engraved. It is worth 150 guilders, somewhat above 13 guineas.

† Disputationem inauguralem habuit de distinctione mentis a corpore.



raries; nevertheless the fame of his literature and piety was daily increasing.

Having laid this solid foundation, he proceeded to raise the superstructure in divinity under the instruction of those three professors, TRIGLAND, SPANHEIM and MARK; the first “gave lectures on Hebrew antiquities; the second on ecclesiastical history,” under whom BOERHAVE held a theological disputation in public.

This particular account of his education was requisite, since as few have ever been possess'd of a knowledge so extensive, it may be useful to learn by what helps it was acquired.

## SECT. II.

*Of his Studies, Profession and Promotion.*

**H**E was now become such a master of the Greek, Hebrew, and Chaldee languages, that, rejecting translations, he convers'd only with originals; “and  
“join'd with the abovementioned course  
“of

“ of study, a daily perusal of the primitive Ap. § 9.  
“ fathers, beginning from CLEMENS RO-  
“ MANUS, he descended in chronological  
“ order, and made them his interpreters of  
“ the new testament, highly reverencing  
“ the simplicity and purity of their doc-  
“ trine, the integrity of their lives, and  
“ the sanctity of their discipline. On the  
“ contrary, descending to their successors,  
“ he lamented the sufferings of christiani-  
“ ty from the sophistication of divine  
“ truths by the subtlety of the schoolmen ;  
“ apprehending it most absurd, that in-  
“ terpretations of the sacred writings should  
“ be sought from sects of sophists, or  
“ wrested to quadrate with the metaphysi-  
“ cal notions of PLATO, ARISTOTLE, A-  
“ QUINAS, SCOTUS, or even of DESCAR-  
“ TES, whose philosophy was then in fa-  
“ shion ; to this he imputed the animosities  
“ and dire contentions, too frequent among  
“ men of a scholastic genius, and the bane of  
“ religious peace : But what was still worse,  
“ though all allowed, where the scrip-  
“ tures speak in a manner condescending  
“ to human frailty, they should be under-  
“ stood

“ stood in a sense worthy our notions of  
 “ the deity; yet this sense was by every  
 “ one explained just according to his pecu-  
 “ liar metaphysical tenets: Upon these  
 “ considerations he was the more shocked  
 “ at the prevalent custom with the sect  
 “ in power, of making its metaphysical  
 “ doctrines, instead of the sacred records,  
 “ the standard for orthodoxy; hence such  
 “ a variety of opinions about the plainest  
 “ doctrine.” Can any man duly weigh  
 these reflections from a person so young, in  
 a science so arduous, without entertaining  
 an exalted conception of the strength of his  
 judgment, and sincerity of his heart? how  
 early a victory had he gained over those  
 prejudices and partialities, wherewith the  
 best education is tinctured, and which  
 the wisest seldom eradicate, ’till ripe in  
 years?

Notwithstanding he was thus qualified  
 for entering on the profession, which ac-  
 cording to his father’s intention he had  
 hitherto solely in view, and that his patri-  
 mony was by this time almost exhausted;  
 such was his modest diffidence, that fear-  
 ing

ing to rush immaturity into so sacred a function, he attempted rather “by teaching Ap. § 10. “mathematics,” to defray the expence attending the farther prosecution of his theological studies; by which undertaking, he not only increased his reputation, but (what laid the foundation of his future fortune,) was introduced to an intimate friendship with that illustrious magistrate JOHN VAN DEN BERG, burgomaster of Leyden, by whom he was recommended to the curators, to compare the Vossian manuscripts (purchased in England for the publick library at Leyden) with the catalogue of sale; which he executed with such accuracy, as to procure him the esteem of that venerable body, and to ingratiate himself in so particular a manner with Mr VAN DEN BERG, that this gentleman became ever after sollicitous for his advancement; and observing with what incredible expedition our young divine dispatched whatever he applied to, persuaded him, for his greater security, to join the study of physick to philosophy and theology; a precedent not to be urged by those, who exercise both functions,

functions, without discovering abilities that capacitate them to excel in either.

In complaisance he thought as a relaxation only from divinity, to have dipt into physic, being duly prepared for it by his acquaintance with the learned languages, mathematics, and natural philosophy. But his natural and irresistible propensity soon prevailed with him to make a business of what he first proposed as an amusement; and his eagerness increasing with his advances, he resolved to take a degree in physic before his ordination.

Ap. § 11. The study of medicine commencing with that of anatomy, he diligently “perused VESALIUS, FALLOPIUS, and BARTHOLIN, often times dissecting brutes alive with his own hand, and attending the public dissections of professor NUCK;” nay the very slaughter-houses did not escape him, wherein he confess’d many useful observations had occurred to him: So far was he from yielding an implicate faith to authority, or from declining the irksome, but profitable labour of dissecting and exploring bodies with his own hands and eyes, alike

alike qualified with patience to observe, and fidelity to deliver the dictates of nature.

Thus grounded, he next applied himself to the fathers of physic, beginning with HIPPOCRATES, and in their chronological order read carefully all the Greek, and ancient Latin physicians: But soon finding that the later writers to the middle Ap. § 12. of the fifth century, “were almost wholly  
 “indebted to that prince of physicians for  
 “whatever was valuable in them, he resumed HIPPOCRATES, to whom alone in  
 “this faculty he devoted himself for some  
 “time, making excerpts, and digesting them  
 “in such a manner,” as to render those inestimable remains of antiquity quite familiar to him. Afterwards, with less difficulty, he became acquainted with the most authentic modern authors, and singled out that second HIPPOCRATES SYDENHAM, whom after frequent repetition, and always with additional satisfaction, he usually stiled the Immortal SYDENHAM.

Having advanced thus far, chemistry, the key of nature, which discloses her mysterious

Orat.

*Boerb.*

1729.

p. 29.

Ap. § 13.

sterious recesses, so captivated him, that he sometimes spent days and nights successively in the study, and processes of this art: It luckily happened about the same time he had contracted an intimacy with Mr STAM, an eminent chemist then at Leyden. As it is very uncommon among writers to publish the whole of their knowledge on any subject, and especially in chemistry, besides that many, who are unwilling to load the world with books, are greater adepts than others, who have printed chemical treatises with pompous titles; great is the advantage, which a skilful and ingenious operator, who neither conceals any material part of his knowledge, nor dissembles his ignorance, may afford a student in this branch of philosophy; and perhaps much greater, than in years he could obtain from Books, and his own labours; the sense of an obligation of this nature produced as advantageous effects to Mr STAM's son an apothecary, who was always particularly favoured by BOERHAAVE.

In Botany, “ by the help of the Flores  
 “ Floræ Hermannianæ (for he never attend- Ap. § 14.  
 “ ed professor HERMAN’s lectures”) he made  
 a considerable proficiency ; not contented  
 with inspecting the plants in the physic gar-  
 den, he sought others with fatigue in fields,  
 rivers, &c. and sometimes with danger  
 in almost inaccessible places, thoroughly  
 examining those he found, and comparing  
 them with the delineations of authors.

Thus various was his knowledge, and  
 not less profound ; for instead of dabbling  
 in the rivulets of literature only, in all the  
 parts of science that engaged him, it ap-  
 pears he had immediate recourse to the  
 fountain, and there was not to be satiated  
 with moderate draughts ; by this diver-  
 sity of subjects his mind was enlarged,  
 and exercising it self on a multiplicity of  
 ideas, became better acquainted with the  
 relations of things. And we shall see here-  
 after that his diligence in quest of truths  
 remaining to be discovered, was not infe-  
 rior to that he now employed in *attending*  
 earnestly to what was already revealed ;  
 strict attention itself greatly contributes to  
 C further



further discoveries, amplifying it's object like a microscope it exhibits to view what escapes the sight of a less careful observer. Moreover the genius of discussing and deciding were happily united in him, and he had the faculty of coming at truth in his enquiries the shortest way, avoiding fruitless digressions; in a word, his capacity was equalled by nothing but his industry; no time passed unimproved, but continually adding one branch of science, nay one science to another, he proceeded to examine systems by experiments, and from these to frame new systems; he gained all the light he could from the observations of others, but trusted to his own.

All this progress in physic hitherto was (as has happened to several who have excelled) without any assistance from lectures, Ap. § 11. except those mentioned in anatomy, and a few by professor DRELINCURT on the theory: But, what is more surprizing, he was so far from declining the priesthood, that not less mindfull of the province allotted him by his father, amidst mathematical, philosophical, anatomical, chemical  
and

and medical researches, he still earnestly  
 pursued divinity, intending before he was  
 initiated in that profession to have delivered Ap. § 15.  
 an oration on the following subject, \* “ why  
 “ so many converts to christianity were  
 “ made formerly by illiterate teachers, and  
 “ so few are made by the learned of the  
 “ present age.”

But in pursuance of his plan he went P. 14.  
 first to the university of Harderwick in  
 Gelderland, and in July 1693 was created  
 there doctor of physic. An abstract is  
 given of the Thesis he then published in  
 our appendix, from which it may ap-  
 pear, how much superior it was to the  
 common juvenile performances on such oc-  
 casions.

As soon as he returned to Leyden, full of  
 his design of engaging directly in the mini-  
 stry, he found an invincible obstruction to  
 the execution of it. In the passage boat  
 some discourse was accidentally started a-  
 bout the doctrine of SPINOSA as subversive

C 2

of

\* Cur olim ab indoctis tam numerosi, hodie à do-  
 ctissimis tam pauci Christiani sunt facti.

of all religion; one of the passengers, who exerted himself most, opposed to this philosopher's pretended mathematical demonstrations only the loud invectives of a blind zeal; whereupon BOERHAAVE, who was always an enemy to triflers, could no longer refrain from asking him calmly, whether he had ever inspected the works of the author he decryed; the clamorous orator was at once struck dumb, and fired with silent resentment; another, who had not yet interposed, finding with regret the controversy dropt upon this question, whispered the person next him to learn BOERHAAVE's name, takes it down in his pocket book, and as soon as arrived at Leyden made it his business to propagate the malicious falsehood every where, that BOERHAAVE was become a Spinofist. What an instance this of the violent propensity of mankind to detraction? how monstrous their credulity who countenanced this calumny against the very man, who had so lately in his philosophical disputation entirely confuted SPINOSA, with the whole system of atheism? Yet so far was this or any other considera-

tion

tion from undeceiving the majority, so great were the art and influence of the detractors, that perceiving how generally those suspicions and averfions had obtained, and being now alike qualified for pre-feribing and preaching, he judged it imprudent to rifque the refusal of a licence for the latter, when he had fo fair a profpect of rifing by the former in a fphere of life lefs obnoxious to caprice; upon finding his ftedfaft friends, particularly *Messieurs VAN DEN BERG, ALPHEN* and *TRIGLAND* unanimous in this opinion, he immediately proceeded to revife thofe branches of medicine, he had already cultivated, particularly chemistry, and neglecting no opportunity of improving himfelf, directed his chief care and labour towards attaining the utmoft fagacity in the method of *HIPPOCRATES*, that is, by obfervation and enquiry.

For now he joined practice with reading, and altho' a man thus accomplished might be fupposed to have met with fuitable encouragement, yet he had the mortification to fee many lefs deferving fall into greater

business; for slow commonly is the advancement of those, who rise only by real worth; nevertheless tho' his acquisitions were so small, and circumstances so narrow, he undauntedly persisted in the pursuit of knowledge with this laudable resolution, that if ever prosperity was his portion, it should be the result, not of little arts or disingenuous solicitations, but of solid learning, and intrinsic merit: A strong confirmation of which happened during this situation, when he was more than once intreated by a first favourite of King WILLIAM's to settle at the Hague; notwithstanding great terms were proposed, and greater promises made to induce him, he constantly declined it: Aspiring more after knowledge, than preferment, he was content in prosecuting the former with the possession of liberty, equally remote from the interruption of a crowd, and the intrigues of a court: His custom after visiting patients was to retire to his study, or laboratory (which well furnished is an abstract of nature it self) making an exact scrutiny into all the branches of physic;

to

Orat.  
*Boerb.*  
1729.  
p. 11.

to teach mathematics; to read the scriptures, and those \* authors who treat of a certain method of loving God.

In this course he continued to the year 1701, when by the importunity of his friends above-mentioned (for his modesty made him at the first oppose the motion) he was persuaded on the death of Professor DRELINCURT to take the office of lecturer upon the institutes of physic; whereupon he delivered an oration the 18th of May, N. S. the subject of which was a recommendation of the study of HIPPOCRATES; apprehending that either thro' indolence or arrogance this founder of physic had been shamefully neglected by those, whose authority was likely to have too great weight with the students of medicine; he therein represents “ the office and sects of physicians, the origin  
“ of the art among the Babylonians and  
“ Chaldeans, the state of it among the  
C 4 “ Egyptians

\* Et auctores qui profitentur docere rationem certam amandi Deum. Such as BOYLE on Seraphic Love, &c. Vide BOERH. *Dissertat. de Chemia uos errores expurgante*, p. 13.

“ Egyptians and Grecians, the original con-  
 “ junction of theory with practice, the abuse  
 “ of the former by making speculation  
 “ supersede, rather than build upon obser-  
 “ vation and experience; the necessity of  
 “ collecting naked and indisputable facts,  
 “ and delivering them untainted by par-  
 “ tiality or hypotheses, and the prehem-  
 “ inence of this author on that account a-  
 “ bove the rest of the ancients.”

As the character he here draws of HIP-  
 POCRATES seems to have been so nearly  
 descriptive of his own, take it as follows ;  
 “ by his incessant attention, singular  
 “ penetration and indefatigable applica-  
 “ tion he made a larger collection of the  
 “ signs and symptoms of diseases, than  
 “ perhaps all other writers ever since ;  
 “ his narrations are simple, perspicuous,  
 “ methodical, accurate, modest, frank and  
 “ faithful; nice was his distinction be-  
 “ tween the appearances arising from the  
 “ disease it self, and from the errors com-  
 “ mitted by the physician, attendants, or  
 “ in the regimen. His observations were  
 “ as minute, as important, whence he be-  
 “ came

“ came so excellent both in distinguishing  
“ cases, and fortelling their events, nor was  
“ his sagacity in discovering remedies greater,  
“ than his benevolence in communicating  
“ them. He was neither precipitate in  
“ the application, nor in determining the  
“ effects of them; neither concealed his  
“ bad, nor boasted of his good success.  
“ The medicines he used were few, and  
“ cheap, but efficacious; more solicitous  
“ about the just and seasonable application  
“ of those that were necessary, than about  
“ variety; and his preference of experien-  
“ ced to other medicaments, was as con-  
“ stant, as his regard to evident, before  
“ occult causes; by considering the course  
“ and duration of diseases, observing the  
“ days when they raged or remitted, con-  
“ trouling or forwarding the determination  
“ of the morbid matter, digesting its cru-  
“ dities, accompanying what was matura-  
“ ted through the passages indicated by the  
“ distemper, directing the separation, and  
“ promoting it's expulsion, lastly being ra-  
“ ther an imitator and assistant, than by  
“ rash attempts a disturber of nature; he  
“ truly



“ truly saved all who recovered, without  
“ being the executioner of those that mis-  
“ carried under his care. By attending  
“ strictly to what proved prejudicial or  
“ serviceable, he became acquainted with  
“ remedies, and by contemplating the  
“ time and manner in which nature alone  
“ puts the enemy to flight, he established  
“ rules for the use of those remedies :  
“ which after almost infinite experience  
“ and success, he ventured to recommend  
“ (in treating on the virtues of medicines)  
“ but not without those cautions, which  
“ might deter persons unskilled in the art  
“ from the practice of it. Who before  
“ HIPPOCRATES maintained the seasons  
“ to be the cause of those diseases that usual-  
“ ly reign in them? that the particular va-  
“ riations of weather produced particular  
“ diseases? and that endemic disorders or  
“ those peculiar to each place were to be  
“ accounted for from the situation of the  
“ place, and the peculiar manner of living  
“ to which it's inhabitants were accustom-  
“ ed? After making the best use of the re-  
“ cords that descended to him the 19th  
“ physician

“ physician by succession in his family,  
 “ and having improved himself by travel-  
 “ ling into various countries; he taught a  
 “ great number of scholars, many of whom  
 “ afterwards situated in different parts of  
 “ the world, informed him of whatever oc-  
 “ curred worthy his notice; with these  
 “ qualifications and assistances he compil-  
 “ ed his almost consummate Collection of  
 “ Observations.” — By this heroic vindica-  
 tion at that time he rescued this venerable  
 sage from their oppression, who by degrading  
 HIPPOCRATES sapt the very foundation of  
 the art itself, and not only retrieved, but  
 established his just, and ancient reputation.

BOERHAAVE's pupils could not but ob-  
 serve in his lectures on the medical institu-  
 tions how judiciously he interspersed che-  
 mistry, so as to render this art, by his sin-  
 gular application of it, subservient to the  
 illustration of them, and were thereupon Orat.  
 so delighted with their preceptor and his Boerb.  
 doctrine, that they \* ceased not requesting, 1729.  
p. 13.  
 'till

\* Some English gentlemen formerly students at Ley-  
 den, are thought to deserve the credit of first en-  
 couraging BOERHAAVE to give lectures on physic  
 in that univcrsity.

'till by dint of importunity alone they prevailed with him, to instruct them in chemistry, as well as in the practice of physick.

All this he executed in so extraordinary a manner, that two years afterwards in 1703, he was invited to a vacant professorship of medicine by the university of Groningen, which like former offers he declined with grateful acknowledgments for the honour intended him; however his patron Mr VAN DEN BERG then president of the burgo masters of the city, and one of the seven curators of the university, represented this invitation and refusal in such a light, that they thought themselves in gratitude obliged to issue a decree for an augmentation of his annual salary, and for the reversion of the first medical professorship that should be vacant, there being at that time five professors in ordinary of physick.

Hereupon he delivered a second oration  
 Ap. § 24. concerning the use of mechanical reasoning in physick, in which he remarks that qualities arising from the magnitude, figure  
 and

and motion of bodies had been too much neglected, notwithstanding the fabrick of the animal body and circulation of the blood are adjusted in a great measure according to the mechanical laws common to other bodies, which must consequently render the knowledge of those laws not only extremely useful, but absolutely necessary ; and shows, how much medicine had suffered from metaphysicians and chemists, who ignorant of mechanics had pretended to solve phœnomena relating thereto by fictitious principles of their own ; he then represents the simplicity of mechanics, and the invariable laws respecting both the animal solids and fluids : and nowhere silences those hermetick triflers more effectually, who admit only of chemical causes, and explanations in phyc, as may appear from the following passage, where treating of the animal fluids, he says, “ from  
“ the motion of the fluids proceeds life, and  
“ from the free circulation of them health ;  
“ as soon as the fluids cease to move the  
“ body is dead, restore their circulation and  
“ life returns. A man falling into a per-  
„ fect

“fect swoon upon seeing another blood-  
 “ed, for a time seems absolutely dead, yet  
 “all the solids of this body are in a na-  
 “tural state, and the fluids also, circulation  
 “excepted: Agitate but the nervous sy-  
 “stem so as to convey what shall renew  
 “its systole to the heart, death vanishes,  
 “life is restored, and not life merely, but  
 “warmth, colour, motion, cogitation, and  
 “every function: where then is the fer-  
 “ment here (for now he attacks the che-  
 “mists?) what conflict of salts here? what  
 “oil or spirit is now either generated or de-  
 “stroyed? nothing all this while is lost or  
 “restored but motion, and yet life lost is  
 “restored again: in like manner birds and  
 “insects, whose fluids congeal in winter,  
 “by warmth are soon brought to life, *i. e.*  
 “the circulation is renewed:” but a more  
 apposite example is, “that of laying open  
 “the thorax of an animal, and when it is  
 “dead, only inflate the lungs with a pair of  
 “bellows, introducing the nosel into the  
 “wind-pipe, and it instantly revives;”  
 this likewise illustrates that surprizing sug-  
 gession in his last oration on medical ho-

“now

nour and fervitude ; “ an animal drowned  
 “ may be restored to life, whilst the lungs  
 “ remain entire and uncorrupted, by a strong  
 “ inflation of air into them, and expression  
 “ of it out again, repeating a while this  
 “ operation. p. 19, 20. compare with these  
 “ § 27, 28, 42 of his Institutes.”

During almost nine years BOERHAAVE had officiated as a professor with the title of lecturer only, when on Feb. 18th, N. S. 1709, upon the death of *Dr* HOTTON the professorship of medicine and botany was conferred on him ; his inaugural oration was upon the simplicity of true medical science, wherein exploding the fallacies and ostentation of alchemistical and metaphysical writers, he reinstates medicine on the ancient foundation of observation, experiments, and deductions naturally resulting from them.

In a few years he enriched the physic garden with such a number of plants, that it was found necessary to enlarge it to twice it's original extent.

In the year 1714 he arrived to the highest dignity in the university, the Rectorship.

The

The same year August 8th, N. S. he was constituted professor of the practice of physic in the room of BIDLOO, when twice a week he attended the university hospital, not less to the advantage of his pupils, than of the patients; an hospital was hitherto wanting to furnish him with proper subjects for improving the science by new attempts in desperate cases; for the experience was not small, which he had already obtained from an extensive practice of many years joined with the advantage, which physicians in Holland have over some of their neighbours, who are seldom called to the assistance of their patients before the middle, or near the end of their distempers, whereas the Dutch physicians by being usually consulted at the very beginning, often prevent the ill effects, which the disease left to its self or injudiciously treated is too commonly accompanied with; and at the same time they have an opportunity of instructing themselves by observing the nature of the distemper in it's several periods; the curators of this university being apprized, how necessary it is for the young physicians

physician to be lead by one already versed in practice to the bedside of the sick, before he ventures by himself to undertake the cure of diseases, have very wisely instituted this hospital entirely subservient to the use of the university, to which it is as essential an ornament as the anatomical theatre, chemical laboratory, physic garden, or the public libraries. At this hospital the professors of physic are obliged to attend three months in their turn, and the students of the university have liberty to visit the sick; and in case patients dye of any extraordinary distemper, the hospital is provided with a convenient amphitheatre, where the necessary dissections are made with the greatest accuracy and decency, notice being always given to the students to attend. Many remarkable cases that occurred under BOERHAAVE's care in this hospital are preserved in manuscript by some of his pupils.

And now, excepting only the advantages acquirable by travelling, which at the proper season of life his circumstances no ways permitted, what one further qualification was requisite to form an accomplished

D

physician



physician, or to make him more deserving of the highest honour in his profession?

It seems to have been about this time he was created president of the surgical college.

At the expiration of his rectorship in 1725, he delivered an oration “on the Ap. § 24. “method of obtaining certainty in physics.” Having here asserted that we are entirely ignorant of the first principles of things, and that all our knowledge of their qualities is derived either from such experiments, as subject them to our senses, or from consequences by an exact method of reasoning deduced from those experiments, he was led to reprehend the philosophers, whose indolence had disposed them to invent rather than attempt to discover both principles, and qualities, and in particular DES CARTES the idol of that time and country, in which he had spent twenty five years of his life. This doctrine happened to excite the outrageous invectives of Mr R. ANDALA, an orthodox Cartesian professor of divinity and philosophy at Franeker, who was pleased to ex-  
claim

claim the church was in danger; that the introduction of Scepticism and even Spino-fism would be the consequence of undermining the Cartesian system by such a profest ignorance of the principles of things: in short, his virulence was deemed so infamous, that the governors of the university thought themselves in honour obliged, (notwithstanding BOERHAAVE'S remonstrances to the contrary) to insist upon his retracting the opprobrium. The recantation was soon made with offers of further satisfaction: To which BOERHAAVE generously replied, the most agreeable satisfaction he could receive was, that so eminent a divine should have no more trouble on his account. Thus the intended defamation was converted into the means of enhancing his fame.

Which the same year was so conspicuous to the royal academy of sciences at Paris, that he received from thence a diploma, appointing him a correspondent in natural philosophy; and in the year 1728, he was elected a member of that academy in the room of Count MARSIGLI, deceased,

BOERHAAVE's intimate friend, and a like prodigy in natural knowledge; and April 30th, 1730, he was proposed by Dr MORTIMER (who long enjoyed the happiness of a free correspondence with him) to our Royal Society, and was chosen a fellow *unanimously*, an honour, that scarce any one of what rank soever can boast of, so great is the caution used by this worthy body in the election of their fellows, that there are almost always some negatives; this compliment had been paid him sooner, had he been sooner acquainted with the statute of the society, which prohibits admission to any one, who does not first express his particular desire of that favour. To both these societies he imparted some experiments related hereafter, concluding such returns the most acceptable requital of such obligations.

Nor was any opportunity neglected all this while of promoting him at home, his glory was become that of his university, which nevertheless did not on account of his eminent talents consider him more worthy it's indulgences, than for his gra-  
titude

titude in acknowledging them: accordingly in 1718, he succeeded LE MORT in the professorship of chemistry; and September 21, made an oration on this subject, "that chemistry was capable of clearing it self from it's own errors." How well he was qualified for this province, had appeared from his private courses annually repeated for fourteen years past; yet he was willing to convince a larger audience, that even unsought it was not injudiciously assigned him, notwithstanding he was already engaged in so many other professorships; this was fully effected by his manner of handling the well chosen subject just mentioned. In a former dissertation he had shown mechanics to be applicable to physic so far as the animal solids and fluids participated of the properties common to all solids and fluids, and no farther; and intimated, that those particular properties, which constantly distinguish a body from any other, and which could not be known to reside in that body by those qualities it has in common with all others, are for the most part the objects

Ap. § 24.

p. 28.

of chemistry; as the discreet application of both these arts tends greatly to the improvement of physic as well as philosophy, so the endeavours to extend either beyond it's due limits, and much more the substituting either for both, have rendered them in their turns prejudicial and contemptible: altho' the alliance of late maintained between geometry and natural philosophy, has very much increased the use of the former, and the solidity of the latter, yet it has been perhaps too much the fashion of this age to solve all phenomena mechanically, as of the preceeding to account for them chemically; the scene is changed in all but partiality; nevertheless the contenders for mechanical reasoning only have not carried their extravagances to such a height as the chemists, who not content to subject philosophy and physic to their empire, invaded religion also, and by a marvellous sagacity discovered the doctrine of transmutation to be contained in the Pentateuch, the books of SOLOMON, and the Revelation of St JOHN; nor were any mysteries, that of the Trinity itself, inexplicable

explicable with these adepts ; and who so able to interpret mysteries as those who created such multitudes of them? for the vainer alchemists, who sought the admiration more than the advantage of the reader, observing how prone mankind were to revere what they least comprehended, enveloped their important doctrines so ænigmatically, that they proved not more intelligible to others, than lucrative to themselves ; however at first they might hope to procure a veneration proportionable to their obscurity, they were at length among the wiser exploded as darkning counsel by words without knowledge ; thus did PARACELSUS, HELMONT, and the ROSECRUSIANS, abuse a most usefull art by the misapplication of it, instead of improving it like that profound philosopher of the 13th century ROGER BACON, who in the infancy of chemistry demonstrated such things performable by a combination of the powers of art and nature, as far exceeded the fictitious miracles of the Magi, and as were not to be effected by incantations or pretended diabolical arts ; who

ridiculing superstition rightly distinguished betwixt things natural and divine; possibly his skill in mathematics chiefly contributed to that discernment, which discovers the inconveniencies of extending a science beyond it's due bounds. To a second BACON, the great lord VERULAM, who almost exhausted, as well as restored science, the world is principally indebted for the first step towards a cure of those alchemical delirants, which has since been almost perfected by LIBAVIUS, BOYLE, BOHN, NEWTON, HOMBERG and STAHL, who by a legitimate restriction of chemistry have caused it to expunge it's own errors.

The eloquence and literature displayed in this oration upon an art discredited as much by the barbarous stile, as the idle conceits of illiterate writers, failed not to confirm the esteem of his auditors, and afforded an earnest of that large work his *Elements of Chemistry*; of which hereafter in part the second.

On the 22d of September 1721, he paid his last devoir to a deceased friend and colleague, in a funeral oration on professor

BERNARD

BERNARD ALBINUS, the father of SIEGFRIED ALBINUS, the present celebrated professor of anatomy at Leyden, where again he describes his subject and himself at the same time in the following lines.

“ That he flourished even in his old age as  
“ an instructor by his incessant diligence in  
“ improving himself by new discoveries: on  
“ mathematics and mechanics he firmly  
“ founded his natural philosophy, whence  
“ as well as from his chemistry carefully  
“ revised, he furnished himself with pro-  
“ per assistances in the healing art. What  
“ was there usefull in the anatomical,  
“ chirurgical, theoretical, or practical writers  
“ ancient or modern, which he had  
“ not collected, digested, and fitly ap-  
“ plied to promote the doctrine of his  
“ profession? with what judgment did  
“ he methodize the fruit of his severe  
“ studies! and with what a neat simpli-  
“ city, candour, and benevolence, did  
“ he communicate it to his pupils! some-  
“ times he would inculcate (*ne quid temere*)  
“ beware of precipitation; sometimes ad-  
“ monish against indolent, or superficial  
“ proceedings.



“ proceedings. How often he extolled  
 “ that honest and discreet medical simpli-  
 “ city too rarely found, and condemned that  
 “ licentiousness of asserting and framing  
 “ hypotheses, and disputing with the  
 “ subtlety of reason only, so destructive  
 “ of the art, to the neglect of it's faithful  
 “ mistress *experience*, and the converting  
 “ the dictates of HIPPOCRATES, *i. e.* of  
 “ nature into the baneful fictions of those  
 “ idle and ignorant men, who have pre-  
 “ sumed to practise and teach physic with-  
 “ out a tollerable acquaintance with the  
 “ animal oeconomy, distempers, or reme-  
 “ dies; and indeed the less their knowledge,  
 “ the greater their pretensions. He had  
 “ the true way of explaining HIPPOCRA-  
 “ TES by HIPPOCRATES, and the opera-  
 “ tions of the body also not by fictitious,  
 “ but demonstrable anatomical principles,  
 “ of enlarging the materia medica, and the  
 “ science of the ancients by recent dis-  
 “ coveries, with great caution and justness.  
 “ How well did he dictate the method  
 “ whereby diseases were distinguished and  
 “ removed! His doctrine was found and  
 “ certain,

“ certain, as founded on observation, con-  
“ firmed by experience, and absolutely  
“ impartial, as attached to no sect. Won-  
“ der not therefore so many resorted hither  
“ for instruction from all parts of Europe.  
“ To the publick welfare he sacrificed his  
“ own, but never busied himself imperti-  
“ nently. He was neither full of himself  
“ nor a disparager of others, and so far  
“ from insinuating any thing to the dimi-  
“ nution of his colleagues, that he recom-  
“ mended to his pupils an attendance  
“ on their lectures.” How much is it to  
be lamented that the parallel cannot be  
extended to this article also? that “ he  
“ left sons who augmented this their here-  
“ ditary reputation.”

Whilst he was thus laboriously in-  
gaged in such numerous and important em-  
ployments, confiding too much in the  
strength of his constitution; about the  
middle of August 1722, he was confined  
immoveable to his bed for six months with  
exquisite arthritic pains; and from the like  
application he suffered another violent ill-  
ness in 1727; but being threatned in the  
year

year 1729 with a relapse, he found himself under a necessity of resigning the professorships of botany and chemistry; this gave occasion to that elegant declamation on April 28, N. S. in which he recounts many fortunate incidents of his life, returns his grateful acknowledgments to those who contributed thereto, and expatiates on the pleasures which attended the prosecution of his botanical and chemical labours.

His eighth and last oration he delivered February 8th, 1731, on laying down his rectorship a second time; honoured as he was by the dignity of this office he became more so by his administration of it; in this oration he demonstrates, that “ a real  
 “ fervitude to nature in observing her dic-  
 “ tates, and following her example, is the  
 “ sole foundation of merit, intitling a phy-  
 “ sician to the highest honours in his profes-  
 “ sion; that the art of healing is never  
 “ more successful, than when directed by  
 “ nature, being but her faithful servant.”  
 But what is nature? by this, for fear of  
 misconstructions he afterwards declares  
 himself to mean, “ that chain of causes and  
 “ effects

“ effects, which ultimately terminate in the  
“ sovereign cause and director of all things!  
“ That without instructions thus acquired,  
“ the most learned and ingenious artist is  
“ unable to explain the formation of the  
“ parts, and the functions of the animal  
“ œconomy; notwithstanding all their pre-  
“ tensions by artificial digestions and sepa-  
“ rations to parallel the productions of na-  
“ ture, the most consummate adepts cannot  
“ from bread and wine or other human  
“ aliment prepare one drop of blood,  
“ which nature effects so speedily and con-  
“ stantly; nay, they cannot regenerate blood  
“ by any commixture of the very parts  
“ into which they had separated it by their  
“ art; so much is sanguification and nutri-  
“ tion the work of nature only; upon a  
“ knowledge therefore of her laws, and a  
“ conformity to them, the success in re-  
“ gulating her motions, and redressing her  
“ maladies must depend.”

Thus have we traced this great man through the several gradations to his highest dignity, hitherto mentioning those productions only which each step occasioned.

In

In filling the places of so many eminent professors, great must be the industry and abilities of the man who could rival each of his predecessors in their respective employments, how much greater were his, who so far exceeded them all, and that in so short a time, and with so little assistance! Where, and when will another be found to execute the like so much to the advantage of the public, and his own reputation! Two professors, men of distinguished character, are not thought too many to succeed in his station; VAN ROYEN in the practical college of physic, and in botany; GAUBIUS in chemistry, and the institutes, or theory of physic, who are pleased to paraphrase on the texts of their great preceptor, endeavouring to compensate the loss of their university by worthily prosecuting those labours, which will always be accounted it's glory.

### SECT. III.

## SECT. III.

*His Character, Sicknefs and Death.*

**T**HE ancients emblematically represented labour as the vestibule to the temple of honour; BOERHAAVE found it really so, than whom none lived more laborious, none more respected. This was apparent not only from the multitudes, which daily resorted to him for relief, but from the letters he was continually receiving from all parts of Europe, to consult him in difficult cases for persons of all ranks up to crowned heads; so unjust was the insinuation that he had but little experience.

Orat.  
Boerb.  
1729.  
p. 9.

The love of liberty and his country induced HIPPOCRATES to refuse the most magnificent emoluments offered him by ARTAXERXES, to reside at his court in consort with men of the greatest abilities, that power and wealth could command from all parts of the world; for the same reason BOERHAAVE also declined invitations

tions of the like nature: instead of attending princes abroad, he seldom failed of receiving visits at home from those, who had occasion to pass through Leyden; among many personages of high distinction, two only are mentioned in the funeral oration, but two such princes as every age is not blest with; the present Grand Duke of Tuscany, and that genius for civil polity, and universal science, PETER the great late Czar of Muscovy; who did not repent lying all night in his pleasure barge against BOERHAAVE'S house, in order to have two hours conversation with him on various points of learning the next morning before college time.

What professor was ever attended in his public and private lectures by so great a number of students from such different and distant parts, for so many years successively, with a fame always increasing? None heard him without conceiving a veneration for his person, at the same time they expressed their surprize at his prodigious attainments. In short it may be justly affirmed, that none  
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in so private a station ever attracted a more universal esteem.

Nor was his domestic inferior to his public felicity. According to the ancient and laudable custom of the Netherlands he remained single, till his fortune was established, not making his addresses before the 42d year of his age, when he married Mrs MARY DROLENVEAUX, the only child of a burgomaster of Leyden. The prudence of his choice was confirmed by the event, for their conjugal happiness continued uninterrupted twenty eight years to the day of his death; of four children, three died in their infancy; JOANNA MARIA the eldest survives, heiress of his fortune and virtues. But that treasure of knowledge and experience his Adversaria or common place book he left to his nephews Dr HERMAN and \* ABRAHAM KAAU both physicians, and to the latter his † anatomical and chemical preparations

\* Author of *Perspiratio dicta Hippocrati Anatomice illustrata.*

† Many of these were purchased of RUYSCH, and it is believed those gentlemen are willing to dispose of the said Legacies on reasonable terms.



collected at a great expence. Part of his library, which abounded with many of the best historians, poets, and other authors in polite literature, as well as phyfic, was sold by auction in June 1739.

He amassed greater wealth than ever any phyfician in that country from the practice of phyfic, which was owing as much at least to the frugality of his œconomy, as the largeness of his fees; yet he was falsely accused of penuriousness, for he was liberal to the distressed, but without ostentation: his manner of obliging his friends was such, that they often knew not, unless by accident, to whom they were indebted; beneficence of this kind, though less conspicuous, is more meritorious; and indeed he was gratefull to excess, if excess can be in virtue: it is however reasonable to suppose, that a man temperate by principle and inclination, and content without riches, as having no vices to indulge, would, after procuring them with great industry and integrity, use them with discretion.

Orat.  
*Boerb.*  
1729.  
p. 14.

To recount all those amiable qualities, which adorned his character, might be too tedious, as it would be necessary to go through the whole catalogue of virtues; but it would be injustice to his memory not to touch upon those, which distinguished it with peculiar lustre.

The reputation he gained for learning abroad, was far from being sullied by the opinion conceived at home in relation either to his principles or practice. To refute that ignominious aspersion, *Religio medici opprobrium Medicorum*, or else to vindicate himself in particular from the p. 20. charge of infidelity (should not a constancy in devotion and an extraordinary pattern of resignation be thought sufficient) he left under his own hand a sketch of his sentiments in divinity to the following effect.

“ That he was persuaded the scriptures Ap. § 18.  
 “ as recorded in their originals did alone in-  
 “ struct us in the way of salvation and af-  
 “ ford tranquillity to the mind, when join-  
 “ ed with obedience to CHRIST’S precepts  
 “ and example; in particular that precept  
 E 2 “ confirming

“ confirming MOSES’S commandment,  
 “ which respects the love of GOD and our  
 “ neighbour. He worshipped GOD in that  
 “ light only, in which he has been pleas-  
 “ ed to discover himself, least otherwise by  
 “ adoring an imaginary deity, he should  
 “ prove an idolater. He held the Divine  
 “ Will to be the supreme law, which should  
 “ be constantly obeyed without presuming  
 “ to dive into the reason of it.” His de-  
 viating once from this state of submission  
 gave him great concern; when racked with  
 incredible torture for fifteen hours succes-  
 sively, he earnestly prayed the disease  
 might put an immediate period to his life,  
 and misery; and upon his friend’s suggest-  
 ing by way of consolation, that a request so  
 circumstanced was not only natural to hu-  
 man frailty, but preceded by JOB him-  
 self, he replied, This maxim however I  
 wish to abide by living, and dying, “ that  
 “ only is best, and alone to be desired,  
 “ which is perfectly agreeable both to the  
 “ divine goodness and majesty.” Conso-  
 nant to this truly christian humility was  
 that reflection of his, “ many who make  
 “ the

“ the greatest profession of CHRIST’s doct-  
“ rine, pay little deference to his example re-  
“ commended in one of his first precepts,  
“ *learn of me for I am meak and lowly in*  
“ *heart.*” He was constant in private devo-  
tion morning and evening, and through his  
whole life consecrated the first hour after  
he rose in the morning to prayer and me-  
diation, and not only declared he thence  
derived vigour and an aptitude for business,  
but recommended the same practise to  
others; to this alone he attributed the  
conquest he had gained over the irascible  
passions, when a friend seeing him un-  
moved by great provocations, asked, whe-  
ther it was by art or nature he maintained  
such equanimity? he was as constant at pub-  
lic worship, as his affairs would permit.

But his piety towards GOD however  
extraordinary did not exceed his regard to  
his neighbour, for his tongue and heart  
corresponded in this his frequent declara-  
tion, that “ by goodness we make the  
“ nearest approach to the nature of the  
“ Deity.” This principle reduced into  
practice was productive of that true forti-

tude of mind, which enabled him to overcome \* evil with good, and, instead of meditating revenge, to preserve even those, if such could be, that wished his destruction. In a word, his philosophy was not a superficial decoration, but was intrinsically rooted in the man, a second nature almost connate with the first.

Although soon after his marriage he gradually declined visiting patients, he was always ready day and night in attending those, who were his patrons or patients at his entrance on practice, or any of their relations. In friendship he was sincere, constant, and affectionate; a man more communicative without conceitedness, more dispassionate in contending for truth, and more averse from censure, no age has produced. So unmoved was he by detraction, as to say, “the sparks of calumny will be presently extinct of themselves unless you blow them; and therefore in

\* In his preface to the *Botanicon Parisiense* how handsomely he retorts the reflection or rather false insinuation of Mr BERNARD DE JUSSIEU!

“ return chose rather to commend the good  
“ qualities of his calumniators (if they had  
“ any) than to dwell upon the bad.” In  
council and consultations, no man was  
more condescending and desirous to culti-  
vate concord; he was more apt to distrust  
than another to confide in himself. In  
medical consultations he was remarkable  
for his address towards senior physicians,  
and his courtesy to the rest. He never  
made his own works or affairs the subject  
of discourse, and his reply to any question  
concerning them manifested a regard sole-  
ly to the benefit of the enquirer, with-  
out founding or seeking his own praise,  
whilst his good nature often led him to ex-  
ceed in the praise of other authors. In  
the administration of justice, as during  
his rectorship, he had no respect of per-  
sons, nor was ever awed into unworthy  
compliances by the frowns of the great;  
he was modest without meanness, and  
steady without rudeness. He held con-  
science the supreme court of judicature,  
and neither swerved from justice himself,  
nor connived at any deviation in others.

When he heard of a criminal condemned to die, he inculcated the reflection, “ may Ap. § 18. “ not this be a better man than I? if “ otherwise the praise is not due to me, “ but to the grace of GOD.” By the venerableness of his countenance blended with sweetness, by lenity without softness, and by an acquaintance with the civil law, the law of his country, he was an ornament to magistracy itself ; extraordinary was his sagacity in discovering the genius and dispositions of men, as well as their distempers, at first sight, which might contribute to the knowledge he had of mankind, much superior to what is usually attained without travelling, or spending more time in conversation ; wherein, as in teaching, he had the faculty of being concise and yet clear, copious and not prolix, adding graceful embellishments to what he delivered, but left the company, instead of leading it, to mark the beauty of them. He always retained that innocence and simplicity of manners, which usually accompanies a greater converse with books than men, without the least

least of that moroseness, which is the frequent consequence of a secession from society for study in that stage of life, when the temper is formed. Philosophy itself does not exclude pleasantry, but the fond partiality of such as value only, what makes the distinguishing part of their own character. In his youth he was not averse to gaiety; afterwards, that natural turn to the polite kind of irony so much admired by the ancients in *SOCRATES*, as equally delicate, and innocent adding a relish to gravity, that facetious, and yet genteel humour enlivening the wit of others discreetly intermixt even with serious subjects, rendered his conversation no less entertaining, than instructive. In his lectures he has occasionally excited laughter in the whole audience without the alteration of one muscle in his own face; his action in delivering himself was so expressive, that he was frequently understood by it, when a difference of pronunciation would otherwise have left passages unintelligible to some foreigners; and being without the least affectation, it seemed



seemed the gift of nature, rather than the acquisition of art. His manner of explaining things, which was simple, methodical and exact, as well as the dignity of his matter, encouraged the resort of such numbers of foreigners (students in medicine) to that university.

He conversed in the English, French, and German languages, and read the Italian and Spanish with such facility, that few or none of the new discoveries in philosophy or physic written in those languages escaped him. The Latin he spoke extempore in lectures or conversation was so remarkably clear, that with his action, method, and the aptness of his similes, he could level the most abstruse points to the meanest capacities, one of the certain indications of a great genius. Many are able to reach the summit of a science themselves, who are not capable of leading others to it; and indeed in some cases there is more difficulty in descending to teach others, than in persisting to ascend by one-self; but he so compleatly executed his several undertakings, that his pupils,  
instead

instead of having reason to complain of any defects, have observed, that many express treatises upon the various subjects he discussed, appear after him so superficial, as scarcely to merit their perusal. It was his manner to lead persons to those subjects of conversation they were best acquainted with, whence he derived such instruction, that several expert artificers were surprized at his having penetrated further into their own art than themselves; for the lowest mechanic arts furnish a vast number of uncommon and surprizing experiments well worthy a philosopher's attention; some were the invention of ingenious, but unknown authors; others accidentally stumbled upon by the meanest artificers, who never dreamt of philosophy, nor any thing else but their own immediate advantage; yet these contribute as materially to the composing a natural history, as archives to civil history, and are justly stiled the anecdotes of nature, which alone are preferable to any systems of philosophy formed without

without them \*: his readiness at making curious deductions from common occurrences delighted every one that conversed with him ; as if educated under the Pythagorean discipline, he became not less useful as a Citizen, than eminent as a Scholar. He never neglected academical business, especially that of lectures ; and could not be tempted by the largest fees to attend patients at college hours : in short from an impartial survey of his whole character it appears to have been his grand concern to answer the utmost expectations from him, both in his public, and private capacity.

BOERHAAVE was naturally of a robust frame and healthy constitution, early inured to constant exercise, and the inclemencies of weather, whence he acquired a very uncommon strength of body ; no man could have a fairer prospect of longævity ; but he, who was temperate in every thing except application, sacrificed to li-

\* The late Mr CHAMBERS has given a most valuable and ample collection of these in his Dictionary or Cyclopædia.

terature in all probability a fourth of his days ; yet on this account he may truly be said to have died at seventy, older, than another at an hundred. His stature was rather tall, and his habit corpulent, having always had a great appetite, which he indulged at dinner only ; water was his common drink, till towards the decline of life, when he exchanged it for moll a liquor like our oat-ale ; as to wine, he rarely did more than taste it in complaisance. It cost him much more to nourish his mind, than his body. He was negligent of dress, and in his gate and deportment there was an honest and somewhat awkward simplicity, but yet accompanied, which is very rarely seen, with a distinguishable dignity. He had a large head, short neck, florid complexion, light brown curled hair, (for he did not wear a wig,) an open countenance, and resembled SOCRATES in the flatness of his nose, and his natural urbanity. His eyes were small, but very lively, and piercing, the print prefixt bears a near resemblance. A chearful serenity dwelt in his countenance, agreeing

agreeing in this respect also with the wife Grecian's, that it never seemed much elated by joy, nor depressed by sorrow, an indication of that tranquillity of mind, which is the agreeable attendant and guard of virtue.

The mornings and evenings he devoted to study, the intermediate part of the day to domestic and public affairs. He used to rise during summer at four in the morning, and at five in the winter, even in his later years; ten was his usual bed time. In the severest winters he had neither fire nor stove in his study, where he passed the three or four first hours of the morning: his application to study was greater in the last ten years of his life, than in any space of equal duration from the year 1700. When business was over, he took the exercise of riding or walking, and when weary revived himself with music his most delightful entertainment; being not only a good performer on several instruments, particularly the lute, which he accompanied also with his voice, but a good theorist likewise in the science, having read the  
ancient

ancient and best modern authors on the subject, as appears by the lectures he gave on sound and hearing; and during the winter he had once a week a concert at his own house, to which by turns were invited some select acquaintance of both sexes, and likewise patients of distinction from other countries.

In the latter part of his life his chief pleasure was in retiring to his country seat, where he had a garden of near eight acres, enriched with all the exotic trees and shrubs, he could possibly procure, that would flourish or live in that climate and soil: so intent was he upon stocking it with the greatest variety, that he stiles a present of American shrub seeds, “*mune-  
ra auro cariora*”; gifts more precious than gold: and that of two cedar trees “*regali beare dono*” a royal benefaction. Thus the amusement of his youth and later years was of the same kind; the cultivation of plants; an employment coeval with mankind, the first to which necessity compelled them, and the last to which, wearied with a tiresome round of vanities  
they

they are fond of retreating, as to the most innocent, and entertaining recreation ; certain it is, in the vegetable kingdom we are furnished with the greatest variety ; but what redounds not less to it's praise, the culture of it seems to have introduced us into all other knowledge : It concerned husbandmen to observe the motions of the celestial bodies, to measure the heavens and the earth, to ransack the bowels of the latter for metalline ore to supply more usefull instruments for agriculture ; whence probably the origin of astronomy, geometry, and metallurgy. But to return ; the mansion in the middle of his garden, though large, was more eligible for convenience, than grandeur ; a possession this, which is generally the ultimate ambition here of the truly great and good, particularly of those, who have consumed their active days in the service of mankind, whether soldier, statesman, or philosopher ; happiest of mortals ; could he, who was so capable of improving retirement, but have enjoyed it unmolested in this chosen spot alike commodious for contemplation,

templation, and business of that sort, from which the world and his own mind would have reaped equal advantages; for the busiest man, as Mr COWLEY observes, has not more employment in public, than a philosopher in private; the one may have the weight of a nation, the other of all nature upon his hands, but with this difference, that the philosopher possesses most private happiness himself, whilst he occasions the most public happiness by a free communication of his discoveries to all the world.

But from this pleasing scene our eyes must now be turned to one of horror; it is no small mortification to find, that even this superlative pitch of virtue and knowledge, which one in a million, who aspired after it, would hardly attain, will not secure the body from the severest tortures it is capable of enduring: In the middle of August 1722, by exposing himself to the morning dews before sun rising, BOER-

Ap. § 19.

HAAVE was seized with excruciating arthritic pains, which at length terminated in a paralytic affection, depriving him al-

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most



most of the sense of feeling, and entirely of the power of moving his lower limbs, infomuch that he was obliged to lie whole months on his back without attempting to turn himself, because of the acute pain threatned upon the least inflection. What most diverted these torments, which kept him awake many nights and days successively, was the review of those treasures of science repositid in his memory. There never was a person possessd of a more tenacious memory with so sound a judgment. Consul SHERRARD declared his astonishment at the following instance ; whilst he was with BOERHAAVE, a visitor entered, who excelled only in an acquaintance with the Spanish poets ; our professor who sucked honey from every flower, soon turning the conversation to that topic, repeated a page or more out of one of their celebrated authors, which he afterwards assured the Consul (upon expressing surprize at his finding time to converse with such Books) he had not looked into for twenty years past. Unless in chemistry, and his public lectures, he used no notes, and could by dint  
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of memory quote not only authors, but frequently the very pages and sections, introducing, on all occasions, especially in botanical lectures, the beautiful descriptions of the poets, particularly of \* VIRGIL, OVID, RAPIN, COWLEY, nay could even repeat some whole chapters of VAN HELMONT almost verbatim. But to return from this digression. After languishing five months without any relief, by the plentiful use of the express juices of the lactescent, and pappescent plants chiefly, assisted with the ferulaceous gums, he wonderfully recovered, and opened his private college again January 11, 1723. The evening was celebrated with public rejoicing and illuminations.

About the end of 1727, he was attacked by so violent a fever, that he not only with difficulty survived, but suffered much from it ever after ; and was obliged to resign the two professorships abovementioned, p. 44.

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yet

\* He was a great admirer of HOMER, but was charm'd with VIRGIL, and indeed so good a master of the Classics, as to be consulted by the greatest critic of his country about the sense of passages in them relating to natural history.

yet he was not less assiduous in his private labours, till the prelude of his fatal illness in the middle of the year 1737; when a difficulty of breathing first seized him, and afterwards gradually increased. In a letter to Baron BASSAND recommending his learned friend Dr LAWSON to his acquaintance, he subjoins the following

Ap. § 24. state of his own indisposition. “ An im-  
 “ postumation of the lungs, which has  
 “ daily increased for these last three months,  
 “ almost suffocates me upon the least mo-  
 “ tion; if it should continue to increase  
 “ without breaking, I must sink under it;  
 “ if it should break, the event is still du-  
 “ bious; happen what may, why should  
 “ I be concerned, since it cannot be but  
 “ according to the will of the Supreme  
 “ Being, what else should I desire? GOD  
 “ be praised. In the mean time, I am  
 “ not wanting in the use of the most ap-  
 “ proved remedies in order to mitigate the  
 “ disease by promoting maturation, no  
 “ ways anxious about the success of them;  
 “ I have lived to upwards of sixty eight  
 “ years, and always chearful.”

“ Finding

“ Finding also unusual pulsations of the  
 “ artery in the right side of the neck, and Ap. § 20.  
 “ intermissions of the pulse, he concluded  
 “ there were polypous concretions between  
 “ the heart and lungs, with a dilatation of  
 “ the vessels.” And September the 8th 1738,  
 he wrote his case as follows to Doctor MOR-  
 TIMER, Secretary of the Royal Society.  
 “ It is a year since age, application, and Ap. § 24.  
 “ immoderate fatness have produced an  
 “ utter ineptitude to any kind of exercise  
 “ in such a heavy corpulent body, full of  
 “ inert humours, and upon the least mo-  
 “ tion gasping for breath, with a pulse  
 “ strangely irregular ; but the most ur-  
 “ gent symptom was the interruption, or  
 “ stoppage of respiration on falling asleep,  
 “ and the prevention of any rest by a sud-  
 “ den terrible sensation as of strangling.  
 “ Upon which the abdomen and all the  
 “ parts below it became dropfical ; but  
 “ notwithstanding the removal of these  
 “ symptoms, there remain pain of the  
 “ belly with great weakness and anxiety,  
 “ a suffocating asthma, short are my flum-  
 “ bers, disturbed with dreams, the mind is

“incapable of any business; wearied with  
 “this conflict I gain no release, yet patient-  
 “ly wait the divine pleasure to which I  
 “am wholly resigned.”

His manner of sustaining his misery yielded an example of the most exalted and difficult use, to which reason and faith can be jointly applied.

During the inexpressible severity of this disease, he intimated to a particular friend, that he had a more sensible or experimental conviction and certainty of the distinction between thinking and material natures, and also a livelier perception of the inexplicable union of soul and body, than was attainable by meer meditation and philosophizing, as if not otherwise procurable than by long sickness. If this be thought to favour of enthusiasm, yet it must be acknowledged, that to nothing less than the highest reach of piety, philosophy, and virtue, can be attributed that invincible fortitude of mind, which not only supported him with the patience of a hero or a saint, even without repining, for many months under such torments, as

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to make his best friends wish for an immediate deliverance (as no other could be expected) by death, but enabled him at the same time by lenient discourse to soothe their affliction; that philosophy, which had so well instructed him how to live, taught him the art of dying also.

About the end of August for some days there were flattering hopes of his recovery, which soon vanished, and he declined to the 23d of September; when still maintaining a serene composure, as if insensible of any uneasiness, betwixt the hours of four and five in the morning he expired, wanting but three months and eight days of seventy.

How extensive must be the concern for so irreparable a loss? not only his friends and pupils, the university and city of Leyden, but the republic of Holland and of Letters are struck with undissembled sadness; and certainly the death of one man can never give a juster occasion for it, than when a person formed by nature for great designs, prosecuting them with a generous ardour, conducted by such prudence  
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in executing them as that they rarely prove abortive, is cut off before those pursuits are finish'd, in which he alone was likely to have succeeded, and the success of which would have conduced so much to the benefit of mankind. In short, not one whom BOERHAAVE'S fame had reached, and whom had it not? if his own welfare was his care, and his case and circumstances would have permitted consulting him, can forbear to participate very sensibly of this general sorrow.

But in vain we reflect on what is irrecoverable; better were it to improve those remains in which he may be said still to survive, and ever will as long as diseases exist, whilst philosophy and physic are cultivated. Happy would it be for Europe, could he be said to live in those disciples also, who from his school, as the grand seminary of medical science, have been transplanted into the several regions of it; or even in those surviving professors who were his worthy Colleagues, OOSTERDYK, ALBINUS, VAN ROYEN, and GAUBIUS, (the three last were educated under him) concerning

concerning whom just before his death, he thus exprest himself to the Curators of the Univerfity on their consulting him about the affairs of it.

“ I congratulate you upon leaving the Ap. § 23,  
 “ Univerfity in fo flourishing a condition,  
 “ with fuch an ample fund for the fciences,  
 “ but in particular for the establish-  
 “ ment and augmentation of medicine,  
 “ and raifing it to the higheft degree of  
 “ dignity and ufefullnefs ; which doubtlefs  
 “ will be effected by the concurrence of  
 “ the prefent four profeffors of phyfic, in-  
 “ difputably men of the firft rank in their  
 “ refpective provinces ; under fuch presi-  
 “ dents the Hippocratic fchool may pro-  
 “ mife it felf perpetual honours and in-  
 “ creafe.”

A fummery view of the character of our great phyfician is given by an impartial hand. \* “ This great man is departed to  
 “ the irretrievable lofs of philofophy and  
 “ phyfic :

\* The tranflator of the Tranfactions of our Royal Society into French, by way of note to BOERHAAVE's laft paper on Mercury, 1736, N<sup>o</sup> 434, p. 242.



“ phyfic : Long was he the oracle of his  
 “ faculty, and the phyfician of all Europe ;  
 “ never was preceptor more beloved, pro-  
 “ fessor more celebrated, nor phyfician  
 “ more confulted ; he arrived to an emi-  
 “ nence in all the feveral branches of me-  
 “ dicine, had the glory of teaching them  
 “ with equal applaufe, and the happinefs  
 “ of feeing himfelf admired without being  
 “ obnoxious to *the effects of* envy or to any  
 “ *disparaging* contradiction ; infomuch  
 “ that he was never mentioned by the  
 “ greateft of his cotemporaries, but with  
 “ encomiums. His fole authority with-  
 “ out the fupport of arguments was ad-  
 “ mitted as decisive. He was not lefs fuc-  
 “ ceffful in pra<sup>c</sup>tice, than learned in theo-  
 “ ry, and is therefore ftiled the Batavian  
 “ HIPPOCRATES : The qualities of his  
 “ mind have rendered him ftill more amia-  
 “ ble, than thofe of his underftanding. He  
 “ was a fure patron to men of learning  
 “ and genius, employing his own reputa-  
 “ tion as it were wholly for their fervice.”

We may add, he was a man of a vaft com-  
 prehenfion, profound judgment, prodigious  
 memory,

memory, solid experience, and unparallel'd modesty. His religion, though strict, was rational; he sought truth constantly, espoused it zealously, and on his labours mankind may securely rely; he was faithful and civil to his very enemies; his skill not only in philosophy and physic was revered by all who excell in those studies, but his attainments in other learning excited admiration. His knowledge had a right influence upon the temper of his mind, which was endowed with all the humility, benevolence, fortitude, and sincerity of a sound and unaffected philosopher. To conclude our account of his life with the words of a very polite Biographer, "This is spoken not of one  
 " who lived long ago, in praising of whom Hist. R.  
S. p. 189.  
 " it were easy to feign, or to exceed the  
 " truth, where no man's memory could  
 " confute us; but of one, who is lately  
 " dead, who has many of his acquaint-  
 " tance still living, that are able to  
 " confirm this testimony, and to join with  
 " us in delivering down his name to poste-  
 " rity, with this true, *though imperfect* cha-  
 " racter of his learning and virtues."

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A N

A C C O U N T

O F T H E

W R I T I N G S

O F

Dr H. BOERHAAVE.

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P A R T II.

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S E C T. I.

*Of two Orations, the one relating to Theory in general, the other to the Practice of Physic.*

**T**HE digressions in our former part would have too much interrupted the narrative of Dr BOERHAAVE's life, had the interspersed extracts from his orations (calculated for a mixt audience and therefore for the generality of readers) been

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more numerous or prolix. There are two orations well deserving the consideration of the philosopher and physician, of which very little mention has been already made; p. 31, 34. as the one may serve for a specimen of his sentiments and manner of discoursing on philosophy including physiology, and the other on the practice of physic, and as together they afford a compendious view of the ancient, modern, and true state of both sciences, the following abstracts of them can be no improper introduction to the account of his larger writings.

The subject claiming priority, we begin with that delivered in 1715. *Disserta-* P. 34.  
*tio de comparando certo in physicis*, his Dissertation on obtaining truth or certainty in philosophy, or the knowledge of nature.

It was his design here, to show the vanity of attempting to investigate the causes of things, or to solve the usual appearances in nature by the meer speculation only of the acuteſt geniuses, and to expose their presumption in describing the *principles* or primary constituents of things, which, since they

they never could be subjected to any experiments, being so minute as to escape all observation, have ever eluded our nicest scrutiny.

Those are understood to be *principles*, from which by a necessity inseparable from their existence proceed all the changes in the universe. That some such exist is as certain, as are the changes apparent in bodies. But what they are is as inscrutable, as any thing whatsoever. Before a man can truly pronounce himself acquainted with these principles, he must necessarily be possess'd of such ideas, the contemplation of which may present him with all things which ever were, which are, or shall be; for all this flows from understanding the nature of a true principle; and less than this demonstrates the pretender to have embraced only the shadow of it; since he who comprehends the nature of a cause must perceive all things contained in it, and how they result from it, every cause operating from the efficacy of its own nature, which whoever rightly apprehends, must likewise perfectly know  
all

all its effects, as virtues peculiar to it; just as a skilfull mechanic upon duly considering the wheels, springs, or weights of a clock, readily conceives the periods of the revolutions of the several wheels, and the various motions that must ensue.

But waving arguments of this kind let us appeal to facts, and examine what the greatest philosophers have contended for as real principles. The most ancient of them, those of Syrophœnicia, held for principles productive of all natural appearances chiefly these three, *Atoms, Space, and Gravitation.* This doctrine thence derived and received by LEUCIPPUS, DEMOCRITUS, METRODORUS of Chios, EPICURUS, LUCRETIUS, and their followers, was polished by GASSENDUS, but being afterwards exploded by DES CARTES, it was in disgrace during the prevalence of his sect; nevertheless it reviv'd, and is established since to much greater advantage by the invincible demonstrations of that Prince of all philosophers Sir ISAAC NEWTON: But yet, whatever is known of the nature of these very principles, is learned only from their obvious effects. By

By an *Atom* is meant a corpuscle too small to affect the senses, which consists of particles cohering so firmly, as to be inseparable by the active force of any bodies whatsoever. *Atoms* therefore are elements of a constant figure and dimension: But how are we apprized of their existence? by considering, that although bodies continually vary their external form, and revert to their ancient chaotic state, yet since after so many thousand years the fabric of the universe seems to be much the same, this conclusion follows, that there must be some immutable elementary particles, which by their various conjunction produce various bodies, whose dissolution can extend no further, than into those component particles. Nothing therefore is generated from new matter, but every thing seemingly new is only regenerated; compounds are changed, whilst their elements remain indissoluble. Nothing more then is known of an *Atom*, than what sense teaches; for it is not learnt by reasoning *a priori* to be an individual, impenetrable, &c. but necessarily deduced from effects

effects or observations of the nature of things, as from the collision of bodies, &c. and an unknown cause is suggested to account for such effects, as are thought most likely to proceed from it.

Nor have they succeeded better, who estimate the nature of bodies from *extension* or *space* only, for from thence the diversity, resistance, and other properties of bodies cannot be accounted for: All would be alike impervious, immoveable, immutable, infinitely extended every way, without the variation of rest and motion; whoever thoroughly considers this will be far from finding, that he can deduce the nature and mutation of bodies from his idea of pure extension; how much soever several great men might at first have favoured this presumption, they at length frankly acknowledged the vanity of it, particularly HUYGENS, LEIBNITZ, and NEWTON.

Altho' *Gravitation* was according to the most ancient philosophers supposed proper to Atoms, and to appearance is inseparable from them, always under the



same laws, and increasing in proportion to the increased quantity of matter, yet the most sagacious philosopher knows no more what Gravity is in bodies, in respect either of its nature or origin, than he who has once examined it only by his senses: All that is understood of it is from experiments, and all the excellent discoveries of ARCHIMEDES, PAPPUS, GALILEO, TORRICELLI, DES CARTES, HUYGENS, VARRIGNON, BERNOUILLI, and Sir ISAAC, have been no more than a description of the laws, properties, and effects of gravitating bodies. Nor is *Attraction* better understood as to its cause, nor *Motion* of any kind, and therefore none of these are to be admitted as *Principles*.

But setting aside the doctrine of Elements and Motion, other causes are employed for generating effects, the knowledge of which mostly respects human uses, *viz.* *Stamina*, or rather the *Seeds* of things of a nature sufficiently durable and inimitable by any art; whose contexture serves as a basis to the production, growth, action, preservation, and propagation of every specific

specific body. These feeds have been always and every where alike ; let these be supplied with the same aliment, however foreign it may seem to their several natures, yet assisted by moisture and warmth, it will assume a form peculiar to each respective body, whether metalline, animal or vegetable, and such an one, as no human invention can frame or effect any other way, than by the assistance of the feed, let the body be ever so simple, or the artist ever so ingenious : almost all the appearances of nature, which so much exercise the diligence of philosophers, are derived from the seminal principles : for nothing can be more ridiculous, than to attribute the generation of such uniform organical productions as seeds, to the fortuitous concourse of elementary particles ; much more agreeable to nature is the most ancient theory of the origin of things from eggs, so judiciously represented by DRELINCURT, by him confirmed in an elaborate detail of instances, as well as by HIPPOCRATES, MERCURIALIS, HARVEY, MALPIGHI, SWAMMER-

*Of the WRITINGS of* [PART II.  
DAM, GRAAF, and GREW; and after-  
wards improved by LEWENHOECK's dis-  
coveries of the rudiments of animals con-  
tained in the male sperm, with which  
those eggs are impregnated. This doc-  
trine has since been established in regard to  
vegetables, and some such manner of im-  
pregnation is by consummate adepts ex-  
tended to fossils: In short, all the Euro-  
pean philosophical transactions corroborate  
this system. But how inconceivable is the  
endless fecundity of one prolific grain of  
mustard seed! in which were included  
from time immemorial the embryos or  
effective delineations of all the plants which  
have sprung from that seed, and from their  
seed, &c. to the present time, and which  
shall spring from them, whilst the world  
lasts, all possess of the same nature,  
form, and structure, subject to like vicis-  
situdes in respect of their origin, growth,  
operation, propagation, decay and dissolu-  
tion. How singular is the efficacy of this  
feminal virtue! Sow the seeds of Colocynth  
and Cassia of the deleterious Aconitum  
and of Antithora its antidote in the same  
fertile

fertile soil, and supply them with the same water, how different juices they afford! nay, how much do the juices vary in the distinct part of the same plant, and how similar are they in corresponding parts! the like is observable in all animals also. From hence the conclusion is evident, that the origin, structure, and virtues of particular concretes argue the pre-existence of like bodies, from whence they were produced: That such similar bodies do not depend on any universal principles, but each has a nature peculiar to itself, as indefinitely various as are the forms of bodies, and therefore not otherways cognizable than as they are particularly disclosed by experiment the faithful interpreter of nature. This is more justly and nervously represented by MOSES than by all other philosophers, "Let the earth  
"bring forth plants having their seed in  
"themselves *respectively* after their kind."

But leaving this intricate speculation of seminal principles, let us examine only, what is esteemed the most simple part of an human body, a single *hair*. More than

the age and industry of any one man would be requisite to investigate the compleat structure of this so trivial a thing, since the care and apparatus concerned in bringing it to perfection, is not less than is necessary to form the most ample and exquisite machine.

Consider with what sollicitude its bulbous radicle of artificial texture is placed in the soft fat under the tough skin, alike defended from injuries and incapable of injuring. This bulb is framed by the delicate contexture of innumerable vessels, which with inexplicable diversity form the tender but durable membrane of this hair. Consider the multitude of capillary arteries and veins tending thither; the spiral convolution towards the extremities of the subcutaneous nerves, how they rise into soft, mucous, and almost diffuent *papillæ*, the organs of the sense of touch, with what amicable and inseparable connection incorporated with the aforesaid vessels they concur to the structure of the said membrane, penetrate into its hidden recesses, where rooted and fixt they furnish

furnish the first *stamina* of the sprouting hair. Thus far the work has proceeded in a *Fœtus* and even in an Embryo. This bulb is supplied with different humours by thousands of different vessels, and the extremities of ducts tending from all points towards a centre form soft and succulent roots, which connected by very small vessels, and firmly implanted in the membrane, are moistened and endued with acute sense: then from the fine fibres loosely dispersed before, and now united more closely, the condensed trunk arising, becomes harder, dryer, smaller, and protruded beyond the sphere of its receptacle, finds a pore in the skin open for its egress, and receives from the skin a sheath, to which is owing its colour and firmness; after the impelled hair has raised the scales of the *cuticula*, receiving from them an outward coat, it passes on through the pore into the air, by which the moisture being dissipated it dries, hardens, loses all sensation, and is propelled to such a length, as the part, where it grows, and the uses, for which it is destined, require.

Let

Let us now examine an hair shed, or separated from the body, apparently so simple. Large hairs through a microscope are observed to consist of distinct fibres with a cavity (discoverable upon bisection) wherein is contained a medullary substance. Besides we learn from diseases that they are compounded from their splitting sometimes into many fibres, sometimes entangling inextricably, sweating humours of various colours, and when their exit through the skin happens to be intercepted, they coil themselves up, conglomerate, and appear like little worms producing elevations, or tubercles, and uncommon ulcers. Further by chemistry a quantity of hair affords water, oil, volatile salt in great plenty, and a spirit more acrid than from any other part of the body. Thus by the successful diligence and sagacity of MALPIGHI, RUYSCH, CHIRAC, and LEWENHOECK, by the comparative anatomy of plants and animals, by the history of distempers, to which the hair is subject, and by other helps we have shadowed out so much of the structure of this small  
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and to the naked eye simple part. But yet how much is wanting? for can the nature of an hair be understood unless that of a nerve be known? and the nature of this, without that of all the other parts of the body, and especially of the aliment or humours which support their growth. Thus, as HIPPOCRATES remarks, the animal œconomy is like a circle, in which neither beginning nor end are discoverable.

Now, what force of genius could have suggested all that relates to this single hair from imagination only? Not the skill of all the naturalists and physicians can restore one hair radically extirpated, nor alter the growth nor colour of any one by principles conceived *a priori*. What then is clearly apprehended from their universal principles in relation to the whole body, and to the universe? Such is the wisdom exhibited by nature in the meanest subjects, that let but one of the many apt and similar instruments she uses, or the order of their disposition pass unobserved, and the philosopher will be quite at a loss in explaining any of her operations; in  
which



which no time is lost, no unnecessary step is ever taken, but every thing is effected the shortest way, and with consummate art.

Lastly, let us consider their success, who from hypothetic principles have endeavoured to explain the *phænomena* of nature. Consult the schools of Greece and Italy; they differ upon almost every thing from one another, and among themselves also, even in constituting their very principles; THALES who was versed in the Egyptian *Arcana*, as well as in those of Asia is corrected by ANAXIMANDER, this by ANAXIMENES, and although ANAXAGORAS improved upon the last, he escaped not the censure of ARCHELAUS. At length that wisest of the heathens SOCRATES perceiving the vanity of such speculations, applied himself chiefly to moral philosophy. But PLATO could not refrain from blending his hypothesis about principles with the doctrine of his preceptor, on which account he incurred the reiterated reproofs of ARISTOTLE; and even this great man after a long

long reign, has been dethroned by the chemists, Lord VERULAM, and DES CARTES. Nor did the chemists or Cartesianists tyrannize longer, than till philosophy was so fortunate, as to fall into the hands of those, who reasoned mathematically upon faithful experiments only. As to DES CARTES it is hardly credible, that such excellent mathematical treatises, as those on geometry and dioptrics, and so different performances on physics should proceed from one and the same author; and the like difference is observable betwixt the mathematical writings of HUYGENS, and his *Cosmotheoros*, wherein he indulges imagination. Thus it has happened with others also, but the mention of two such men is sufficient.

Yet there is no reason to conclude that Pyrrhonism must be the consequence of our doctrine; for the Sceptics did not suspend their assent from a distrust of fallacy in *observations*, they only condemned the wild licentiousness of *assuming principles* for *explaining* observations; whilst SOCRATES and the wiser Academics held accurate

curate observation to be the genuine voice of nature, and that ignorance and errors about her proceed from a rash assumption of principles:

In short, all the improvement made in philosophy, except that from meer experiments, is owing to mathematical reasoning upon them. Geometricians have assumed no principles in relation to the nature or motion of bodies, but what are manifest to every one, and nevertheless have obliged us with the most certain and useful discoveries; for whatever increase has been gained in the history of nature since the beginning of the 16th Century to this very time, it must be acknowledged, \* we are entirely indebted to the precepts and experiments of the great Sir FRANCIS BACON, of whom it is difficult to say, whether he was more successful in the restoration of distressed philosophy by his admonitions or example, his labours or liberality.

And

\* This is sufficiently shown by Dr SHAW, in the notes to his edition of Lord VERULAM's philosophical works, in 3 vols. 4to.

And now, from the disclaiming of Sects; and from the institution of philosophical societies for experiments throughout Europe, what numerous discoveries have been already made! what may we not expect?

The other ORATION relating to the *Practice of Physic* before mentioned, is entitled, *Oratio, qua repurgatæ Medicinæ facilis asseritur simplicitas.* A vindication of the *plain simplicity* of *Medicine*, when divested of what is *foreign* to it. This is learnedly prosecuted by the following steps.

That great is the simplicity of naked truth, not only mathematicians, but all who have treated things scientifically in any branch of human knowledge abundantly testify. ÆSOP, SOCRATES, DEMOCRITUS, LORD VERULAM, DES CARTES, who devoted themselves to the search of truth, excel in point of *simplicity*. Indeed in every research simplicity is both the road to truth and the characteristic of it; nor is it less so in the case of physick, when cultivated with strict purity, than of other sciences, notwithstanding so many by pretending it to be a study of immense labour

labour, have sometimes drove even the diligent to despondence.

It must be granted, those things only relate to medicine, which have a tendency to preserve life and health, or to remove diseases; 'tis commonly believed, their number is infinite, and concluded therefore that our science must be the most extensive, and difficult of any: But whoever discriminates fallacies, and doubts from certain truths, and rejects the former, will find the rules of the art thus rectified, to be not very numerous. Discretion forbids the presumption of any thing in physic, the truth of which a skillful practitioner has reason to suspect; this is not more effectually guarded against, than by avoiding what is peculiar to sects; nor is truth more readily discovered, than by admitting only what all proper judges allow; a maxim which reduces what properly belongs to medicine into a narrow compass; for upon examination we shall find, that most medical writers are plagiarists in what they have delivered conformable to this maxim; that most of the indisputable

putable truths, they contain, have been copied from HIPPOCRATES; and that if all errors and idle jargon, were expunged from the works under HIPPOCRATES'S name, few certain tenets would be left, and those very simple: Discard what relates to elements, sympathy, antipathy, innate heat, celestial influences, anatomical errors, with all that depends thereupon, which swell those works to so great a bulk; what remains? But a small collection of observations not very remote from our senses, nor superior to our comprehension.

With what a multitude of books has PLATO and his sect loaded the science? But besides learned harangues on triangles, numbers, ideas, elements, humours, genii, appetites, harmonies with mysterious allegories, and as many false corollaries subjoined, what is there *doctrinal* except the little divulged by HIPPOCRATES before him? The same may be alledged against his disciple ARISTOTLE and his sect, who tyrannized in medicine, as well as philosophy, down to the time of PARACELSUS, and yet delivered nothing useful  
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in the former, but what was borrowed from the *Coan* monuments ; all the rest is too general, obscure, or false, to be of any service ; nay, even GALEN, if you except his anatomy, is only valuable for his genuine representation of the *Coan* records.

What are the voluminous medical treasures of the Arabians, but the doctrine of ARISTOTLE and GALEN in another language ? Thus it appears from the first ages down to the chemists, all the valuable writings, which relate to phyfic, are few and simple ; to distinguish therefore the few original authors from innumerable copyists, is a difficulty with students best obviated by an early acquaintance with a judiciously selected number of the ancients.

The additions to the science since HARVEY, besides what respects anatomy and mechanics, are owing entirely to the Cartesians or chemists. The former have done little more than incumbered it with useless fictions, by fleeing so hastily from generals to particulars ; the latter indeed have been serviceable both to philosophy and phyfic, by discovering the peculiar  
operations

virtues of particular bodies, and their operations upon one another; but are miserably mistaken in the general laws, to which from their particular experiments they conclude all bodies to be subject; reject these, with their cant of elements, fictitious ferments, effervescences, antagonist salts the only engines of nature, their pretensions to what is not feasible, and conceit that all chemical productions must be medicinal, with their practice consequent upon such chimæras; carefully exclude all these from the works of PARACELSUS, HELMONT, TACHENIUS, and the ancient chemists, what have you more, than the few plain discoveries collected by the worthy Mr BOYLE with great labour, prudence, fidelity and perspicuity.

See now the face of physick cleared from what only disguised or incommoded it! The bulk of all, that really appertains to the science, seems not so discouraging, and what appears to have augmented it, relates no more to medicine than to other sciences. If any contend, this holds only, because but small advances are al-



ready made in the art, and that this simplicity cannot subsist, when it is arrived towards perfection; reason rather dictates the contrary: For there is but one nature peculiar to each thing, which, once discovered, remains always so; whereas hasty conjectures about matters not properly subjected to their cognizance, the more they deviate from truth, the more apt they are to enlarge. How complicated was the fabric feigned of the human body, before dissections manifested the contrary? When HARVEY and MALPIGHI destroyed the offspring of a luxuriant fancy, exploded the intricate machinery, the cells of ARCHÆUS with the vast variety of ferments, strainers, and efficacious faculties; and later anatomists have with astonishment perceived, that the nicer their scrutiny by the help of microscopes and injections, the more simple and similar the organical parts appeared. Nor are the fluids so compound as is imagined from the variety of their effects; for the same action of the same liquid applied to different vessels produces very different effects; the

the diversity therefore in these does not infer a difference in them: The constituent parts of our fluids separable by art are only water, volatile salt, oil and earth; which though few, and easily reducible to the most simple bodies, did not exist thus distinctly in a living animal, but only the *humours*, which by *chemical treatment* afford such productions: The eye through a microscope discovers, that red blood divided merely by the action and subdivisions of the smaller vessels, becomes less and less coloured, and at length even pellucid: Aliment furnishes another argument; grass or hay, and water are converted into the like humours in a cow, as milk or bread, and water in a man; the better therefore we are instructed in the nature of animal fluids, the more simple we find them, to the confutation of chemical hypotheses about the causes of their colour, heat, &c.

It may be objected that the number of diseases is not yet settled, that from their *Proteus-like* variation, it would require ages and infinite labour to specify them.

But does not the simplest affection of the most simple part by intercepting its action occasion one certain disease? Indeed by connection the adjoining parts may be affected, yet in that respect only it impedes the actions of the parts seized; this impediment is often accounted a new disease, and many effects arising from one indisposition, and appearing distinctly under various shapes, are by the unwary physician pronounced of a different nature, whereas upon stricter examination they are all found to proceed from the same cause, and are extirpated with it: When the blood flows on directly in an artery, each point of the inner surface of the vessel sustains the force of that part of the fluid, which rushes directly against it; suppose a particle of a conical figure to have its apex fixt in any one point of the vessel, then the prominent part or basis of the cone is propelled by an impulse proportional to the quantity of the fluid intercepted by it in a direct line, and will be impelled with so much greater force, as its surface is greater than the point of the vessel, against which a less portion of  
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the fluid impinged before ; but all this force is exerted against that point of the vessel, where the particle is infixt ; there consequently the vessel will be lacerated, the more fluid part of the blood extravasated, the more solid part thickens, stagnates, and is condensed ; Hence an obstruction in this vessel, and thereupon the circulation must be accelerated, the attrition increased in other vessels, a fever and inflammation ensues ; by which the stagnating fluid, and what was bland becoming acrid from a double cause, the tender animal stamina are destroyed ; if this happens to a vital part must not the disease be fatal ? But in the transition from health to death all those intermediate actions must be impaired, which depended on a healthful state, and these being so numerous, how severe and multiform a distemper may befall the healthiest person from one most simple cause only ? This instance exposes the dangerous error of those, who imagine the morbid humours apparent at the end of a disease to have been necessarily the cause of it ; whereas the natural

humours are varied by the influence of a distemper every moment, which change is not the cause, but the effect of the malady; and therefore he, who labours to remove such effects only without regard to the primary cause, is sure to labour in vain. Great is the use of this observation with respect to the diffusive and confused doctrine of Crises; for, what is critically discharged at the solution of a disorder as excrementitious, was at the beginning of it natural to the body, but degenerated and corrupted by virtue of the distemper; if this had been nipt in the bud, the critical matter had never appeared, but remained a salutary humour; And the physician, who can correct a malignancy as soon as it invades the body, anticipates a Crisis. But the maturation, periods and direction of CRISES make one half of medical doctrine. If a man takes sublimate mercury, the regularity of the functions are immediately perverted, the patient burns, the humours putrify, and the putrid matter discharges it self, wherever it finds vent, leaving a cessation  
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of the impetus after such excretions. Thus is the foregoing illustrated ; for the physician does not wait for this crisis, but immediately obviating the poison by an antidote prevents the impending putrescency of the humours ; and consequently approves himself so much the better *artist*, the sooner he stops the tendency to such a crisis.

The nearer therefore we come to perfection in the art, to the greater simplicity we attain. This appears also from contemplating with HIPPOCRATES, the nature of those chronical cases, which are not the consequence of acute distempers ill treated. They arise spontaneously, when aliment is not converted into wholesome humours, either from the weakness of the viscera, or defect of natural secretions to dilute the aliment. In these cases the food retaining its own nature proves pernicious instead of nourishing ; trace the result of this, and the nature of such chronical diseases is readily apprehended.

Lastly, Some pretend, that the knowledge of remedies alone compleats the practitioner, and that though their num-

ber is almost infinite, yet each is a specific for some particular disease. Were this so, adieu to the study of physic as a science: But is this pretence warranted by the practice of HIPPOCRATES and SYDENHAM? No; in treating *acute* distempers they asswaged the impetus, raised the languid, supported the strength by regimen; what other helps used they? When the fever was violent, they made discharges, blunted acrimony, diluted too thick fluids, and condensed too thin; constringed lax vessels, and relaxed those too rigid, made revulsions to parts where the danger was less, and administered occasionally paregorics. In languors they used stimulating attenuants. Water, wine, vinegar, barley, nitre, honey, rhubarb, opium, fire, and the lancet answered these purposes. SYDENHAM declares, that a person well skilled in cases seldom wants remedies; and though he complained at first of the troublesome diversity of distempers, supposing it necessary they should be cured by specifics, yet in his latter years he triumphed in the methodic discipline, in subduing such numbers

bers of diseases only by bleeding, purging with an opiate after it, and regimen. See on what simplicity the princes of the art relied, and have others succeeded better? Nay, has not a pompous materia medica proved rather hurtful? What mighty matters have this operose pharmacy and chemistry afforded? Are the remedies at present depended on in *chronical* cases so numerous? Mineral waters, salts, artificial sudorifics, soap, mercury, steel, a few vegetables, and proper exercise, serve all intentions; the rest are of little more use than to conceal the ignorance of the doubting physician, and by amusing the patient to prevent his despondence. As to drugs recommended by the ancients, HIPPOCRATES, THEOPHRASTUS, PLINY, and DIOSCORIDES, we are acquainted certainly with but very few of them, because they omitted giving delineations of herbs so common with them. And the moderns have busied themselves more in describing the species, than the virtues of plants, which they have rather borrowed from what the ancients delivered, supposing

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ing an agreement in kind.—As to Arcana and NOSTRUMS, let those who have them, keep them, till they can convince impartial judges of their real worth, and then they will hardly fail \* of a sufficient reward for their discovery. A medicine looses no reputation by the publication of it, unless upon universal experience it is not found so safe and efficacious, as was pretended.

Lastly, what is there in the most curious *preparations* of such extraordinary consequence? Mercury, opium, the bark, fire and water, 'tis well known, are our most potent remedies, and these, as nature imparts them, are more useful, than any way prepared by art.

Thus, there is no room to despair, whilst simplicity guides; but the event of intricate labour is fallacious. How simple is PITCAIRN's explication of the wonderful vertues of mercury, from the considera-  
tion

\*Mrs STEPHENS's Saponaceous dissolvent of the stone in the kidneys and bladder may be one proof of this assertion.

tion of those two qualities only, its gravity and divisibility! The same may be said of HOMBERG (a man the most dextrous in making experiments and cautious in reasoning from them) in his explanation of medicinal and pestilential qualities. More arguments might be produced, were not those alledged sufficient.

A beautiful contrast is observable in these orations; the former represents the most insignificant part of the body (among the Europeans generally abraded as an excrescence) in its ultimate structure inscrutable; whilst the latter makes every part apparently the more simple, the more accurately it is scrutinized, and diseases in general (produced by one cause only) to be less complicate, than the part or parts affected. This paradox might be easily solved, but that is not our business at present.

The one was evidently intended to humble an indolent pride, whilst the other encourages that diligence, with which a person may modestly expect considerable success in his profession.

## S E C T. II.

*Of all Dr Boerhaave's Writings beside his  
Orations and Thesis.*

**A**NY account of the larger works of so justly celebrated a physician may be thought needless on the presumption, that scarce one of the faculty is unacquainted with them. But, as it has been found, that some among us have been pleased to censure our author, who either have not perused his *genuine* writings, or not with sufficient attention\*, it may in justice be expected, that we endeavour to point out the peculiar excellencies of his several works, and so distinguish the *supposititious* † which disgrace his name, that they may no longer be obtruded for *genuine*.

From

\* The stile of his Institutes and Aphorisms is so laconic, that nearly a like attention is necessary for the thorough understanding of those books, as is usually given to treatises of mixt mathematics, and a panegyric, instead of a vindication, will be deemed most meet after due consideration.

† Of which he highly complains in the preface to his Chemistry.

From the preceding section, and account of his life, it partly appears how well he was qualified for *teaching* no less than practising physic\*; possess of the endowments and advantages above mentioned, he soon converted them to the service of the public. Whilst patients experienced the benefit of his surprizing sagacity, his incomparable collection of the most certain doctrines in medicine was communicated not only to his pupils, but to the world.

For the first edition of his *Institutiones Medicæ* appeared in 1707, two years before he was created a professor, about six years after he began to officiate as lecturer. p. 31.

This

\* A Science notwithstanding the representation lately made (p. 93, &c.) of its facility, to be ranked deservedly among the most difficult, since from the frequent variation of its objects the application of its surest rules (level to midling capacities) is too often rendered fruitless, when recourse must be had to the ready suggestion of a perspicacious mind to substitute new helps in the room of those relied on before; and if a man indulges himself in hypotheses, he may have to unlearn, what in spite of all his caution he at first imbibed as almost indisputable.

This book has been reprinted at Leyden four times (in octavo) with some few additions. After, a succinct but correct history of the origin, progress and success of the art; the consideration of its principles, and the usual division into its five branches, physiology, pathology, &c. he enters upon the disquisition of the former, that is of the animal œconomy with an examination of the materials or aliment, which by the fabric and action of the animal machine is converted into an animal substance; pursuing it through its several stages, he remarks its various changes from *manducation*, the first animal action upon it, to *sanguification* the last it has as yet been traced to; and describes the several organs with the diverse secreted humours in the same order, in which they are found to contribute to this alteration of the food. The new light afforded to this extensive doctrine by his singular distribution of its parts, the rejecting those hypotheses which owe their birth to the wild conceptions of metaphysicians and chemists, and the comprehensive brevity of the  
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the whole, have recommended this work to the perpetual esteem of the most eminent physicians. It was his constant maxim not to deliver any proposition as certain, but what was grounded upon observation, experiments, or clear deductions from them. The references to the tables and authorities of the anatomists and physiologists, who had best described each part there treated of, (having first \* compared their descriptions with the part or preparation it self) greatly conduce to an easy acquisition and retention of physiological knowledge ; and indeed this † theory  
of

\* That no new discoveries or observations might escape him, as well as to refresh his memory, he became almost a constant attendant on the public lectures of Professor RAAU, and of ALBINUS afterwards, though formerly his pupil, without thinking it derogatory from his character.

† By the title of *Institutiones Medicæ* rather than of *Theoria Medica* he here avoids the disputes about the importance of theory to a physician, and whether physic is an art or a science. This controversy could scarce have subsisted, one would think, had not medical theory been confounded with meer hypotheses in physic ; and it may be satisfactorily decided by our author's dictata on Sect. 22, of his *Institutes*. See HALLER's, H. BOERHAAVE *Prælectiones Academ. &c.* p. 53, 54.

*Of the WRITINGS of* [PART II.]

of the science claims a regard, as much superior to any other, as was that fund of learning, which furnished it from the united principles of mathematics, anatomy, philosophy and chemistry. No wonder therefore he was whilst living universally acknowledged the best theorist in his profession, and that the fame of this book was not confined to Europe, for both it and his Aphorisms, or practice of physic, were by order of the Mufti translated and printed in the Arabic language at Constantinople, to spread his doctrine throughout the Ottoman Empire\*.

The next year this theory was seconded by his practice of physic, inscribed *Aphorisms for the knowledge and cure of diseases*, which book has likewise undergone five impressions at Leyden. These works reflect a lustre upon each other. In composing

\* The *Institutiones Medicæ*, was one of the first Books, which occupied the press erected by the grand Vizir at Constantinople; and a remote part of Asia afforded another instance of the Author's extensive fame, by a Letter from thence with this address.—To Mr BOERHAAVE Physician in EUROPE.

posing the latter, small in bulk, but yet with important contents, the production of intense labour, and exquisite judgment, he acknowledges himself most indebted to the successful industry of the Greek physicians, those curious observers and followers of nature. Whatever in HIPPOCRATES is founded on faithful observation and firm experience, is here delivered in the Hippocratic stile, well digested, and more compendious than the original; with that he nicely incorporated what is of greatest use in the rest of the Greek and Latin fathers of physic, and in the best of the Arabian, as well as of the modern writers: But from the Arabians with all their ingenuity, assisted by those labours of the antients, finding the science to have been detrimented more than improved; and fearing, that even the moderns, notwithstanding the helps they might receive from their predecessors, their own discoveries in anatomy, improvements of natural philosophy, and of those arts that are applicable to physic, have likewise contributed more to its declension than advancement,



vancement, by indulging such a licentiousness in hypotheses, and by their rash ambition to raise the art at once to its highest perfection, whilst they have seemed either to contemn or to be unacquainted with the best authorities, or made such injudicious tumultuary collections from them as rather obscured than illustrated it; he prudently collected in his adversaria, from all these authors, what in each of them appeared so just and rational, as must not only gain the assent of every skillful physician, but had been already confirmed by his own experience; and interweaving besides what his further observations in practice, together with some later discoveries of ingenious men furnisht, he formed this unparallel'd system; which pleased almost every body but himself, who modestly declares, that he was too sensible of its defects, especially if compared with the works of the ancients. However in justice to him it must be confest, that one receives from it all the advantage without the inconveniences of a system, since here all the principal distempers are represented together

together with their mutual relations, and the causes, concomitants, and cure of each are stated distinctly and accurately: it is not a collection of superficial views, or transient touches, the common objection to most systems.

Some may think it defective, because no formula of medicine is to be found in it; which was the result of caution: he was well aware how forward empirics are to tamper with any prescript tackt to the name only of a distemper, who generally presume an acquaintance with those two (without troubling themselves about the constitution, diagnostics, &c.) a sufficient qualification for the practice of physic, notwithstanding their fatal mistakes almost daily demonstrate their error. \* How successfully he has applied his knowledge in mathematics to medicine, is evident

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\* Remedies then alone deserve the appellation, when critically exhibited in respect of time and indication; and therefore he proposed here to give only the general indication of cure, leaving it to the practitioner to adapt particular forms to the particular circumstances of each case, as directed by the rules of the art, or by his *dictata* on this book.

Of the WRITINGS of [PART II.  
 from the method in which the diseases are  
 ranged ; beginning as in geometry from the  
 most simple he proceeds gradually to the less  
 and more complicated, whereby the pre-  
 ceeding illustrate the subsequent, and nau-  
 seous repetition is avoided. Among the  
 former of these he found it necessary to in-  
 clude chirurgical cases, † the thorough  
 knowledge of which he proves in his lectures  
 to be indispensably necessary to the forming a  
 good physician : esteeming surgery the most  
 certain and fundamental part of physic,  
 he made it the subject of his practical lec-  
 tures during about half the annual course.

The grand objection against these books  
 of institutions and aphorisms, is, that the  
 conciseness of the stile creates obscurity ;  
 for

† In this he may be supposed to have followed  
*Johnston's idea vel syntagma universæ medicinæ practi-  
 cæ*, which the learned *Bonetus* makes the text of his  
*polyalthes, sive thesaurus medico-præcticus* ; but yet  
 the several distempers here are so far from being dis-  
 posed with the like connection and immediate depen-  
 dence on each other, as in *BOERHAAVE's* apho-  
 risms, that it could be but of little service to him.

‡ A short account is given of this book of apho-  
 risms from the *French* translation in 1737. See  
*Journal des sçavans, Mars, 1739. p. 375.*

for which he apologizes in the preface to the latter, “ that they were intended only “ for his own pupils, serving as the text “ of his annual lectures,” the institutions for a text of the theory, and the aphorisms of the practice of physic. His manner (like that of the other eminent professors in that university, after they have published a compendious system for their lectures) was to read a paragraph, or whole section if short, to explain it if needful, expatiating on it without notes before him, and so largely sometimes, especially in the first chapters of these books, that he did not proceed further than one or two pages of either book in a whole lecture, which usually lasted an hour. It seems therefore intended his dictata should be requisite (at least for students) to illustrate several passages in these books, which are allowed to comprize the most important and fundamental doctrines of medicine in much less compass than any other extant. They were both translated into English disadvantageously enough, and the Aphorisms in 1737 into French. *Dr HALLER*, formerly

merly a pupil of BOERHAAVE's, published last year at Gottingen in the dutchy of Brunswick one volume of four, (which he intends within a year) entitled *Herman-ni Boerhaave Prælectiones academicæ in proprias institutiones rei medicæ*: a thick octavo. Herein are contained BOERHAAVE's dictata on the book of institutes, taken by Dr HALLER in the years 1725, 1726, 1727, for those extempore dictates abounded every year with fresh arguments on the same topics. These dictata he makes the text of his book, and gives notes upon them by way of illustration, confirmation, or improvement; for he has added some discoveries of his own which BOERHAAVE was unacquainted with, and some authorities which had escaped him; thus attoning for the deficiencies of his manuscripts.

The dictata on the aphorisms were printed at Amsterdam, under the name of PADUA, about ten years ago, in five volumes octavo; but so scandalously incorrect, as if the editor had neither understood the subject or the language, nor intended

intended benefit to any except the proprietors of that edition. But now *Dr* VANSWIETEN, a physician of the first rank at Leyden, has sent to the press his commentaries on the aphorisms, which will be in 2 vols. 4to, ample reparation is likely to be made to the publick. He was many years under BOERHAAVE, and afterwards, at the request of the English students, a lecturer on pharmacy. By adapting short hand to the Latin tongue, he took the dictata almost verbatim, and from his abilities, as well as labour there is reason to expect an accurate edition of this work, which happily compleated, will be equivalent to a library of practical writers, or at least the best substitute for all besides those, who have given histories of particular cases, or treated on some cutaneous diseases and on such topical disorders, as those of the eyes, ears, &c. tho' the affections of these two organs may be supplied from the public lectures (*BOERHAAVE* gave upon each of them) hereafter mentioned.

His *Materia medica* relating entirely to the aphorisms should be considered in this place, although his first edition of it was in 1719. It was composed solely for his own college, and not designed for the press; but upon receiving a surreptitious copy of it published at London 1717, in 12ves, full of errors, too dangerous to pass uncensored, being compelled to revise and correct, he also augmented it. It was reprinted in 1727 with farther corrections. Nevertheless he dissuades every one from using it, who is unacquainted with the history of the disease as delivered in the aphorisms, (to which the sections refer,) and explained by his comments upon them; never recommending any particular prescription without specifying the case with the minutest circumstances, in which alone it was advisable; always admonishing, that what was ever so proper in any distemper, upon an alteration in some one symptom or circumstance might prove not only ineffectual but pernicious: therefore he, who is best versed in the doctrine of the aphorisms, is the best judge of the application  
and

and usefulness of those formulæ, in commendation of which 'tis sufficient to alledge, that their success, when administered with the restrictions enjoined, has given general satisfaction to those who have experienced them. How ridiculous therefore is their presumption, who unjustly censure what they never qualified themselves to understand, or never submitted to a fair tryal? He will merit exceedingly of the public, who produces a specimen of medicines adapted with greater judgment and accuracy to the particular indications of so many and mighty diseases. But 'tis objected, that in these and the author's extemporaneous prescripts, the gratification of the eye or palate is not consulted; and it may be replied, that his countrymen are happily indifferent about such niceties, being rarely displeas'd with what answers the intention soonest and cheapest; whereas in some places an affectation of extraordinary neatness in prescription has been attended with a proportionably less regard to the efficacy of medicine; and loads of insignificants have proved



proved at length more nauseous, and much more expensive, than the small quantity, which, though distasteful, would at first have sufficed for the cure; our author was wont to recommend that injunction of CELSUS, to effect a cure speedily, safely, and agreeably; yet he thought the last circumstance deserved by far the least consideration.

Another objection is raised against the multiplicity of ingredients, many having the same virtue which are crowded into one prescription. This he obviated by intimating to his audience, he never intended they should all be used at once, but only two or three of each class, such as the physician might prefer, or the place and season afford, increasing their quantity so as to compensate for the omission of the rest. A third and very material objection, that has prompted perhaps mercenary men to invective more than any other, is, the form of pills, and decoction or apozem, frequent in his extemporaneous prescripts, as in his pharmacopœia, which forms he apprehended  
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in general the most advantageous to the patient, though unluckily the least lucrative to some retainers to the art. Indeed the fashion of his country might at first lead him into the more common use of these forms, variety of fashions obtaining in the pharmacy, as well as cookery of various countries; but afterwards the greater efficacy confirmed him in the use of them; nor was he likely to have been deceived as to the form, in which the materia medica is most successful, who by his works appears to have been conjunctively the best botanist and chemist of the age. Besides, in regard to all these objections it should be considered, that he prescribed not to a court only, but to the world, to pupils who were to practise in all parts and places, in the army, in fleets, among rich and poor.

For the service of his pupils chiefly he published, in one volume octavo, an index of the plants in the physic-garden, with which it was stored in 1710, the year after he was made professor of botany. In 1720 he gave a second index in two volumes

volumes quarto, prefixing a new and large preface, with a plan, and short history of the physic garden, wherein he makes honourable mention of all the professors preceeding him, and relates the improvement it received from each of them. He has given also several plates of species of plants never before publisht. In this space of time he had doubled the number of plants, and raised it to the most flourishing state of any physic-garden in the world; exhibiting a specimen of almost all the productions from each quarter of it. Nor was it more singular in respect of the number, than of the strength and vigour of its plants, the concinnity and regularity with which they were disposed. In this index he classed them more judiciously than any before him, not servilely following (like some of his predecessors) the method of MORISON, RAY, &c. but selecting from the best authors, as well as inserting of his own, what he judged most conducive to the forming a better system. LINNÆUS confesses him to have formed his *genera plantarum* in the most accurate

accurate manner, being the first, and only botanist, who took to his assistance all the parts of plants concurring to fructification, and gave so clear a verbal description of them as to render the engraver's art needless. Although some of the moderns had merited by augmenting the catalogue of plants, or classing them more commodiously, they had on the other hand greatly loaded a science unavoidably too burthensome to the memory, by giving new appellations without reason to plants, that were long before properly named and accurately described. These innovations (for which JOHN BAUCHIN, MORISON and TOURNEFORT were most culpable) he justly condemns and studiously avoids. This made him impatient for the publication of the pinax proposed by consul SHERRARD, wherein that prince of botanists intended to fix the divers names given to each plant compleatly described, in so correct a manner, that there should not be the least inducement to forge any new thenceforward, hoping to leave this science so far as he carried it immutable  
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for ever. Altho' it is certain the species of plants never vary from themselves indistinguishably, yet their external habit, according to the difference of soil and situation, sometimes varies so much as to deceive whoever does not distinguish them (as it is the happiness of the present age to do) by the parts of fructification, which never alter. But since botanists, after comparing them thus settled with the description of authors, have collected all the synonyma, which by divers authors had been given to each plant, and since VAILLANT and others have given exact descriptions and delineations of them from the places where they naturally grow, and also by preserving them betwixt paper formed so compleat an *Hortus siccus*; they have been able to determine the real number of plants already discovered, and to secure the discriminate knowledge of them to the latest posterity. There was yet another motive to the printing his index. He perceived the cultivators of botany were not so effectually excited to communicate of their duplicates, as by an assurance they should in  
return

return have their deficiencies supplied; and therefore if he appeared by this index possess of what they wanted, he was certain of obtaining his request from them on the foot of exchange. The success answered his expectation, for as his stock increased, so did his correspondents; and such was the number of plants thus procured in ten years after the first index, that, as was before hinted, the ground then allotted for this garden could not now contain half the plants. He was likewise so careful his correspondents should not repent the services done him, that besides retaliations in kind, their names are immortalized in that elegant oration above-mentioned on resigning this professorship. P. 44. There in high strains of gratitude he recites the friendships and favours of the SHERRARDS, Sir HANS SLOANE, Baron BASSAND, and about forty more of different nations; but These deserve particular mention, as names whereon he dwells with much complacency. Hence it appears how extensive and laborious the epistolary commerce was in this single branch

branch of his profession. Besides his botanical knowledge was not of the barren kind, but furnisht him new subjects for chemical operations, and new medicines for use. After about seventeen years when he had, in his lectures upon the index in the garden, given a much fuller description of the plants, with the history of their virtues, several manuscripts of the dictata were reduced into one, and publisht in Holland fictitiously stiled *Rome* in 2 vols. 8vo, in 1727; but although not free from the incorrectness of a supposititious work, it is not to be contemned.

BOERHAAVE, like Sir ISAAC NEWTON and other great men, had so much reason to be satisfied of the truth of what he publisht, that he declined controversy, to which some trifling exceptions or malevolent insinuations would have irritated men of less judgment and temper. He thought among the impartial truth might be trusted to vindicate itself; but when the investigation of it could only be effected by entering the controversial list, no man was more ready to engage in the dispute,

dispute, or more genteel in conducting it. This is exemplified in his epistle to RUYSCH in 1722, wherein he defends MALPIGHI'S doctrine of the glands against that curious anatomist, and sets the arguments in a stronger light, than MALPIGHI himself: Well knowing, that RUYSCH had then both the best injection and manner of preparing subjects for it, besides the advantage of a piercing eye so accustom'd to microscopical observations, that no man was likely to apply glasses with more success to such anatomical subjects, with which he was continually supplied by the frequent executions at Amsterdam; and perswaded also that no requests would prevail with him to scrutinize the minute structure of the glands so effectually, as an endeavour to establish a contrary doctrine against a man impatient of contradiction, BOERHAAVE concluded by this method, he should be instrumental to those desirable discoveries in physiology, which he had neither leisure nor convenience to make himself. The event justified his conclusion:

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Notwithstanding the Malpighian doctrine was refuted, yet the controversy on our author's part is managed with that dexterity, generous frankness and apparent unconcernedness about mere victory, as to make this letter highly entertaining. In disputes to which the desire of information is the principal incentive, neither candour nor mutual benevolence are sufferers, and the conquer'd equally shares the pleasure of the conquest: So here no sooner was that sole end in view answered, but with satisfaction he dropt the controversy, and his antagonist was rarely named by him afterwards without an epithet of respect.

In 1724 he publish'd the case of Baron WASSENAER, which is justly deemed an incomparable specimen of the art of description for investigating the real state of the patient, and the principal indications, in most intricate distempers.

In conjunction with the present professor ALBINUS he gave an edition of all the anatomical and chirurgical works of VESALIUS in 1725, with the life of that  
learned

learned anatomist. The recovery of those most accurate tables of EUSTACHIUS (engraven by his own hand) from rust and obscurity, after lying dormant about 150 years, was reported to have been partly owing to a hint of BOERHAAVE'S in his preface to an edition of the *Opuscula Eustachiana*, wherein he laments the loss of them; for the Roman or first impression of these plates did not appear before 1714.

He obliged the world with another accurate history in 1728 of an uncommon case, which proved fatal to the marquis of St Auban after ten months incessant struggle with it.

The same year appeared his treatise on the Venereal Disease, serving as a preface to the last edition of the earliest authors on that subject. It was soon reprinted by itself in London in folio and octavo at the same time, and also translated into English. There were some idle reflections cast upon it in a jejune treatise on gleans, the author of which unfortunately mistaking scurrility for argument, and buffoonery for wit,

had not deserved our notice, otherwise than as his manner of writing exhibits a perfect contrast to BOERHAAVE'S controversial epistle just recommended.

His elaborate edition of ARETAEUS appeared in 1731, when he was proceeding with Dr. GROENVELT to give a complete Edition of all the Greek physicians except HIPPOCRATES and GALEN (already published by CHARTERUS) and had made a considerable progress in NICANDER; but his innumerable occupations with the deplorable brevity of his life afterwards prevented the execution of this great undertaking. What was done of ÆTIUS is in the hands of VANDERA, bookseller at Leyden, and his NICANDER, with other of his manuscripts are in the possession of the KAAVS beforementioned (*p.* 49) of whom it is thought they may be purchased.

The following year produced his elements of chemistry in two volumes quarto, which, had it been the only labour of his life, would deservedly have perpetuated his memory. The state of chemistry when  
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he entered upon teaching it has been represented *p.* 37-40. Let us now survey what he has done for its advancement, who was not less able, but much more willing to build, than to demolish. The work is divided into three principal parts.

The first contains a brief and learned history of the origin, progress, culture and fate of the art, of the various sects of chemists, and of the chief authors in their chronological order, with some short remarks on their agreements and dissentions, and on the advantage or disadvantage to the art thence arising. No author is undervalued, whilst he recommends those of distinguished use. This part may be properly annexed either to LE CLERC's essay of a plan for the continuation of the history of physick, to Dr. FREIND's history, or to both, as near half of it is conversant about the chemical physicians of the later centuries.

The second and largest part comprehends the theory of chemistry, not a hypothetical or fictitious, but a true and operative theory, founded upon those gene-

ral propositions alone which are deducible from many, common, and certain chemical experiments, such as always succeeding alike warrant the inference of a general truth; extending this very rule no further than to those particular bodies, which are observed to be of the same nature, since the effects of the peculiar virtues of particular bodies cannot be foreknown by any general theorem, as resulting from the distinct nature proper to this or that body alone. In forming this theory, he was not only assisted by those physical indisputable truths, discovered by chemists of such general use, as to afford instruction for the performance of all operations truly chemical, but also by a prudent application of other truths demonstrated in physics, mechanics, hydrostatics, hydraulics, &c. so far as the properties common to all bodies exist in chemical subjects. How requisite caution is in the use of these helps appears in the deviations from general laws caused by some singular powers of bodies, as from the law of gravity by the interfering of magnetism, electricity,

tricity, or of chemical menstua; since gold is dissolved and suspended in so light a fluid as Aqua regia: But under the aforesaid restrictions those branches of science prove serviceable and never prejudicial to the art.

The third and last part compleats the whole by a judicious collection of processes, exhibiting the chemical manner of analysing, and changing bodies, according to the rules of the art, and the end in view. As common things, if useful, are not omitted, so needless repetitions are avoided, both by an happy disposition of the processes, making those previous which are necessary to the illustration and execution of the subsequent, and also by the relation of the theorems in the foregoing part, from which all the operations will be easily understood, and reciprocally by these is the truth of those theorems demonstrated: Thus the head and hand proceed with mutual advantage. Here we see what it is surprizing no systematical writer in chemistry has evinc'd before, how plentifully the practice of this as well as

other arts rewards the discreet labourer. How much thereby the judgment is enlarg'd! What a quickness of apprehension is acquired! What prudence, the result of experience, that not only shuns those unnecessary circuits to knowledge, by which mere speculative men are often retarded, as foreseeing what is useless, but also prevents those dangers, to which the unexperienced in this art are so liable! What sagacity for applying the same knowledge to better purposes, or for making it more subservient to the operator's own purpose! Or lastly, how great the advantage of method, which here, from a chaos of experiments, and many of those by illiterate men too, has formed a science contributing more to the perfection of natural philosophy than any other, and not less to the improvement of physic. Many are the difficulties conquered only by a methodical disposition of some general rules deduced from a collection of genuine experiments, even of those which were at first but casual. We have extracted the following specimen of the

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the general method observ'd in relation to the processes, not only as it may be agreeable to the natural philosopher and physician, who has not yet conversed with this book, and may refresh the memory of those who have, but as it ought to be followed by all writers on this art for the future.

As one example is here given of every pertinent and useful operation, to which any singularity in the performance is requisite, so useless repetition is prevented by exemplifying the process in one subject only, and subjoining the bare enumeration of others admitting a like treatment. Having thus cautiously collected his number of processes, he disposes them in the mathematical order before hinted, as far as the subject allows, and this indifferently whether they respect philosophy \* or medicine,

\* Chemistry had been treated rather as a separate science, having little or no relation to natural philosophy or mathematics, 'till BOERHAAVE in his lectures represented it as but a branch of the former, and illustrated it by the latter; Dr FREIND's chemical lectures were not read 'till two or three years after BOERHAAVE began his courses of chemistry, and their publication was several years later,



medicine, since hereby much time, labour and expence is saved in gaining an acquaintance with the chief use of the art in its utmost extent, both as it teaches and discovers the powers of nature and the means of health. The three kingdoms or sorts of bodies, the subjects of chemical operations, *vegetables*, *animals*, and *fossils*, are examined in this order of succession, as the first are not only more ready at hand, but afford subsistence immediately or secondarily to animals, so that these are a different modification of them: Besides, the constituent parts of vegetables are simpler, and the chemical separation of them easier. Indeed the constituents of Fossils are the most simple, but the art of treating them, the requisite instruments and operations are much more compound, intricate, and difficult.

Having cleared the way thus far, nothing required more deliberate consideration and greater discernment, than to determine the leading processes in each kingdom. This was at length effected by attending to three things, the operation itself,

self, its subject, and instruments, with the several conditions in each which demand a priority.

A *chemical operation* is the making a change in any body (by the usual chemical instruments) productive of some end proposed by the art itself. These four conditions therefore were found necessary to constitute the *primary* operation in a course of chemical demonstrations. That it be

1. Most easy in respect of the *matter* operated upon, as exerting the least violence.
2. Most *simple*, not compounded of various operations, nor requiring many instruments.
3. That the *alteration* hereby superinduced on bodies should not be so great, but that a considerable resemblance of their original form and nature should still remain; so that 4thly the effect of this operation should rather be the meer *separation* of a part or parts (so as to preserve the very same state of them, that pre-existed in the compound) than a production of any thing new by *virtue of the operation itself*; that upon uniting the parts thus separated, they may recompound the  
original

original body ; since many chemical productions are creatures of fire, or of the operation only.

An equal number of advantages flow from the observance of these four conditions ; the certain knowledge of the parts as they pre-existed in the subject under examination ; and of the nature of the residuum, as having been little or nothing altered by the operation ; a liberty of examining by new operations this residuum, for a further discovery of those native parts still remaining unchanged ; and lastly, a clear comprehension both of the action, and instruments employed in this experiment.

The *subject* of the first operation ought to be such, as not only yields thereupon what is the most simple and homogeneous producible by any operation whatsoever, (water may be deemed a production of this sort) but what also contributes to the composition of other bodies : Besides, it should be easily separable into the parts intended ; for as simple as gold is, 'tis most difficult to resolve it into its constituent Parts. Thus  
will

will the separation be in the most natural order, and the remaining parts adapted to disclose themselves by subsequent operations.

Lastly, the *instrument* in this operation should be so simple, that the operative cause excited by it may be easily understood and applied, and that the matter operated upon may not be contaminated by any commixture of the parts of the instrument. It ought also to be of such universal use, as to be concerned in all the following processes, lending its assistance to other instruments. Moreover, it must not alter the form of the whole subject any further, than is necessary to the performance of this first operation. Nor lastly, should it by its influence make any considerable change in the different constituent parts of the subject, or in their arrangement; otherwise confusion, instead of light, would attend the use of the instrument in these philosophical enquiries: But, when thus circumstanced, the operator will not only have an accurate knowledge of the efficacy of its first action, but also  
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of what it contributes by its presence to future operations.

A due regard to these conditions rewards us with a discovery of the real constituent principles of the subject, and directs us to this first operation, as performable by the gentle action of such a degree of fire as is diffused every where, when apply'd to the liquid and most volatile parts of *vegetables*, since thus an easy separation is effected with the least alteration, by an instrument concurring in every process. The first therefore of this course is the distillation of a fresh gathered herb abounding with volatile parts (as rosemary) in a pewter alembick, so as to separate the water of the plant by an heat not exceeding the ordinary heat of summer (according to FAHRENHEIT'S Thermometer) causing it only to exhale in the form of vapour. Having thus singled out the *first process*, the next progression to infusions, and so on to extracts; vegetable salts native and lixiviate; oils, by expression, coction and distillation, &c. was more obvious.

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But, when he came to *animal subjects*, the difficulty still recurred of knowing where to begin; 'till considering that all animals owe their substance to vegetables, either immediately, or by the mediation of those animals which feed on vegetables, and consequently, that an animal consists of that matter, which when received was not animal, but by the proper action of an animal-body is converted into an animal nature, he concluded these processes on animal subjects ought to commence from that matter, which tho' vegetable in its origin, begins in the animal to lose its vegetable and to put on the animal nature; and which likewise may be separated from the rest of the animal parts, and examined by itself; that so its successive changes may appear, especially whilst it retains much of its vegetable nature. By proceeding thus gradually, we obtain a better knowledge of the nature of the human body, the end of all this labour, than by beginning (as the absurd custom has been) with the examination of a part, that has undergone all the actions of the body.

Having

Having compleated his course on vegetables in 88 processes, he makes the examination of (cows) *milk* the first of those on animal substances, as it not only is somewhat affimilated to the animal nature, but affords the matter of nutrition to all animals that make milk, both male and female; insomuch that all the solids and fluids are (by the operation of the animal organs) supplied from it. Nevertheless whilst milk, it retains so much of the vegetable nature, as by degenerating to become acid; whereas all substance purely animal is incapable of acidity, and by corruption becomes putrid and alcalious.

His last process therefore on vegetables, that of *putrefaction*, is an apposite introduction to those on animal subjects. After an examination of these in 39 processes he proceeds to Fossils, and is naturally led to the consideration of saline bodies before others, as being almost ever assisting in the preparations of the rest; and first to Nitre, as most a-kin to animals and vegetables in its origin, and participating of all the three kingdoms. Next follow in their  
natural

natural order the processes on sulphur, which precede metals for the same reason as do those on salts; after an examination of these bodies in 21 processes on salts, 13 on sulphur, 43 on pure metals, and 21 on semimetallic bodies saline and sulphureous, he concludes (where some celebrated chemists have begun) with the chemical phenomena and doctrine of solution, coagulation, precipitation, effervescence, the production, alteration and destruction of odours, tastes, and colours, which cannot be easily, if at all, explain'd without the help of the preceding processes.

Thus, he finishes the operative part of chemistry with equal success, as he had the theoretical, having reduced to 227 processes all those, which are requisite for the understanding any other.

After due attention one is at a loss whether to admire most the illustration of the art from mechanicks, and natural philosophy; the analyses of vegetables, animals, and fossils drawn from experiments or their necessary consequences, with the instructive analogy thence result-

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ing; the exact scrutiny into the virtues of chemical productions, with the faithful and ingenuous relation of them, exempt from the usual spagirical jargon, and rodomontade; the easy access open'd into the three natural kingdoms after the expence of penetrating so deeply into the hidden recesses of nature; or lastly, his excessive modesty in treating the subject, who is so far from deciding peremptorily in any particular, as to put every thing dubious to a reference; surely such a conjunction of excellencies in one performance must extort commendation from envy itself.

But to convince the world how much the best things may be misrepresented, especially when hopes are entertained of gratifying malice with profit, the year after BOERHAAVE had himself publish'd his chemistry, there appears a book in 8vo. intituled, *Dr. BOERHAAVE'S elements of chymistry faithfully abrig'd from the late genuine edition, to which are added curious and useful notes rectifying several opinions, &c. of the learned author, by a physician.* The abridger, which is all  
can

can be said in his praise, had the modesty to give the first edition without his name; but it was reprinted in 1737, with the name of EDWARD STROTHER, M. D. \* with respect to, the errors of the abridger in his own preface, and in some of his translations directly contrary to the sense of the original; the mutilation of his author's sense by incoherencies; the injudiciousness in attempting to contract, what was concise in the original, whilst nauseous repetitions of the usual phrases of address to the audience are inserted in ridiculous terms; the impertinence of, as well as mistakes in, several of the notes; the barbarity of stile; the rude and assuming manner of treating one in the esteem of the world so much his superior, and the malevolent disposition to put the worst construction on every thing, whilst many excellencies in the original work, which strike every intelligent peruser, are obscured, suppressed, or perverted; It is hard to say which of these articles gives most dis-

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gust

\* See what BOERHAAVE writes concerning this Abridgment in the Appendix. Epist. 4.

Of the WRITINGS of [PART II.  
 gust to a candid reader, but certainly all  
 of them put together demonstrate this per-  
 formance to be such, as intitles Dr STRO-  
 THER to the character of an *author* ra-  
 ther than *abridger*, it being more unlike  
 the genuine work, than that wretched  
 spurious edition printed from incorrect  
 copies of the Dictata eight years before at  
 Leyden, under the name of Paris, in two  
 volumes 8vo. 1724, of which BOER-  
 HAAVE complains in his preface; and  
 much inferior is it to the edition given  
 from that, and additional manuscripts by  
 Dr SHAW and Mr CHAMBERS with  
 useful notes in 1727. Altho' for reasons  
 mentioned this abridger and annotator  
 was secured from the animadversions of the  
 author, yet he has not escaped the just  
 censures of Dr ROGERS in a letter to  
 Dr MORTIMER, publish'd soon after,  
 wherein *the learned professor is vindicated  
 from the unjust representations and cri-  
 ticisms of his abridger.* Those who  
 choose a translation of BOERHAAVE'S  
 chemistry may be supplied with that by  
 Dr DALLOW in two volumes quarto,  
 which

which, as altered in some places with the author's approbation, is more correct in that respect, than the original: and if they would enter still farther into the subject, there is now in the press another translation by *Dr* SHAW, with such notes as will neither be a disparagement to the work itself, nor to the establish'd reputation of their author. On the contrary, as one so much master of the subject will throw out the redundances, and contract the diffuseness in some parts of this work occasioned by its being in the form of annual lectures, (which BOERHAAVE wish'd for leisure to have done himself) he will well deserve the thanks of philosophers and physicians.

To chemistry also belong those three memoirs on quicksilver, which he sent to the royal societies of London and Paris, publish'd in our Philosophical Transactions, N<sup>o</sup>. 430; 443; 444; as he has here communicated the result of much reading, and of laborious experiments in reference to transmutation, which after several repeated perusals of PARACELsus, HEL-

MONT, BASILIUS VALENTINUS, and other alchemists he was ready to conclude feasible, the following abstract may satisfy the curiosity of those, who can't easily come at the original.

The philosophers the most devoted to experiments confess, that chemistry affords the best instruments for discovering the origin of bodies, with their several and peculiar virtues ; and whoever has conversed with the eminent chemical writers must acknowledge, that GEBER and the first alchemists excell'd in their explications of the nature of things. In my chemical enquiries, I perceived these authors agreed about the *generation* of metals from a sort of *metallic seed* converting its proper aliment into its own substance, in like manner, as the seeds of plants and animals. Thus the vivific seed of gold, finding suitable nutriment, and a convenient matrix, with a due degree of heat, transforms that aliment into its own nature. The matrix or bed of gold, and other metals, is observed to be a solid, pure, rocky substance ; in which, what is unaccountably

accountably strange, it is found close confined: The heat of the *mine* seldom equals that of an healthy person, being near the common heat of *May*, which is under  $60^{\circ}$  or generally about  $50^{\circ}$  by the \* Fahrenheit Thermometer; they therefore direct the digesting the pregnant matter of the grand secret in a clean sealed glass with a *May* heat; but are not so express as to the metallic aliment: and as to the feminal, and engendering matter, most agree, that quicksilver is the matter common to all metals, which, by virtue of some vital seed, is changed into a metal receiving its denomination from the singular property of the feminal efficacy; wherefore each metal, by a mature concoction of the said quicksilver with the metallific energy (called sulphur) obtains the perfect species of that particular metal; hence each metal is resolvable again into these two distinct

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parts;

\* The Thermometer of Fahrenheit, recommended by BOERHAAVE as the most useful, was made of so strong a tube filled with quicksilver, that it would bear the heat of melted lead, or even of boiling quicksilver; the tube was fixed to a brass scale, No. 32 noted the freezing point, and No. 600 that of boiling quicksilver.

parts: But a turpitude inherent in quicksilver from its very origin is inseparable from it without the utmost difficulty; and whilst undepurated, it is destitute of the simplicity and purity requisite to its being influenced by any one metallic seed, so as to become susceptible of the singular nature of some one particular metal: on the contrary, when mercury is artificially depurated, it becomes a most ponderous, simple metalline liquid, neither by nature, nor art, divisible into heterogeneous parts; in which liquid the enlivened seed of any dissolved metal may compleatly multiply; in which gold melting, digested and ripened, yields the grand reward so much sought and boasted of by Alchemists\*.

This Doctrine induced BOERHAAVE to attempt by various ways the consummate purification of quicksilver. But altho' with a matchless perseverance he tortured it

\* Whoever is desirous of prosecuting this subject, may find it concisely and elegantly treated in the *Declamatio Academica ABRAHAMI KAAU, de Gaudiis Alchemistarum*, at the end of his *Perspiratio dicta Hippocrati*, &c. in which declamation are strong lineaments of his uncle.

it by conuassation, trituration, digestion, and by distillation, either alone, or \* *amalgamated* with lead, tin, or gold, repeating this operation to 511, and even to 877 distillations, what was the result! it appeared rather more bright and liquid, without any other variation in its form or virtues, and acquired very little, if any, increase of its specific gravity: Indeed by constant and violent agitation for months together, it would exhibit a *black*, and preserved so long in certain degrees of heat precipitate a *red* powder, but both these powders by greater degrees of heat were convertible into the self-same quicksilver, from which they were by those means prepared.

Thus to prevent the repetition of the like labours, he has given us, with great fidelity, the fruitless events, as to the primary view, of his own, tho' executed with such due preparation, assiduity, and circumspection; nevertheless conclude not, that these experiments were otherwise altogether unprofitable: the  
numerous

\* An Amalgama is a paste formed by rubbing quicksilver with one or more of the softer metals.



numerous corollaries, he has deduced from them, yield that satisfaction to a real Philosopher, which more than counter-balances the disappointment in regard to other gain; the thirst after knowledge is not so easily satiated, as are appetites of an inferior kind; labours of this sort are seldom lost; if all truths have their use, those which reveal the nature of things must be eminently useful; and how insignificant soever some of them may seem before their several relations are displayed, reject them not as lumber in the philosophical magazine, since sooner or later they usually repay the expence of storage with interest. This will perhaps be verified in respect to that operation given N<sup>o</sup> 430, p. 164; having met with no hint of it elsewhere, and apprehending it may suggest matter for curious speculation to adepts, we make no farther apology for inserting here the translation of it.

*A method of raising* M E R C U R Y  
*with a less heat than that of* BOILING  
 VINEGAR.

“ **B**Y shaking in a glass vessel an a-  
 “ malgama of three parts mercury,  
 “ and one part lead, a very black pow-  
 “ der was produced; upon which was  
 “ poured (into a glass cucurbit fourteen  
 “ inches high) the purest double distilled  
 “ wine vinegar; after evaporating the  
 “ phlegm with a gentle heat, the fire was  
 “ increased a little, but not so much as to  
 “ make the liquor boil. The mercury  
 “ passed over with the phlegm into the  
 “ receiver. By an artifice not much dif-  
 “ ferent I have seen quicksilver rendered  
 “ so volatile, as to ascend by the sides of  
 “ the vessel in my digestory furnace with  
 “ a less degree of heat, than that of an  
 “ healthy person. Was the mercury purer  
 “ then? it was thoroughly dry, and mix-  
 “ ed with metal.”

These instances at least favour the pre-  
 sumption of our author's rivaling the justly  
 celebrated

celebrated HOMBERG in this distinguishing part of his character, that *he was remarkable for extreme accuracy in all his experiments*; nor was his success in several articles less extraordinary; witness the productions of *liquid gold*, and of *solid mercury*; to an enquiry about the former, he answered, 'twas true he had effected it, but not without some mixture of mercury; as to changing mercury into an immutable powder, he allowed he had so far compassed it, as that he himself could not revive the mercury. The most accurate are not absolutely exempted from oversights, but then, they are the readiest in discovering, and generally in acknowledging them.

BOERHAAVE confessed the nitre, which 'twas imagined he had extracted out of the *mercurius præcipitatus per se* proceeded only from the badness of a mercurial preparation of that sort. The fraudulent preparation of it by the addition of nitre to save the expence of fire, might have proved in this case as pernicious to philosophy, as it has in others to the animal constitution; for if this *mercurius præcipitatus* used internally,

internally does not affect the first passages by vomiting or purging, or both, it gets into the road of circulation, and then usually salivates.

Notwithstanding his intimate acquaintance with the sublimer writers in alchemy most deserving credit, he declined much discourse about the subject of *transmutation*; and owned he was scrupulous of mentioning many of his alchemical preparations before his auditors, thro' fear of leading them into temptation: an immoderate desire of wealth, or the laudable desire to excell, has too often pushed the unexperienced upon pursuits of this kind, equally detrimental to their fortune and repute for discretion; to obviate these, and the like delusions, it is much to be lamented that death intercepted the accomplishment of two proposals altogether worthy of him.

The *one* was to give a chronological history of the alchemists illustrated by experiments, demonstrating, that all of them from GEBER to STHAAL had been deluded by one and the same error.

error. The pains he had taken, to make himself master of the contents of the most voluminous of them was such, that he had read over carefully PARACELSUS four, and HELMONTIUS seven times; the latter was his favourite, as may be gathered from what has been said of him before; but he rather esteemed him as a philosopher than a physician, having found the efficacy of his most applauded remedies to fall so very short of their solemnly avowed success: nor did his attachment to the ancient supersede his acquaintance with the modern chemists: mention has been made already of his opinion as to several of them: But there is one, whose surprising discoveries in various other branches of philosophy had perhaps occasioned a less regard to his superlative merits in this particular; BOERHAAVE on all occasions declared Sir ISAAC NEWTON to have been the most accurate observer, as in other parts of philosophy, so in chemistry also.

His *other* proposal was to publish the laborious experiments, he had prosecuted  
many

many years on metals, particularly mercury. It might be as truly said of him, as of any person, that he was equally happy in being possess'd of a vast collection of curious facts, and in his manner of applying them: that he had not only an ingenious attention, which derived observations from sources overlooked by others, but a certain dexterity in facilitating the way to discoveries by series of particular experiments disposed with singular art, conducted with a solid delicacy, with a precision, which, though scrupulous, rejected only what was insignificant; and whilst he generally struck out something new, was ever clear of ostentation, and mysteriousness, reproaches which chemists have too justly incurred. What might have been expected in this work, may be partly judged from the suggestion he has dropped after disclosing his sentiment about the grand arcanum. ‘ This I will inculcate as  
 “ certain, you’ll never repent the exami-  
 “ nation of seasalt and mercury by all che-  
 “ mical tryals.”

*El. Chem.*  
 vi. 1. p.  
 868.

How

How little prospect remains of engaging one to undertake the *former* task, alike qualified to understand, candid in interpreting, and judicious in deciding upon what those affectedly obscure writers have delivered? This must be a discouraging reflection to the few, who have conversed freely with our late professor on these subjects: but this captivating theme is unawares transporting us back again from the works, to an enlargement on the character of our author.

The last of his publications was that work of SWAMMERDAM in two volumes folio, intitled *the Bible of nature*, (in Latin and Dutch joint columns) which owes its preservation with the life of the author prefixt, wholly to BOERHAAVE: it is expected Dr GAUBIUS will favour the public with the addition of BOERHAAVE'S own observations to those of SWAMMERDAM in the Latin tongue.

There were prefaces to new editions of several valuable authors, besides that to *Vesalius*, & *Auctores de lue venerea*, wrote by our professor; as to, *Eustachii opuscula*;

*opuscula*; one volume of *Bellini's* works, 4to, printed at Leyden, 1717; *Prosper Alpinus de præfagienda vita & morte*; *Sebæ Musæum*; *Caroli Pisonis selectæ observationes & consilia*, & *Nicolaus Piso de cognoscendis & curandis morbis*; lib: iii. Ludg. Bat. 1736, 4to.—To him alone we are obliged for the publication of *Vaillant's discours sur la structure des fleurs*, 4to. 1718, in French and Latin, with a preface under the bookseller's name, which has given some handle for repartée to those, who have publish'd his lectures without his leave; and that splendid work *Vaillantii Botanicon Parisiense*, 1727; but for BOERHAAVE, in all likelihood had remained for ever unpublish'd. This excellent botanist, when approaching death gave him concern only as it prevented his putting the finishing hand to his favourite work, the principal labour of the 36 preceeding years, wrote to BOERHAAVE, 15th of May 1721, to intreat his undertaking the publication of this book for cogent reasons he was unwilling



*Of the WRITINGS of* [PART II.  
to mention. \* This request was at the same time enforced by consul SHERARD, to whom BOERHAAVE professes, he could never give a denial; and accordingly purchased at his sole expence those beautiful plates containing 300 figures, which remained in the engraver's hands unpaid for.

He was author of some poems, as *Carmen, in Schultingum jurisprudentiæ professorem; in nuptias Van Royen Botanices professoris; Jambicum Petro Burmanno; Carmen seculare academiæ, &c.* at the end of BURMAN'S *Carmen Elegiacum; D. Feb. 8vo, 1725, in folio; This was delivered on the Day of the jubilee (celebrated at Leyden once in fifty years) in the 150th year, or third jubilee from the foundation of the university, which commenced on that day: All the orations,*  
and

\* The consul and our author were both indebted to Vaillant for monuments more durable than statues, or medals, by his having denominated one new genus of plants *Sherardia*, which by its similitude with the *Verbena* might otherwise have been called *Verbenastrum*, including eight species; and another BOERHAAVIA, approaching to the *Valerianella*, which might have been named *Valerianoides*, including three species.

and some other pieces by BOERHAAVE, were publish'd together in quarto at the Hague, in 1738, with the title of H. BOERH. *opuscula omnia, prius sparsim edita, nunc in unum collecta*. But his thefis, all his prefaces except that to the *auctores de lue aphrodisiaca*, and his last dissertation on mercury are omitted, the errata of former editions are continued, with additional ones.

## S E C T. III.

*Of BOERHAAVE'S public Lectures, and some Improvements in Physic ascribed to him.*

**B**ESIDE the public lecture on botany, and the three private lectures abovementioned on chemistry, the institutes, and practice of physic, all which every lecture day employed him four hours in speaking; he frequently spent one hour more in giving a public lecture on some particular subjects.

He began these lectures about 1702, with a course of experimental philosophy,

applied wholly to the further explanation of the animal oeconomy. None of the dictata on this topic were ever publish'd, we believe, unless by his pupils in their theses.

In 1709, during the summer he demonstrated the plants in the phyfic garden, and in winter explained the structure of them.

In 1710, the subject was the method of studying phyfic; and in 1719, a book was publish'd at London, intituled, BOERHAAVE'S *method of studying phyfic*; in which are so many blunders and absurdities, owing to the editor, that none of all the supposititious works is more intollerable, than which otherwise none would have been more useful, as BOERHAAVE had delivered the most advantageous order of reading the best authors to form a compleat phyfician; pointed out their particular excellencies and defects, and described the best editions of them. An edition was in 1726 and 1734, printed in Latin in large

12mo at Holland, tho' with the name of London.

In the two following years he treated on the operations of medicines in a manner different from any author before him, classing them as it were anatomically, that is, as they act upon the solids only, the fluids only, or on both (separately, or at the same time) or lastly, as they specifically respect particular parts or humours. A very imperfect copy of the *Diſſata* translated into English, was publish'd in 1720; besides other defects, so wretched was the translation, that little of BOERHAAVE appears in the work. Such dangerous mistakes are committed in the doses of some medicines, that upon perusing it, he told an English gentleman who procured him the copy, that the editor had made him say things he never thought, and several contrary to his opinion and knowledge; beside, so many of the doses were mistaken, that he trembled to think what some patients might suffer, if their physician should rely on the authority of this exe-

crable book, on which, it would be his misfortune, if his name conferred any credit. And altho' a Latin edition from several copies collated, was publish'd three years afterwards at Paris, with a specious preface, yet it is not much more correct, than other of the surreptitious productions, especially in the mathematical part; but the second edition at Paris, 1727 in 12mo, or rather the English edition 1740, from that, with additional notes by Mr MARTYN, merits recommendation to those, who are unacquainted with the subject thus treated.

At length he was so exasperated by those publications, that he petitioned the States for a placart to suppress them, and inserted an advertisement in the Leyden Courant to this effect.

**W**HEREAS some booksellers of this and other countries, for the sake of lucre only, have highly injured me, and scandalously cheated the public, by printing in my name several books, from lectures procured (as they pretend) from my  
auditors,

*auditors, who were it so, make a very ill requital for my best endeavours to serve them; I find myself obliged to declare, that I own none such for my works, being fraudulently publish'd without my knowledge, contrary to my will, and full of such gross and dangerous mistakes, as tend equally to my discredit, and the reader's prejudice, who relies on them; and that likewise I am making diligent search after the authors of this injustice, in hopes of obtaining legal satisfaction for the same, and of preventing impositions of this kind for the future.*

HERMAN BOERHAAVE,

*Professor in their noble High Mightinesses University  
of Leyden.*

9th October,  
1726.

In 1713, he discoursed on hearing; in 1714 on vision, and afterwards on the origin of man; he considered the objects of those two faculties, light and sound, with the diseases of the eye and ear. The difficulty of giving the mathematical diagrams with sufficient accuracy, has per-

haps discouraged the publishing the *Diætata*, notwithstanding there are manuscripts, from which a treatise might be composed superior (in what concerns medicine) to any other upon those subjects.

In 1715, he descanted on respiration.

Afterwards there was a respite to his public lectures for two or three years.

From 1718 to 1728, he dwelt on the four elements, fire, air, water, earth; the substance of these lectures he has given in the theoretical part of his chemistry. *Elementa chemicæ*, vol. 1. p. 126—668.

In 1729, he was upon the stone of the kidneys and bladder. †

The subject which engaged him the six next ensuing years, was, the diseases of the nerves; several of his sentiments on this head are agreeably represented by Dr FLEMING in his *Neuropathia*.

During 1736, 1737, he explained the action of the heart.

The last public lectures in 1738, were on the nature and qualities of blood.

'Tis

† The *diætata* on this subject are published this year, intituled, HERMANI BOERHAAVE *prælectio publica de calculo*. 4to.

'Tis hoped, *Dr* VANSWIETEN will oblige the world with the substance of those which have not appeared in print, when he shall have publish'd the *Dictata* on the aphorisms before-mentioned.

**F**ROM all that has been said, some conception may be formed of the merits of our author; but how inadequate to theirs, who were his auditors, consulted with him, and have carefully perused all his works? They could not but admire his singular penetration in distinguishing at the first sight of a patient sometimes those distempers, which are not so immediately discoverable by the signs and symptoms usually attended to; with pleasure they observed this, and many other desirable faculties, unaccompany'd with any presumptuous confidence in his own abilities, or with an affectation of quick discernment, which might have been sufficiently countenanced by the reputation of great experience,



experience, and full practice: No, he was exceedingly circumstantial in his examinations of the sick, being too conscientious to rely upon hasty conjectures for the gratification of vanity, or thro' indifference, or to save the time and trouble of a thorough inquiry, when a good degree of probability might result from it.

In chronical cases, what is not very customary with physicians, he usually inspected the internal part of the eyelids, the *caruncula lachrymalis*, and the gums; the blood vessels appearing here most naked; sometimes he required the patient to try how he was affected by various positions of the body, to hold his breath as long, and exert his voice as loud as he could; according to which observations, \* he partly judged of the plentitude of the vessels, of the progress of obstructions in the glands, of scorbutic taints in the fluids, and of the affections  
of

\* A collection of all particulars of this kind is desirable.

of the chest, and its contents, the grand organ of sanguification.

Altho' some of his prescriptions were so simple, as to seem trifling, and others so rough, as to threaten inconvenience, yet, where the case was curable, they seldom failed of answering the intention. He was neither condemned for timidity nor temerity, none knowing better how to appropriate and temper the severest, as well as to exalt the efficacy of the mildest medicines.

A confident assurance of success, or the denouncing a case desperate, without evident reason, generally does, and always should prove not less disgraceful to the physician, than detrimental to the patient; whilst nothing procures more reputation to the former, than just prognostics. This BOERHAAVE experienced to his credit as well as the sagacious RADCLIFF; but the world is much more indebted to the former for the frank discovery of his art in his lectures, and writings; in such writings, as shall do honour to his name, when magnificent edifices with glaring inscriptions

tions to immortalize their founders shall be buried in oblivion.

Illiterate men may know more, than they can express or explain to others; but an excuse drawn from thence for concealing any useful observations or discoveries in their art, must ill become *Those*, who by their education, and profession should be masters of the learned languages, as well as of their own.

It will now perhaps be universally granted, that our professor has indeed supplied us with the best system from an unparallel'd fund of medical learning happily digested. But lest any one should rest here, and inconsiderately rank him among compilers only, or dispute our obligations to him for more, than the *methodizing* of his compositions, we beg leave to assert our author's superior claim by adverting to a few instances, which at present readily offer themselves out of the many that might be gathered from his writings, and dictata, manifesting him an original in numerous articles.

His

His judicious restriction of the use of mechanical reasoning in physick, has been represented above. The doctrines of ACID and ALCALI, of effervescence, fermentation and putrefaction, were heretofore no less in vogue for solving Phænomena; altho' the very terms before him were unsettled and misapplied. *Alcalys* were sometimes reputed *Acids*, and these mistaken for *Alcalys*; *effervescence*, *fermentation*, and *putrefaction* from their similar intestine motion, were frequently confounded without regard to the diversity of their cause and effects. *Volatile spirits*, whether vinous or alcalious, were supposed by eminent writers to be of a like sulphureous nature; and what is more absurd, animal spirits were thought to participate of the like qualities. Under such misrepresentations he found these momentous matters; but whoever compares the history of *Them* in his chemistry with their application in those chapters of his Aphorisms, where he treats of the most simple and spontaneous degeneracy of animal humours, must confess, that thence both  
philosophy

philosophy and physick receive considerable improvement.

The explications of the functions of several Viscera in the physiological part of his Institutes are more satisfactory as well as succinct, than in any author before; particularly of the stomach and spleen; how numerous and various were the causes assigned of digestion and chylification? After weighing them all, he shows how much they really contribute to that work. The use he attributes to the spleen is such, as consists with an animal's continuing tolerably well for some time after the extraction of it.

Who before demonstrated the Heat of an animal body to proceed altogether from attrition between the fluids and their vessels? Or observed, that air, whilst mixt with our circulating fluids, looses the elastic property of external air, having its particles so separated, as to prevent the exertion of their mutual repellent force, which they regain when collected upon stagnation of the fluids? The surprizing Phænomena of heated air, in which an  
animal

animal dies within a few minutes of a malignant almost to a pestilential fever, were discovered by experiments made at his request, and according to his direction. †

The chapter on the *internal senses* shows the utility of metaphysics applied to that subject. Those on *sleep and nutrition* are in a manner new: As to the superior excellence of the four remaining parts of his Institutes, *Pathology, Semeiotice, Hygiene, and Therapeutice* it suffices to alledge the use made of them by that very learned and ingenious physician *Dr ARBUTHNOT* in his treatise on diet, &c.

In the chirurgical part of *BOERHAAVE'S Aphorisms*, the chapters on *obstruction and inflammation* are deservedly accounted original; Those concerning a *scirrhus, cancer*, and the *diseases of the bones* afford many important notices, which escaped other authors. Who before him observed the *membrana adiposa & cellulosa* to be the sole seat of all ulcers, sinous and fistulous? In short, his whole system of  
*surgery*

† *Elementa Chem.* vol. i. p. 275.

*surgery* is not less accurate than *compendious*.

His account of the *bile* and of *bilious distempers*, of the *hepatitis*, various kinds of *jaundice*, of *melancholy*, and *hypocondriacal disorders* confessedly surpasses, what was extant before on those subjects. How appositely is that obscure tho' true doctrine of HIPPOCRATES concerning the *atrabiliary humour* confirmed and illustrated by our author's observations and application of the later discoveries in anatomy and chemistry? The strongest indications of a true practical genius are conspicuous in the composition of those chapters.

That on *a fever in general* is not equalled by any thing on the subject; what author before had given an unexceptionable *definition* of a fever? not even BELLINI himself. The *proper use* of the *bark in intermittents*, and the *chronical disorders* occasion'd by the *abuse* of it, were by no writer so justly considered, no, not by the immortal SYDENHAM. The description and cure of the whole tribe of *inflammatory diseases* delivered by  
him

him will probably remain unalterable, as human nature.

Under the head of *chronical* diseases, the subject of the *rabies canina*, or what relates to the *bite of a mad dog*, is handled in a most masterly manner: although he was not ignorant of the many applauded *specifics* in this case, of all others the most tremendous, yet, from the origin of medicine (says he) almost all the Principal of the profession have lamented the little dependance, that can be safely had upon them, since \* *after the bite, scarce any sur-*

N

*against*

\* This seems the more strongly express'd by way of incentive to some new discovery. Notwithstanding two of our most eminent physicians have since introduced the use of the *pulvis antilyssus*, it has not been found so very successful, especially when the distemper is at all advanced, as that the general method of cure in BOERHAAVE'S Aphorisms can be prudently dispensed with. What security may be found from the use of the *coronopus*, *i. e.* buckshorn-plantain, or star of the earth, or from mercurials, and vesicatories, profuse and repeated bleedings, in removing a confirmed hydrophobia, further observations must determine, whilst thanks are due to Those, who have published the first successful trials.



Of the WRITINGS of [PART II.  
*against the hydrophobia, or symptom of dreading water; and since there has been no credible instance of a cure after the invasion of this symptom.* Our professor had the resolution to attend several in the hydrophobia to their last moments, and his description of their agonies was so pathetic, that one of his pupils, no pusillanimous man, protested he wish'd to have been absent during that part of the lecture, and would never hear it a second time.

What method \* of treating the *gout* has been found so safe and serviceable, as that recommended by him?

Who has so accurately described, and distinguished the *different kinds of scurvy*, requiring a cure as different, and opposite to each other, as any the most contrary maladies? But it would exceed the brevity here proposed to touch upon more, than what should not be omitted in this place, because so universally acknowledged; that  
 both

\* It may be seen at large in Dr BENNET on the *gout*.

both in the *great* and *small pox* \* we have received new light from his observations, and experienced a more successful treatment of them from his discipline.

Considering the *small-pox* as a *cutaneous inflammation*, joined with a *contagious eruption*, and therefore requiring for the most part the general remedies for the † former, with those that are esteemed specific in the latter, he was naturally led to such a method, as enabled him not only to mitigate the symptoms, and so lessen the danger of this distemper, but sometimes even to *prevent* it also, that is, *its coming to an eruption*, by subduing it on its first at-

N 2

tack,

\* See Dr THEOPHILUS LOB's treatise of the Small-pox. Preface, § 25. Treatise, chap. 9.

† Notwithstanding Dr LOB disapproves and endeavours to explode this general antiplogistic method of bleeding, &c. it was so far from offending our author, that he gave the Doctor leave to prefix his opinion of his book upon the whole to this effect: 'I have perused, and approve of Dr LOB's  
' treatise (in English) on the small-pox, replete with  
' true medical science, and likely to be of much ser-  
' vice to mankind.' Leyden, 7th of Dec. 1733.  
H. BOERHAAVE.

tack, when all the symptoms usually preceding the eruption have appeared in a proper subject, who had been in the way of the infection in a season, when the small-pox was epidemical; and he doubted not that a variolous fever might be observed by others, using the like regimen, to be sometimes removed before it produced a variolous eruption. An article respecting this disease concerns the public welfare too much to be suppressed, since our author was so unfortunate as to differ in this point from great authorities, from those, to which in other cases he paid a considerable deference. — It is the *fatal consequence*, which always ensued upon his several trials of *the purgative method in the secondary fever of the confluent small-pox*, although conducted with all the cautions recommended by the patrons of that practice.

His observation, that the seat or *sole nidus* of the *venereal venom*, as of ulcers and fistulæ, is the fat, oil or marrow; that the depredation of this poison is confined to the *panniculus adiposus* & *membrana*  
*cel.*

*cellulosa*; that the flesh, bones, &c. are not destroyed by the venereal *barpy*, otherways then as they depend upon the said membranes, or are corrupted, instead of being defended, by the unctuous humour (destined to lubricate them, but now) rendered corrosive from the infection; his accounting thence for the impossibility of saving the bones of a single lamina or table (without any diploe or cavity) when tainted by that virulent matter; these considerations serve to solve many of the heretofore unaccountable *phænomena* in this disease, and furnish a clue for tracing the progress of the venom through its intricate mæanders. Further, he mechanically explains the operation of mercury in curing this malady; and sagaciously observing the extent of its efficacy in these cases, not to exceed the road of circulation, indicates the reason, why a salivation will neither answer, when the diploe or the marrow of the bones is infected, nor in a gonorrhæa; much less after the dissolution of the blood by the sweating method with *guaiacum*: if his regimen

men for extirpating this disease has been thought too severe, or his wariness in preventing a relapse, to proceed from too scrupulous apprehensions about it, these were errors on the right side at least; whereas the too common practice he condemns, “of  
 “ applying Exsiccatives to the *ulcuscula can-*  
 “ *cri dicta*, before the virulence is enerva-  
 “ ted, or eliminated by proper internals  
 “ and fomentations;” has been sooner or later attended with disastrous consequences; by our author’s caution, the cure, if tedious, is sure, and permanent; by the contrary management the repelled virus diffuses itself through the habit of the body, and, after an *imaginary* speedy cure, the distemper shows itself in a worse shape, not then to be eradicated in our climate under a month’s *Ptyalism*.

Several observations \* might be added on some particular qualities of medicines, concerning which Others were silent before

BOER-

\* It is probable an account of them will be communicated in Dr VAN SWIETEN’S *Commentaria in Apherismos* above-mentioned, p. 119.

BOERHAAVE gave Lectures in chemistry, although since, They have got the start in print; as, that ÆTHIOPS mineral, prepared in the manner he directs, (El. Chem. vol. II. p. 493.) however well triturated, is too gross to enter either the lacteals, or absorbent vessels; that the *internal* use of *saccharum saturni*, or sugar of lead, formerly prescribed by eminent physicians, (and lately recommended by an English writer) is attended with the most pernicious effects, being a sure, tho' slow, poison; that vinegar made blood-warm, and mixt with the blood fresh drawn before it cools, discovers its *attenuating* \* quality, by preventing and resolving coagulations. (El. Chem. vol. II. p. 213.) but enough has been said to justify the ranking our Author among the improvers of the Science.

In short, do not his writings manifest, that every branch of IT has flourished under

\*Dr FREIND and Others, who have attributed a *coagulating* quality to vinegar, have been misled probably by hastily concluding, that the medicinal qualities of all acids, whether vegetable, or mineral, were much alike.

der his care? — After comparing even our representation of *Them*, with that of his *character*, let the learned, and impartial decide, whether history has recorded one more meritorious in his profession since the *Coan*, than this *Batavian HIPPOCRATES*, considered either as a *preceptor*, or an *author*.

An inexhaustible fund of knowledge, a genius admirably adapted to the province of teaching, and a taste for every improvement of the mind, attended with unblemished virtue, qualified him for discharging the numerous duties of his several professorships, in a manner, which not only eclipsed the glory of his predecessors in that university, famed as they were for physic, but will probably exceed the utmost endeavours, if not the very ambition, of his successors.

An exquisite discernment accompanying the severest application to books, practice, and experiments, is apparent throughout those inestimable works, which compleated his reputation, and intitle him to the grateful commemoration of posterity.

DISPUTATIO

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DISPUTATIO MEDICA INAUGURALIS

[ Nonnihil contracta ]

De Utilitate explorandorum in Ægris Ex-  
crementorum ut Signorum,

Quam Eruditorum examini subjecit

*Herman Boerhaven* Batavus

Julii die, 4to.

HARDEROVICI 1693.

**S**ignum non posse clarius haberi & certius  
interioris ægri conditionis videtur, quam ex  
accuratissimo examine talis fluoris, qui forte an-  
te tempus brevissimum una cum reliquo oceano  
omnes inundavit corporis plagas; quales, quum  
uno plures occurrant, utilitatem, necessitatem, &  
explorandi cujusq; quosdam modos referam:  
principem hic rogat locum *Urina*, quæ ex tota  
massa sanguinea discedens, necessario de quavis,  
quam præterlabebatur, parte aliquid toti minus  
connexum, quam ut rapido torrenti resistat, se-  
cundum



cundum mechanicas leges vehit secum, sibi motu vario & intestino permiscet, ad suum usq; cribrum advehit, urinarum viis deponit. Quis inficias ibit, nihil lotio inesse quod non fuit antea in sanguine, iis exceptis quæ sub sensus non cadunt? Quum ergo reliquorum alma mater fit & nutrix sanguis, cujus apprime juvat in facienda medicina familiaris cognitio, quanti momenti urinæ examen jam fatis apparet; Nunciat scilicet fideliter, quæ ad sanguinem componendum concurrant, quomodo agant inter se, quid desit, quid abundet, adeoq; vere, quantum hic sperare licet, indicabit, quæ res addendæ, quæ detrahendæ, & quando, & qua copia; in quo vera medela consistit; mechanicæ idem firmat, et experientia: chemia namq; docet ex humano sanguine spiritum subtilem admodum, sal fugax, sal quietum, duplex oleum, aquam & insipidam terram *dammata*, ut aiunt, affatim suppeditari; verum eâdem opera novimus urinam dare terram, aquam, spiritum, oleum, & sal, quod sensu & prima fronte non adeo de sale sanguinis distinguas, quamvis in medendi vi maximum discrimen PARACELSUS & HELMONT notarint. Possidet itaque omnes, quas sanguis, urina partes, & quia hæc ab illo secernitur quotidie, quo in cruore quædam prædominatur, eò & in  
lotio

lotio sedes sibi vindicabit majores, ut infra demonstrabo per experientiam; quo plures igitur æquali sanguinis massæ vel spiritus v. g. vel sales insunt, eo adesse æquali percolatæ sanguinis parti plures. Ad scrutandi modos, eum primo tentandum puto, qui ejus pondus spectat ope phialæ notatæ, baroscopii BOYLEI, &c. ratione urinæ sanæ collatâ, ex ponderum differentia urinarum diversitatem discens, visurus simul, an ægri lotium, & qua quidem proportione peccet; quia gravissimæ in lotio & cruore partes terra, aqua, oleum, sal fixum, leviores, sal fugax, & volans spiritus, tutiorem conjecturam reddent, an in sanguine crassities, an tenuitas adsit, & cui morbus ascribendus, quomodo curandus: an sal fixum, terra & aqua, an vero spirituum, salis volatilis, tenuisve olei copia abundet. Prudens hinc conjiciet habita regionis, tempestatis, ætatis, sexus, diætæ, horæ, indolisq; ratione, an medicamentis excitantibus, an soporatis, recreantibus & dividantibus, an aquosis & diluentibus uti res exigat; ut apud HELMONTIUM habetur. Ante hæc experimenta injungatur ægvo, per densum valde & mundum linteum lotium, dum reddit, transmittat: quo, sic notum sit, an carunculæ, lapides, arenulæ, filamenta, pus, sanies, limus, & qua reddantur copia, quo co-

lore & figura ; hinc morborum sedem naturamque detegendo præivit HIPPOCRATES, Aph. iv. 74-81. vii. 34, 35, 39. Hoc autem, ubi non agendum curatur, decipi poterit ignorans, crescere sæpe in matula, quæ in corpore generata non fuerant ; at in linteo detenta juxta indolem examinata morbos adversus magnos dant remedii indicium : sed interim aliam ejusdem depravatæ urinæ partem lento cinerum, aut fervidæ calori ad libram exploratam imponat, quo possit aqua sua & spiritu cum maxime soluto sale liberari ; massa post evaporatas has manens partes rursus ad mensuram revocetur, datura partium volatilium & duriorum in lotio proportionem ; dein vero aqua destillata sal ex hac massa solvatur & in filtro maneat densissimæ olei & terræ notæ hac opera partes ; transeat cum affusa aqua sal, quod deductâ rursus calore aqua solum restabit : unde egregie innotescit medico, quæ, quanta, & qualia medicamina adhibere necesse sit ; dummodo varia prius & artificiosa experientia constet, quomodo in variis casibus, morbis, ætate, tempore, &c. hæc obtinuerint. Sed tentamina menstruorum acidorum & alcalinorum ope expeditius longe institui queant juxta incomparabilem BOYLEUM ; urinæ autem aquea pars lenissimo *balnei* tempore

pore in auras ante commixtionem expellatur, ne obtundat liquorum actionem ; facta miscela observare licet, an, quanta, & quam diverso cum effectu excitetur lucta. Cæteros autem modos elegantia pariter ac industria superabit sequens. Lotium fani vespere præcedenti modice poti matutino ante jentaculi vel potus usum tempore redditum, fatis magna collectum copia, infusum capaci valido & rotundo vitro, utcunq; calefiat, ut aer aliquantulum expellatur ; mox vitrum sigillo Hermetis obsignatum in leni tempore spatio 4, 5 vel 6 mensium fervetur, quo tempore elegantes colorum ad egregie rubicundum mutationes observantur ; dein revulso sigillo, ocyus altæ cucurbitæ galeâ ilico glutinis ope muniendæ fortis infusa urina levi calore balnei committatur destillationi in recipiens capax : Separata videbis spiritus, sal volatile, & quod alembicum simul scandit oleum fœtens, sed tenue, ab aqua, terra, limo, oleo gravi, sale fixo, sulfureq; fœtido in fundo manentibus ; expensis accurate inter se his partibus, unaquæque seorsim in suas dividi poterit partes largitura spiritum & salem album separatos ab oleo ; dein limosa aqua in cucurbita residua suo spoliatur humido, quo ad bilancem expenso, quod in fundo remanet aqua destillata calida

affusa bene digeratur ; hinc separato per separatorium nitidum oleo per crassam transfudet chartam, & quicquid in charta remansit repetito tractetur opere, (ne salis quiddam restet) evaporentur hæc simul leni igne, & sal siccum album, quod superest, ad exactam ilico mensuram revocetur, ut & terra quæ superest & oleum ; habebimus hoc modo, si sæpenu-mero idem fiat, stabilem harmoniam horum quæ in lotio sunt, & peracto cum cruore hoc labore veram sanguinem inter & urinam cognationem. Sed simul cave credas nil aliud hinc utilitatis ! quia egregia medicamina te adeptum, quorum vix digne quis prosequatur laudes, scias ; quibus itaque actis, ægri, qui chronico laborat, urina eodem tractata modo, quantum & in quo aberret, docebit, unde suppeditatis e sanguine & lotio medicamentis sapienter sanari poterunt. Dolendum modo in acutis, qui non diu eodem in statu, idem accurate adeo non posse tentari ; fiat tamen, quantum licet bene : Dein oculis objecta urina ægri iis cautelis & tempore observetur, secundum quæ, ubique obvia, de coloribus, pelluciditate, supernatantibus nebulis, & coronis, innatantibus partibus & subsidentibus rite pronunciare licet. Odorem lotii non abhorreas ; notatis enim odorum

diffe.

differentiis in his illisve morbis, nonne certius de simili judicabis malo? Juvamen attulisse quædam medicamenta nota observatum est, dum hoc illove præditum odore minxit quidam lotium, nocuisse alia; ubi jam postea similis occurrit, cæteris paribus quomodo sit progrediendum, ut ad Cynosuram discemus. Neque tenerior gustum lingua respuat, si certior adhuc esse cupis; fecere id olim insignes, faciunt quibusdam idem locis medici. Atque his quidem & ingenioso pluribus excogitandis modis inspicere oportet lotium rem maximi in morbis momenti, ut ab eo, qui mihi omnium instar, didici HIPPOCRATE, quem ut Aphorismos modo agam, *vid.* Aphorif. i. 12. iv. 47, 69, 72 & ult. item vii. 31, 33 & ult.

Verum ad *Alvi* deinde *Fæces* animus vertendus; quæ, quum ex cibis & potu, quibus ex glandulis oris saliva, ex œsophagi & ventriculi glandulosa tunica depluens liquor intime permistus fuerit, bilis succiq; pancreatici in duodeno affluxu irroratis, arteriarum transfudante meseraicarum in intestina per horum glandulosas tunicas rore subactis, ortum suum ducant, adeoq; superfluum sint basios totius Animalis, nihil omnino proficit has negligens, vel fastidians, sordes Practicus. Si enim illæ

ingestis deponuntur similes alimentis, nonne  
 dabitur peccare salivam, motum muscularem  
 ventriculi, ejusdem succum acidulo-falsum, bi-  
 lem, pancreatis & meseraicorum succum? quod  
 ignorans, quonam concludes signo felicius?  
 Si nimis liquidæ pro re nata, an non magnum  
 nimis feri ab sanguine discessum, & per va-  
 forum oscula exilia fluorem indicant, vel bilis  
 succum liquidiorum, & stimulos? Durior ea-  
 rum moles omni re certius bilis minorem vel  
 affluxum vel vim, lymphæ nimiam ad diver-  
 ticula conversionem, fermenti (ne nimis hæc  
 feriat vocula mechanizantes) inertiam, vel va-  
 forum & maxime in crassis intestinis, ut sæpe  
 fieri natum, obturata oscula liquidò designat.  
 Minor illarum copia, vel nimiam transpira-  
 tionem, vel timendos intestinorum morbos, vel  
 patentia immensum lactearum venarum semi-  
 cruda abripiendum ora, & hinc lethales mor-  
 bos præfagiet. Majori ubi quantitate obti-  
 nent, præsentem sanguinis & succi lymphatici  
 præcipitationem, serpentem intestinorum mo-  
 tum auctum, furibundos animales spiritus, fu-  
 turamq; ni curetur, ἀνεπίστα nunciant. Quæ  
 quidem plenius intelligemus animadvertentes  
 quinque imprimis ex meditullio corporis im-  
 mitti scœcibus liquores jamjam memoratos, ab  
 quorum

quorum conditione valetudo & vita dependent, salivam nempe, &c. In hoc proinde excremento cuncta fere signa omnium in corpore liquorum reperiunda dantur. Si enim colore flavius, sapore (ne horreas!) amarius, mole liquidius, copia majus, odore non admodum molestum, & sensu in intestinis est calidius; concludendum bilem oleosam & inflammabilem peccare; hinc indicabitur hanc temperandam, vincendam, educendam. Si foetido halitu effuso & cadaveroso, colore fere atro, mole liquida, copia ingenti, torminibus, virium prostratione, & consistencia inæquali vexat; tum vero ingens vitæ periculum, & putrefacta scatentem sanie sanguinem, spirituum vitalium depravationem, humorum solutionem a compage sua, & instantem fere, nisi succurratur, mortem annunciat: Sed & eadem docet operâ reficiendas aromaticis & spirituosis vires collapsas, putrefactioni liquorum valide resistentia, putrefacta expellentia, erosa lenientia, & rupta consolidantia, adhibenda esse medicamenta. Si viridia, nares acredine sua ferientia, gustui acido-austera, mole plus dura, dolore lancinantia conspexeris; ilico acidum, & quidem austerum ex chemiæ principiiis certis abundare evincet; hinc gnarus salia figentia, dividantia, lenientia, debito



debito usurpanda modo, atq; tandem malum educendum. Sed si alba, dura, pauca, insipida, & urinis comes croceo-rubicundis egesta foex; obferationem in vesicula, ductu, vel vasis in hepate felleis, vel bilis volatilitatem magnam, & simul ad officium inertiam demonstrabit; atq; iterum medicinæ per aromatica acido-spirituosa, diaphoretica & oleosa faciundæ scopum dabit. Longe plura circa has sordes, abluendo vel elixiviando, variis affundendo liquoribus chemicis, putrefaciendo, digerendo, & destillando instituenda experimenta enarrare possem, nisi horum apparatus ex supra dictis colligi facile posset. Vides saltem ut puto nauseabundos, qui tam sordida ruspari fastidiunt, vix appellandos medicos. Atq; his rursus satis congruè HIPPOCRATES. Aph. i. 23. ii. 14 15. iv. 21. 24. 26. vii. 30, 67. maxime autem i. 12.

*Saliva* subsequitur chemico sæpe examinata labore, quæ mihi aquæ maximam, spiritus vinosi (qui egregie odore suo se naribus prodebat, dum ad faciliorem partium solutionem eam digerebam hyemali tempestate) minorem, salis volatilis vix ab iis separandi minimam, fixi autem magnam salis copiam exhibuit. Fluore hæc, sapore, odore coloreq; se ipsam manifestat

festat; Quando enim ablata aquæ, quæ illi copiose adest, portione, insipida manet, inertem eam plane neq; digerendum ritè cibum: Sano enim tum acido-falsa percipitur, ut sæpe sum expertus; quod dum tamen ab ea exigitur quam maxime, frustra cætera expectabuntur prospera: Sale igitur ammoniaci in flores acto, elixire *Paracelsi*, esurino liquore *Zwelferi*, spiritu salis, nitri, sulfuris similibusq; cibi misceantur caute. Si tenax glutinosaq; evasit, lymphæ sanguisq; indicabuntur lentiores; hinc stagna putrida, ciborum mala digestio, artuum lassitudo, atq; plurium malorum mater fœcunda præsens vel futura intelligetur; atq; ideo denuo spirituosus, aromaticus, digestivus, diaphoreticus, attenuantibus, salibus volatilibus, acrioribus, & his cognatis utendum saliva præscribet. Si vehementius leniter evaporata cum sale alcalino ebulliat, acido, si cum hoc, alcalino abundabit, & medelam indicabit. Ubi majori effluit copia, salivalium nimis patentes fauces, seri nimiam præcipitationem, sanguinem magis divisum, & hinc pendentes morbos evincet. Ubi minori quantitate effluit, cæteris paribus contrarium concludetur, atq; alia erit instituenda medela. Sed pauca de singulis.

En vero sudorem (excrementum, quod sano nunquam depluit, sed semper molestiam, dolorem, morbum, æstum, viriumq; prostrationem indicat) omni examinandum labore: Est hic humor ab sanguine discedens, lymphatico succo, spiritibus, & liquore nervoso sæpe abundans; hic in acutis sua varia præsentia sæpe morbum solvit, sæpe instantis jamjam lethi nuncius indubitatus: nunc ægrum liberat, vigorem, vires, & requiem procreans, nunc exiguo temporis curriculo adeo debilitat, ut nihil magis; atque ideo tam hoc sæculo quam olim apud priscos morborum crises præcipuæ hinc sumptæ, definitæ. Quia vero non ea copia accipi potest, qua urina, licet hanc sæpe superet, quoniam scilicet non uno arctatus canali, sed millenis diffusis vasculis dispergitur quaquaversum, gustu saltem, odore & visu explorari poterit, ut & tactu, sua fit interim **TACHENIO** fides. Odorem ægro ex corpore spirantem multa docere, vel plebs docet; posse tandem ad certa genera revocari spes adest magna. Saporem, qui falsa, dulcia, acria, amara, insipida distinguit multum hic valere ratio & experientia clamant, uti **SYLVIVS** evicit, qui hinc humorem peccantem detegens, egregiam præstitit infinitis medelam. Colorem variare novimus varie, id autem semper singulari causæ

causæ deberi juste concludimus, atq; ideo vel hinc praxi utilissima posse observari non desperamus. Tactus vero austeriora, liquidiora, viscosa, tenacia, & pingua suo modo examinans varios discernet morbos, quorum quidem omnium gratia debebitur ei, qui certis observationibus lucem hic accendet, sequens magni *Coi* vestigia, quem legito cum cura Aphor. i. 12. iv. 36, 37, 38, 41, 42. vii. 61. viii. 4. excitationis locis vix credibile lumen medicinæ faciundæ accepturus.

*Quæ* porro vel *Tracheæ* nixu, vel *sponte* excernuntur ex *guttore*, quo arctius contemplor, eo anxius examinanda puto; quia ni id dextrè fiat, perdi sæpe potest bono medicamento sed in-tempestive præscripto æger. Quando itaq; tenuis olei æmula modice per exigua glandulosæ in aspera tota arteria tunicæ foramina, & glandularum tam in superiori *Œsophagi*, quam asperæ parte poros lymphæ exstillat, qualem in omnibus brutis & cadaveribus dissectis vidi, nulli quod scio alii in animali partem, defendit nervosissimam tracheæ tunicam, & facilitando inter respirandum ejusdem motui nexus annulorum lubricat: Quando autem quantitate excedit sponte sua juxta glaberrimas præci-  
pites

pites vias cadens, ductus asperæ obstruendo impedit admissionem aeris per minimos recessus pulmonum, hinc tussim & alia sed leviora mala producet. Ast crassa admodum sputa cum exscreantur, glandularum percolantium vel partis percolatæ vitium cogitare est: Prius facile per adjuncta discernitur. ut glandularum abscessum, inflammationem, tumorem & similia; alias autem humor incidendus, attenuandus & deniq; foras propellendus erit. Quo tempore tenuiora apparent, sanguinis minorem cohæsionem percipientes glutinosioribus utendum scient. Colorum quam mira hic varietas! Viridia & simul valde tenacia acerbis confusam bilem ideo hactenus concludo, quia mixta felli acerba virorem creant, quia acerba gluten inducunt, quia tuto & jucundè & sat cito acerbis adversa, id est acria volatilia hunc affectum curant, tam interne, quam externe applicata. Flava: abundantem bilem hic exoneratam, glandularum vel liquorum putredinem cogita, quia nullum præter bilem in corpore liquor flavus, & major his ægris in gutture ardor, & cura per acida incidentia sed fracta sulphureis egregia fit. Si pure, sanguine vel sanie sordent, facile prudens discernit, mali develabit latebras; hinc depurando,

fol-

solidandoq; vulnus curam aget medicus. Si falsa, & tenacia; muriaticum sal limo implexum tam obvolvendo opiat's spicula, quam incidendo per volatilia corrigendum foret. Dein horum aqua hydrostaticè pondus majorem minoremve partium dabit crassitiem. Solutio eorum in diversis liquoribus chemicis expedita, optimam tandem & efficaciorè medelam contra infestos Batavis morbos donabit, quod magni in re medica momenti concedit, qui asperæ arteriæ periculofissimos morbos noverit. Impositio horum prunis ardentibus multa docet, ut notum ex HIPPOCRATE. Aphor. iv. 47. vii. 69.

Neque ex his de *Narium* recremento, *Muco*, dicenda difficulter lector concludet.

Ex *lachrymali* tandem *oculi puncto*, *glandulis stenonianis* aliisq; hinc inde per oculi orbitam dispersis & hærentibus in palpebrarum corpore transudans *liquor subsalso-oleagineus*, Adnatam oculi & exteriorè tunicam humectando ab aeris defendit injuriis, motui & decori infervit: hic vero peccans variè solo fere gustu innotescit, varios miseros, & fere intolerandos morbos creat; non minus deplorandam sæpe ab Empiricis uno ad omnes morbos utentibus medicamento, uno casu quod prodest, curationem trahit

hit secum : Quum tamen jucunda horum sanatio procedat, si explorata gustu lympha, quæ tum uberius corrupta profluit, corrigitur, uti nuper in diversis egregio cum successu factum novi. Superessent, mi lector, dicenda innumera, sed hic imponam multas ob causas finem.



COM-

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**C O M M E N T A R I O L U S**

De Familia, Studiis, Vitæ cursu, &c.

PROPRIA

**B O E R H A A V I I**

MANU conscriptus,  
Et post obitum inter ejusdem MSS. repertus.

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S E C T. I.

**E**Rat HERMANNI Genitor Latinè, Græcè, Hebraicè sciens : peritus valde historiarum & gentium. Vir apertus, candidus, simplex : Paterfamilias optimus amore, cura, diligentia, frugalitate, prudentia.

Qui non magna in re, sed plenus virtutis, novem liberis educandis exemplum præbuit singulare, quid exacta parsimonia polleat, & frugalitas.

II.

*Novercæ* mores sanctissimos, raram virtutem, amabilem indolem admirari par est. Eam æquabili inter omnes *liberos* amore dispertito tanquam propriam Genitricem *diligebant Omnes.*

P

Defun-



Defunctam anno 1702 deflebat, nihilque acer-  
 bius dolebat, quam quod tantis meritis re-  
 spondere, dignamque vicem reddere non potue-  
 rit: Summa semper ope nixus, fratribus, so-  
 roribusq; ex ea prognatis, beneficentiam ma-  
 ternam utcunq; repensare.

## III.

*Ipse* genitor Latinæ Græcæq; linguæ *elemen-*  
*ta tenello adhuc ad præcepta VOSSIANA instillare,*  
 ERASMI colloquia, & TERENCEI fabulas *ex-*  
*plicare in se suscepit.* Novi Testamenti lectioni, &  
 explicationi, adjiciebat Historiæ universalis *con-*  
*spectum, quem CHRISTIANI MATTHIÆ thea-*  
*trum pandit.* Undecennis *noster* omnibus hisce  
 commode uti posset solus, ad regulas grammati-  
 ces utrâque in lingua promptus; nec minus Bel-  
 gica Latinè, quam Latina Belgicè vertere gna-  
 rus: quin libros, qui in origines verborum inqui-  
 runt, atque interiora vocum sensa exponunt,  
 scitule intelligens.

## IV.

*Circa duodecimum ætatis annum corripuit No-*  
*strum* Ulcus malignum, quod femur lævum  
 depascens, medicinam & chirurgiam pertina-  
 citer eludebat. Morbo, remediisq; simul di-  
 vexato

vexato, & diris doloribus confecto *Ipsè* fale & lotio *partem* fovendo *tandem evicit malum*. *Adjectum a nostro*, se hac occasione proprio dolore coactum, primum de Studio Medicinæ cogitare cæpisse.

## V.

Et jam Academiam ingredi potuisset, mense *Feb.* 1683. nisi ob debilitatem femoris *præoptasset* aliud semestre sub fructuosa Wynschotani *disciplina* contineri.

## VI.

Triglandius benevolentiam *ei conciliavit* generosam, constantem & paternam DANIELIS VAN ALPHEN; *horum consilio dedit se disciplinæ* SENGUERDII, ex quo Dialectica, Metaphysica, Physica, usum Globorum & Politica arripuit: Quinques *propterea ab hoc præside* in Cathedram Academicam productus.

## VII.

Mathesios utilitatem necessitatemque persentiens ei leviter se dedit, *Anno* 1687. *mox* dulcedine prolectante per Geometrica, Trigonometrica, eorumque praxin properavit ad Algebram; quæ mirifice ingenio ejus placebat,

Synthesin geometricam veterum admirans maxime, & excolens, ad augendam vim Intelligentiæ; Analyfin Recentiorum ad usum nova inveniendi. *Anno 1690 Philosophiæ laureâ insigniendus*, disputationem inauguralem habuit de distinctione mentis à Corpore.

## VIII.

Illustrationes Antiquitatum Hebraicarum ex TRIGLANDIO, & historiam ecclesiasticam ex SPANHEMIO *avidus combibit*.

## IX.

Jungebat his exercitiis quotidianam Patrum lectionem secundum chronologiam, à CLEMENTE ROMANO exorsus, & juxta seriem seculorum descendens, ut JESU CHRISTI doctrinam in N. T. traditam, primis Patribus interpretantibus addisceret. Horum simplicitatem sinceræ doctrinæ, disciplinæ sanctitatem, vitæ DEO dicatæ integritatem adorabat; subtilitatem scholarum Divina postmodum inquinasse dolebat. Aegerrime tulit, sacrorum interpretationem ex sectis sophistarum peti; & PLATONIS, ARISTOTELIS, THOMÆ AQUINATIS, SCOTI; suoque tempore CARTESII, cogitata Metaphysica

physica adhiberi pro legibus, ad quas castigarentur sacrorum scriptorum de DEO sententiæ. Experiebatur acerba diffidia, ingeniorumq; subtilissimorum acerrima certamina, odia, ambitiones, inde cieri, foveri; adeo contraria paci cum DEO & homine. Nihil hic magis illi obstabat, quam quod omnes asserant sacram scripturam ἀνθρωποπαθῶς loquentem θεοπρεπῶς explicandam; & θεοπρέπειαν singuli definiant ex placitis suæ metaphysices. Horrebat inde dominantis sectæ prævalentem opinionem Orthodoxiæ modum, & regulas, unice dare juxta dictata Metaphysicorum non sacrarum literarum; unde tam variæ sententiæ de doctrina simplicissima.

## X.

Mathematica lectissimis juvenibus tradidit.

## XI.

*Est forsan incredibile nullum a Nostro, medicinæ auditum professorem, nisi CL. DRELINCURTUM paucis vicibus paulo ante fata.*

VESALIUM FALLOPPIUM BARTHOLINUM versat, corpora brutorum crebro quoque incidit; interfuit etiam publicis CL. NUCKII in theatro dissectionibus sedulus.

## XII.

Veterum medicorum lectionem aggreditur, secundum temporum, quibus vixere, seriem, initio facto ab HIPPOCRATE; cito deprehendit *posteriores* omnia bona sua HIPPOCRATI debere; in hoc solo ergo diu substitit, hunc legendo, excerptendo, digerendo. *Recentiores percurrens* stetit in SYDENHAMO, quem pluries, semper avidius, excussit.

## XIII.

Chemiam dies noctesque exercuit.

## XIV.

In Botanicis, ope Floræ Hermannianæ, quem tamen ipsum non audivit, *insignes cepit progressus*; stirpium lustrationi in horto academico *crebros in agros excursus adjungens*.

## XV.

His autem absolutis (*nam interim urgebat Theologica*) prius voluit Medicinæ Doctor creari. Dein cogitabat legitimè ambire facultatem concionandi, pro impetranda statione Ecclesiastica, & *animo sedebat orationem habere in academia,*

demia, *in qua disquireret*, cur olim ab indoctis tam numerosi, hodie a doctissimis tam pauci Christiani facti sunt. *Disputatio ad gradum interea in medicina capiendum Harderovici habita est* de utilitate explorandorum excrementorum in Ægris, ut signorum.

## XVI.

E Gelrica academia Leydam reverso accidit infanti, nec opinanti, aliquid, unde prævidebat impedimenta ambituro Cathedram Ecclesiasticam.

## XVII.

Lautis conditionibus, lautioribus promissis, invitatus, *plus vice simplici*, a viro primariæ dignationis, qui gratia flagrantissima florebat regis GULIELMI III. ut Hagam comitum *sedem caperet fortunarum*, declinavit constans. Contentus videlicet vita libera, remota a turbis, studiisque porro percolendis unice impensa, ubi non cogeretur alia dicere & simulare, alia sentire & dissimulare: affectuum studiis rapi, regi. Sic tum vita erat, ægros visere, mox domi in Musæo se condere, officinam Vulcaniam exercere, omnes medicinæ partes acerrime persequi. Mathematica etiam aliis tradere. Sacra legere,

& auctores qui profitentur docere rationem certam amandi DEUM.

## XVIII.

Doctrinam sacris literis Hebraice & Græce traditam, solam animæ salutarem & agnovit, & sensit. Omni opportunitate profitebatur disciplinam, quam JESUS CHRISTUS ore & vita expressit, unice tranquillitatem dare menti. Semperque dixit amicis, pacem animi haud reperiundam nisi in magno MOSIS præcepto de sincero amore DEI & hominis, bene observato. Neque extra sacra monumenta uspiam inveniri, quod mentem serenet. DEUM pius adoravit, qui est. Intelligere de DEO unice volebat id, quod DEUS de se intelligit. Eo contentus ultra nihil requisivit, ne idololatria erraret. In voluntate DEI sic quiescebat, ut illius nullam omnino rationem indagandam putaret. Hanc unice supremam omnium legem esse contendebat, deliberata constantia perfectissime colendam. De aliis & se ipso ita sentiebat: ut quoties criminis reos ad pœnas lethales damnatos audiret, semper cogitaret, sæpe diceret; Quis dixerit, an non me sint meliores? Utique si ipse melior

id

id non mihi auctori tribuendum esse palam aio, confiteor; sed ita largienti DEO.

## XIX.

*Triplex morbus atrocissimus in eum incubuit. Primus medio Augusto 1722 sævire occæpit, quum ut sermo academicus denarrat, Lecti tepore relaxata corporis spiramenta antelucano frigori, & penetrabili irrigui roris humori, exponens, vitam fere perdidit, in se incuriosus committens, quæ ut cum cura caverent, aliis fideliter inculcarat. Inde ARTHRITIDIS exquisitissimæ tormentis discruciatu, tandem jacuit resolutus, ut vix amplius sensus ullus, nullus utique motus inferioribus artubus superesset.*

*Quum jam eatenus remisisset, ut medicinam pati & audire velle videretur, succos pressos bibit noster herbarum cichoræi, endiviæ, fumaris, nasturtii aquatici, veronicæ aquaticæ latifoliæ copiâ ingenti: simul deglutiens abundantissime gummi ferulacea Asiatica.*

## XX.

*Præhudia ultimi mali ingruerunt medio ferme Anno 1737. quum persentiscere cæpit tardantis molestias anhelitus lento gradu incrementes. Accessere Anno 1738. insolitæ arteriarum pulsationes*



tiones in dextra parte colli, & nunquam ante observatæ micationes perturbatæ in arteriis. Hanc perpendens, credidit subnasci inter cor & pulmones obstacula motui vitali polyposa, cum dilatatione vasorum.

## XXI.

Post peractos labores, equitationis exercitio se dabat : ab eo prohibitus ægritudine cruris sinistri & cruoris de renibus ructu, pedes se exercebat.

## XXII.

Fessus testudinis concentu solabatur lassitudinem ; Musices amantissimus.

## XXIII.

*Testatum voluit* gratulari se *Academiæ* fundatissimas res, opesque cum aliis in facultatibus, tum in medicina sustinenda, atque summa cum dignitate ad egregium publicum propaganda. Hanc certe *Quadrigæ Virorum*, in artibus *ÆSCULAPIIS* absque controversiâ principum, innixam, cum splendorem, tum celebritatem qua floreat, haud dubie tuituram. Non esse proinde, quod, hoc quidem rerum statu, alia fulcra atque præsidia sapientiæ medi-  
cæ

cæ circumspiciantur ; quam quibus nunc ornata sit, atq; subcincta, CLARISS. OOSTERDYKIO certe, annis sibi & laboribus pari, cum profundissima scientia consummatissimam, ac plane incomparabilem, experientiam constare. Celeberrimos item, ALBINUM, ROYENIUM, GAUBIUM, æstimatissimos olim Discipulos, dein Collegas, commendationem excellentissimæ cum indolis, tum doctrinæ, non impleffe solum, sed, consentiente omnium judicio, applausuque, exsuperasse. Sub tantis hisce præsidibus, scholam HIPPOCRATICAM perpetua sibi & incrementa, & ornamenta, posse promittere : quæ terras nunc ad jussa Omnipotentis relicturus, stationeque decessurus, ipse quoque firmissima cogitatione lætus præcipere, pioque in Academiam adfectu, & ore, præcinere auderet.

## EX EPISTOLIS

Nondum editis

## ANALECTA

I. & 2. De novissima Cl. Defuncti Valetudine versantur.

I.

Illustri Baroni BASSAND, Magn. Duc. Hetru-  
riæ MED. H. B. S. P. D. Mart. 16.  
1738. N. S.

**M**Eprehendit vomica in Pulmone, spiritum præfocans ad levissimos corporis motus, a tribus abhinc mensibus quotidie increfcens. Si causa augetur, opprimet, si vero rumpitur eventus incertus. Quicquid fiet, id omne continget ex arbitrio superioris Numinis. Cur ergo metuam, quid cupiam aliud! Adoremus DEUM! sufficit. Interim curo sedulo ut lectissima adhibeam remedia, ut leniam & maturem, securus de exitu. Vixi ultra 68 annos, semperque lætus.

Cl. MOR-

C. MORTIMER, M. D. R. S. Secr. H. B.

Sept. 8. 1738.

2. Æger animo & corpore ex violentissimo morbo & diuturno vix sane spirabam, dum decumbenti traduntur literæ, quas ad me dedisti Londini idibus Augusti. Harum argumentum deliciis atq; officiosissimis refertum honorum verbis ita me refecit atq; recreavit, ut calamo te salutare in animum induxerim, vel ea quidem gratia potissimum, ut testificarer, quanti faciam amicitiam atq; benevolentiam, quâ parum meritum honoras. Novum tibi nomen sum, dum mihi inscribis volumen doctum & laboriosum \* *Ætorum societatis*; gratias ago pro eo, quas possum maximas, proq; honorifico benefacto obstrictum memet profiteor.

Ætas, labor, corporisque opima pinguitudo, effecerant, ante annum, ut inertibus refertum, grave, hebes, plenitudine turgens corpus, anhelum ad motus minimos, cum sensu suffocationis, pulsu mirifice anomalo; ineptum evaderet ad ullum motum. Urgebat præcipue subsistens prorsus, & intercepta, respiratio ad prima somni initia: unde somnus prorsus prohibebatur, cum formidabili strangulationis molestia. Hinc hydrops pedum, crurum, femo-  
rum,

\* Vol. 39.

rum, scroti, præputii, & abdominis. Quæ tamen omnia sublata. Sed dolor manet in abdomine cum anxietate summa, anhelitu suffocante, & debilitate incredibili : somno paucò, eoque vago, per somnia turbatissimo. Animus vero rebus agendis impar. Cum his luctor fessus, nec emergo : patienter expectans DEI iussa, quibus resigno data ; quæ sola amo, & honoro unice.

*Julii 12. 1733.*

3. Redux ex Britanniiis illustris BASSANDUS mihi tradidit librum de variolis [auctore T. LOBB, M. D.] quem perlegi, probaviq; nam plenum vidi veræ scientiæ medicæ, promittentemque genti humanæ bona plurima, gratias ideo summas misso pro Munere ago tibi, Autorique. \* Veniam petenti des, quæso te, quod debitum diu responsum distuli ; vix horula datur otii senescenti, & morienti invitos inter labores. Sed quid queror ineptus ? qui interea loci alios labores quæro, in pervestigandis metallorum proprietatibus punctum si vacabit, brevi quid perscribam  
ad

\* Sept. 21. 1733. Si placet, poterit egregius Lobbius evulgare sic, ut in literis meis ad te habetur, sententiam quam veri amor expressit.

ad *societatem* de miris dotibus argenti vivi per laboriosissima experimenta explorati; unde equidem constabit, quod *alchemistæ* vere dixerint de eo, licet minus Latine, quod *subjectum sit omnis mirabilitatis non creaverit Altissimus, mirabile magis in natura rerum.*

Unicum est, quo animum laxo arte severa distentum, *Arboretum* scilicet, in quo colendo & amplificando totus insanio. Si hisce meis nugis velles favere, læta mihi fane pareres gaudia. \* \* \* possum quippe Americanas frutices & arbores præsertim nostro submittere cœlo; quare tanto easdem avidius cupiebam plantas.

*Feb. 18. 1734.*

4. Pro Rogeriano munere gratias ago. Doleo eximium virum, mea causa, jacturam fecisse boni otii in refutando viro, qui minus æque meos conatus tractavit, quos tamen invito extortos vi nec ipse magni facio. Si scirem me causam dedisse censori, pœniteret me, rogarem veniam.

En observata laboriosissima de Mercurio. Si ea tanti putas, postquam perlegeris, ut non prorsus indigna sint, quæ legantur societatis illustrissimæ membris; oro te velis ea ipsis offerre a me, unàque ipsis deferre testificationem obsequii,  
quo

quo viros summos prosequor, & venerationis, qua ipsos colere semper affectabo.

*April 8. 1734.*

5. Gaudeo redditas tibi meas literas, una cum observationibus de Argento vivo. Imprimis quia non displicuere societati regiæ, quæ arbitra est, & domina ut curet, si tanti putet, inferendas actis suis: ubi umbra sua nitorem pulchrius micantibus conciliare poterunt. Summi nostra tempestate Chemici dictaverunt Argentum vivum, ope sinceri ignis, mutari in metalla ad ignem constantia: hinc fuere auctores aliis, ut bonum otium, curas suas, & opes impenderint huic operi. His obtuli sententiam meam experimentis nixam certis, nec ulla necessitate repetendis per alios: quia fideliter enarravi, ut revocarem ab opere supervacaneo, temporis jactura & errore in scientia. Unum id mihi in hisce propositum; sufficit si obtinui, sed simul studui asserere veritatem dicto Gebri solventis gratias Altissimo, qui creavit argentum vivum adeo simplex, ut semper & ubiq; idem, vel totum ab igne fugiat aut integrum in eo conflet, nec in diversa dividi patiens; modo sincerum fuerit. Cæterum non metuendum, quod laborem sopheriæ temerè revelabo profanis, nam  
ne

ne ipse quidem mysteriis initiatus sum, longe minus adeptus. Si vero possum manifestare quam certissime quanam labores falso commendentur, id non alienum ab homine bono puto, idq; faciam sedulò. Id etiam ægre fero, quod Veteres Auctores explodant ignari, dum re monstro Ipsos paucis, planis verbis dixisse, quod ego per annos productis rerum experimentis didici verum esse. Illos igitur prudens eximet numero vanorum, qui rudissimi omnium rerum scribunt de difficillimis, elementa prima ignorantes: Quæ magis laboriosa in metallicis expertus sum, destinavi Academiæ regiæ scientiarum, ut prima illustrissimæ societati Britannicæ venerabundus obtuli.

*Martii 3. 1737.*

6. \* Quod diu debui, solvo nomen: quippe mitto tibi descriptionem laboris, quem vix expectes, nisi ab eo, qui insanienti sapientiæ devotus erat. Sed sacra hæc aliter non constant, tantæq; molis eximere præjudicatas opiniones, & cautos facere alienis periculis, ne operam perdant, & oleum, nimis creduli. Tu optime, perlege intentus; si haud prorsus indigna habes, prælege sapientibus Britannis, imo & actis  
 Q infere.

\* Hæc Epistola tertiæ experimentorum de *Mercurio* partis comes erat.



infere. Si difficiles putant nugas, id tamen laudabunt, quod alios meis impensis dedoceam, quæ summi in arte principes nimis confidenter tradunt.

Maii 10. 1737.

7. De scriptoribus *chemicis* videris mea quidem sententia sapienter judicare. In rerum experimentis apertè, simulando aut dissimulando nihil; simpliciter, nulla circuitione usus enarres, & rerum eventa: neque temere quid immisceas, quod non pertinent ad propositum; neque colligere inde volo quidpiam, nisi quod effectu patet. Contingit ergo, ut neminem labor meus offendere queat, licet forte præconceptæ opinioni pugnet. Si quis vero sapientior in arte, atque in opere fortunatior, alia adhibendo pulchriora detexit, illi mea non oppono; sed cautus assero, si gradu ignis memorato argentum vivum sic tractavit, tum utraq; non mutata manere, neq; ab eo igne, neq; a reciproca inter se virtute alicui quid pati. Moneo amicè, ne ergo a talibus expectant promissa. Argentum vivum ebulliens calorem ab igne habet, qui ei tribui ab igne potest maximum, si quid novi; Ille vero adhibetur, dum a metallis purissimis exhalare cogitur. Institui alia, dum jactata lenocinia, quibus acutus hydrargyrus putatur exenterare

terare metalla, examinavi, & inveni prorfus eandem simplicitatem. Hæc, fi proferam, miraberis pertinaciam improbi laboris, & videbis everfam fpem alchemiftarum primi ordinis, cæfaribus, regibus, principibus faftuofè deprædicatam, caro venditam ; fed obruor negotiis, neq; tamen unquam fugio amabilem infaniam.

*Novembre le 12. 1728.*

*L' extrait d'une lettre de Mr BOERHAAVE envoyé a fa Majesté Portugaife, qui l'avoit fait demander par son Embassadeur a la Haye Don LOUIS d' ACHUNA.*

*Touchant la Racine NINDSIN.*

La Racine *Nindsin* ou *Nindzing*, croit originairement en *Corea*, & en *Japon*, de la longueur de trois ou quatre doigts, & de l'épaisseur d'un doigt : elle se fend presque toujours en deux vers embas.

Quand cette Racine est entiere, blanchâtre, tirant, tant soit peu, vers le Jaune, presque pelucide, d'une consistance un peu dure & resineuse, elle est le meillure.

La propriété, & la vertu de cette Racine est tenue si excellente chez les Chinois, & Japannois, qu'il y a une loy publique de ne la jamais falsifier, & qu'on place des gardes militaires dans toutes les avenues au temps de la recolte.

Sa vertu principale est d'augmenter l'esprit-vital, conforter le cerveau, le coeur, & les nerfs; de reparer ceux, qui se sont epuises par la debauché, & principalement de prolonger la vie & de l'entretenir en vigueur & en fanté: c'est pourquoy ils les preferent avant tous les cordiaux du monde.

L'on prend une dragme de la Racine, qu'on coupe par le menu, on verse la dessus trois onces d'eau d'ecorces de citron, on les laisse mitonner ensemble pendant la nuit dans un vaisseau de porcelaine bien fermé, que rien n'exhale, sans ebouillir; au matin, on le boit une heure avant que de se lever, une fois la semaine.

C A T A-

C A T A L O G U S

O P E R U M

*Hermannii Boerhaavii*

GENUINORUM.

Numerus libelli nostri paginam indicat, qua  
mentio singuli Operis habetur.

Disputat. Academi. { Oratio Academica, [ *quo probabatur* ] be-  
ne intellectam a Cicerone, [ & *confutatam* ]  
*esse* sententiam Epicuri de summo bono.  
Disputatio inauguralis de distinctione men-  
tis a corpore.  
Disputatio medica inauguralis de utilitate  
explorandorum in ægris excremento-  
rum, ut signorum. Harderovici, 1693.  
p. 187

- 1 **O** R A T I O de commendando Studio  
Hippocratico. An. 1701. p. 23--27
- 2 — de Ufu Ratiocinii mechanici in Medici-  
na. 1703. 28--31
- 3 — qua repurgatæ Medicinæ facilis afferitur  
simplicitas. 1709. 31--84
- 4 — de comparando Certo in Physicis. 1715  
34--81.
- 5 — de Chemia suos errores expurgante.  
1718. 37--40
- 6 — de Vita & Obitu Cl. Bernardi Albini.  
1721, 40--43
- 7 — quam habuit, quum, honesta missione  
impetrata, Botanicam & Chemicam  
Professionem publice poneret. 1729  
44.  
8 — de

- 8 — de honore Medici, servitute. 1731. 44-45.  
 Institutiones Medicæ in Usus annuæ exercitatio-  
 nis domesticæ. 8vo. *Ed. I.* 1708.  
 ——— 5. & ult. *Ley.* 1734. *p.* 109—112  
 Aphorismi de Cognoscendis & Curandis Morbis,  
 in usum Doctrinæ domesticæ, 8vo. *Ed. I.*  
 1709. *Ed. 5 & ult.* 1734. *p.* 112—120  
 Index Plantarum in Horto Lugd. Bat. repert.  
 8vo. 1710. *p.* 123  
 Libellus de Materie Medica, & Remediorum  
 Formulæ quæ serviunt Aphorismis, &c. 8vo.  
*Ed. I.* 1719. ult. 1740. *p.* 120—123  
 Index alter Plantarum quæ in Horto Lugd. Bat.  
 aluntur, 2 Vol. 4to. 1720, 1727. *p.* 123-128  
 Epistola ad Ruyschium de fabrica Glandularum  
 in corpore humano 1722. *p.* 129.  
 Atrocis, nec descripti prius, Morbi Historia, se-  
 cundum Medicæ Artis leges conscripta, 8vo.  
 1724. *p.* 130  
 Atrocis rarissimiq; Morbi Historia altera, 8vo.  
 1728. *p.* 131  
 Præfatio Vaillantii Botanico Parisiensi, cum Vita  
 Auctoris, *folio.* 1727.  
 Tractatus Medicus de Lue Aphrodisiaca, præ-  
 fixus Aphrodisiaco, edito 1728.  
 ——— tres de Mercurio, Actis Brittanis & Gal-  
 licis editi, vide acta Brittan. No. 430, 443,  
 444. *p.* 149—155  
 Cura conjuncta Albini Præfatio Vesalii operibus,  
 continens præclari hujus Anatomici Vitam,  
 1725. *p.* 130  
 De præfationibus & editionibus auctoris nostri  
 cæteris, vide supra. *p.* 132, 160, 161.  
 Elementa Chemiæ, 2 Vol. 4to. 1732. *p.* 132-146  
*Opera*

*Opera Spuria.*

**S**UB nomine *Boerhaavio* edita, sed quæ sum-  
mus ille vir adeo non agnovit, quod indig-  
nanter tanquam famæ suæ injuriosa repudiave-  
rit, Vide supra. p. 166

Methodus studendi Medicinam, 8vo. *Anglicè.*

1719. 12mo. *Lat.* 1726, 1734. p. 164

De Viribus Medicamentorum, 8vo. *Angl.* 1720.

*Lat.* 1723, 1727. p. 165

Institutiones & Experimenta Chemiæ, 2 Vol.

8vo. *Lat.* 1724. 4to. *Angl.* 1725. p. 148

Historia Plantarum cum Characteribus & Vir-

tutibus, 2 Vol. 8vo. *Lat.* 1727. p. 128

Praxis Medica, sive Commentarium in Aphorif-

mos de cognoscendis & curandis Morbis

5 Vol. 8vo. *Lat.* 1728. p. 118, 119

*Post obitum Cl. viri prodierunt*

1 **H**ERM. BOERHAAVE Prælectiones Aca-  
demicae in proprias Institutiones Rei  
Medicae, edidit & notas addidit Albertus Hal-  
ler, vol. 1. Chylificatio, vol. 2. 1740. 8vo. 1739.  
vol. 3. 1742. p. 118

2 A Treatise on the Powers of Medicine, tran-  
slated from the most correct *Lat.* Edition, by  
*John Martin*, F. R. S. 8vo. 1740. p. 166

Prælectio de Calculo, 1740. p. 168

*Gerardi van Swieten*, M. D. Commentaria, in  
*Herm. Boerhaave* Aphorismos. Tom. 1. 4to.

1742. p. 119

*Tituli prælectionum publicarum tradente.*

**H**ERM. BOERHAAVE, ab Anno 1709, ad  
1738, ex seriebus lectionum in Academia  
Lugd. Bat. editis, desumpti.

1709.

1709. Tempore æstivo, in Horto Herbas indicando explicabit, Hyberno structuram Plantarum docebit. *Id. quotannis præstitit.*
1710. Hyberno, methodum discendæ medicinæ demonstrabit.
- 1711, 1712. Actiones Remediorum exponet. *Unde liber de Viribus medicamentorum.* ducet.
1713. Auditum exponet.
1714. Visum exponet, & de in ortum hominis. Hoc anno a consulibus creatus præses Collegii chirurgici, proinde Nosocomio publico studiosos in morborum dignotione per sua signa, cognitione per suas causas, & curatione per sua indicata exercebit, & ad praxin reducet.
1715. Respirationem exponet auditorio medico.
- 1718, Leget de Igne. } De hisce ac de Terra &  
1719. } Menstruis chemicis le-  
1720, Leget de Aere. } ctiones publicas edidit  
1721. } in Element. Chem.  
1722. Leget de Aqua. } Vol. I.
1723. Chemica hora nona in Laboratorio Chemicico tradit.
- 1724, }  
1725, } Idem proponit.  
1726, }  
1727, }  
1728. }
1729. De Calculis homine dicet.
- 1730, }  
1731, } De Morbis Nervorum dicet.  
1732, }  
1733, }  
1734, }  
1735. }
- 1736, De Cordis actione dicet.
- 1737.
1738. De Sanguine dicet.

