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A Voyage into the Levant

Joseph Pitton de Tournefort (1656–1708) was originally destined for the church, but his interest in botany led him to become professor of botany at the Jardin des plantes in Paris, and to travel all over Europe and beyond in search of interesting specimens. He was chiefly interested in the classification of plants, but is now best remembered for the accounts he wrote of voyages undertaken for the purpose of scientific discovery. This illustrated two-volume work, published posthumously in French in 1717 and translated into English the following year, recounts a journey begun in 1700, around the eastern Mediterranean and the Black Sea, visiting Crete and other Greek islands, Istanbul, Armenia and Georgia. Tournefort notes not only plants, but geographical features, antiquities, the people he encounters, and their way of life, agriculture and industry. Volume 1 begins with a biography of Tournefort, and ends with an account of Constantinople.

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A Voyage into the Levant

Perform'd by Command of the Late French King

VOLUME 1

JOSEPH PITTON DE TOURNEFORT
TRANSLATED BY JOHN OZELL



Cambridge University Press
978-1-108-07522-0 - A Voyage into the Levant: Perform'd by Command of the Late French King: Volume 1
Joseph Pitton De Tournefort
Frontmatter
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CAMBRIDGE
UNIVERSITY PRESS

University Printing House, Cambridge, CB2 8BS, United Kingdom

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www.cambridge.org
Information on this title: www.cambridge.org/9781108075220

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This edition first published 1718
This digitally printed version 2014

ISBN 978-1-108-07522-0 Paperback

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A
V O Y A G E
I N T O T H E
L E V A N T :

Perform'd by Command of the Late *French* King.

CONTAINING
The Antient and Modern STATE of the Islands
of the *Archipelago* ; as also of *Constantinople*, the Coasts of the
Black Sea, *Armenia*, *Georgia*, the Frontiers of *Persia*, and
Asia Minor.

W I T H
P L A N S of the principal Towns and Places of Note ; an
Account of the Genius, Manners, Trade, and Religion of the re-
spective People inhabiting those Parts : And an Explanation of Variety
of Medals and Antique Monuments.

Illustrated with Full Descriptions and Curious Copper-Plates of great
Numbers of Uncommon Plants, Animals, &c. And several Obser-
vations in Natural History.

By M. *TOURNEFORT*, of the Royal Academy of Sciences, Chief
Botanist to the late *French* King, &c.

To which is Prefix'd,
The Author's LIFE, in a Letter to M. *Begon* : As also his Elogium, pro-
nounc'd by M. *Fontenelle*, before a publick Assembly of the Academy of Sciences.

Adorn'd with an Accurate MAP of the Author's Travels, not in the *French*
Edition : Done by Mr. *Senex*.

In T W O V O L U M E S.

L O N D O N,
Printed for D. BROWNE, A. BELL, J. DARBY, A. BETTESWORTH, J. PEM-
BERTON, C. RIVINGTON, J. HOOKE, R. CRUTTENDEN and T. COX,
J. BATTLEY, E. SYMON. M. DCC. XVIII.


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TO
Sir SAMUEL STANIER.

S I R,

 *HE more than equal Share I have had in rendering into English this Work of the Celebrated M. Tournefort, giving me a sort of Right to make a particular Dedication; I take this publick Opportunity, instead of begging your Patronage, to return You the Tribute of my Thanks for having early and constantly honour'd me with it. Such Acknowledgments were indeed the Original of Adresses of this kind.*

A VOYAGE throughout the Levant cannot fail of Acceptance with a Gentleman, who has himself not only travel'd great part of it, but bears as great a Sway, and has as extended an Interest in the Commerce of the whole, as any other Member whatever, of the antient and opulent Company trading thither. A Circumstance hereditary to the STANIERs, one of whom I find, in a Dedication of a certain Italian Book, highly prais'd for doing good Offices to such as traffick'd into the Levant, resided, or had any Correspondence there. This
A 2 was

The DEDICATION.

was Mr. JAMES STANIER: and that the same good Offices are continu'd abroad by Sir SAMUEL STANIER, his Beneficence at home leaves no room to doubt.

S I R,

YOUR known Skill in Languages, together with your Love and Taste of Polite Literature, may have already engaged you to read this Piece in the Original: if so, without forestalling your Judgment, I cannot but believe You found this Relation of M. Tournefort's Voyage into the Levant to be equally entertaining and improving, and, as it were, an Encyclopædia, a Circle or Course of all the Arts and Sciences. 'Tis certain he himself look'd upon it as his Masterpiece, and was much fonder of this than of any other of his Performances. It may, however, be justly said to be so full of unusual Terms and peculiar Modes of Expression, that it required some Study and Pains to unfold the Mysteries of this Oracle of an Author.

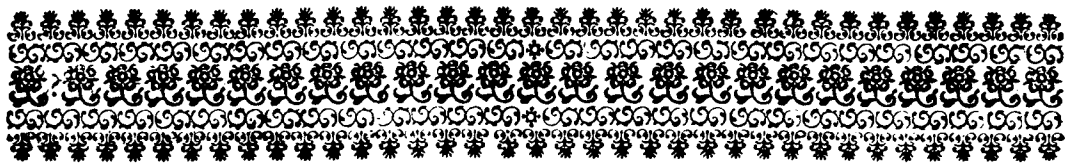
THE Version, such as it is, I submit to your Candor; and am,

S I R,

Your most Obedient Humble Servant,


John Ozell.

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THE
L I F E
O F
M. T O U R N E F O R T :
I N
A LETTER to M. *Begon*, Intendant of the
Marine at *Rochefort*, &c.

S I R,

HE Letter you was pleas'd to write to my Father, sufficiently shews your Concern for the Death of M. *Tournefort*. You at the same time intimate how glad you should be, to know the various Circumstances of his Life. I therefore do myself the honour to communicate to you all the Particulars I am acquainted with relating to that Subject, and which I learnt from the Deceas'd himself.

VOUCHSAFE me, Sir, some little Thanks for the Agonies I suffer, to obey you ; since I'm forced to a fresh Remembrance of those happy Hours spent on me by M. *Tournefort*, to inform me of his Travels,
and

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and instruct me in his Systems and Discoveries: Things which I cannot deposite in better hands than yours. No body is ignorant of the Esteem you had for him; nor indeed could he miss it, deserving as he was from all Persons of Merit. Your Esteem is a sort of Tribute you think owing to the Reputation and Memory of Great Men: witness their Portraits, with which you adorn your rare well-chosen Library; witness too that noble History of the Great Men of the last Age, for which the World is indebted purely to your Love of them.

NO doubt there will be found excellent Pens, that shall make Elogiums truly worthy of *M. Tournefort*: But, Sir, in executing this melancholy Duty which you have engaged me to perform to him, well satisfy'd that I only speak the Language of the *Heart*, I shall be far from envying Them, on this occasion, their Productions of the *Head*. As I cannot vie with them in Sublimity of Thought, nor Politeness of Expression, my Endeavours shall only be to represent with exactness such Facts as I can call to mind.

JOSEPH PITTON DE TOURNEFORT was born at *Aix* in *Provence*. He had not only the Birth, but Sentiments and Virtues of a Gentleman: Advantages which he was contented to possess, without being ostentatious of 'em.

FROM his earliest Infancy, he felt that Passion for Plants, which afterwards caus'd him to carry the Knowledge of 'em to so high a pitch. His innate Genius was his first Master; impatient to break out, it soon knew how to discover itself. He was confess'd a Botanist, even before he himself could know what the Word meant.

OFTENTIMES would he steal away from his Play-fellows, to pursue his Inquiries after Vegetables. His frequent Sallies from his Father's House were only to go a simpling; for which he was sometimes a little too severely punish'd, through their Ignorance who knew no better: such however was the Prelude of his Botanick Excursions. He was not near so much concern'd at these Chastisements, as he was pleas'd when he met with a Vegetable that was new to him. From hence 'tis plain, the Education that was given him contributed nothing towards his Knowledge in Botany. The Lights he acquir'd therein, were solely owing to his happy Disposition, or rather to a sort of Scientific Instinct.

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THIS however may be said, that Art envying Nature the Glory of forming, alone, this growing Botanist, threw in his way the Works of *Dioscorides* and *Matthiolum*. These he saw, and perus'd again and again; with Transports of Joy, that foretoken'd how great a Figure he would one day make in their Art. But, not content with seeing the bare Representation of Plants, because he was not as yet of an Age ripe enough to understand without help the Explications those Masters have given of 'em; he was resolv'd to learn their Names, and even their Properties: and accordingly, by one means or other, attain'd his Desires.

WHAT did he do, or rather what did he not do, to improve himself in this Science? No place was inaccessible to him, where he had any suspicion of Plants. Once, in a more than ordinary Botanical Fit, having scaled a high Wall in quest of something in that way, he had like to have paid for his Curiosity with the loss of his Reputation, and almost that of his Life too; being taken for a Thief by the Owners of the Ground, and warmly pursu'd with Volleys of Stones and Brickbats. This Accident made him indeed more wary, but not less ardent in his Researches.

BOTANY however was not the only Object of his Investigations: he had the same Fondness for Chymistry and Anatomy. They strove which should have the preference in his Breast, or rather it was a Contention among these Sciences, which of 'em should engross him to itself. He reconciled their emulous Claims, and had the Art to share himself among them; a secret Pre-dilection made him, however, lean to Botany, which was always his favourite Study.

WITH such Dispositions, it was impossible but he should make great advances. Being a younger Brother, he was design'd for the Church, and accordingly had begun his Theological Courses. But Heaven having bestow'd on him an elder Brother's Portion in Gifts of the Mind, and being as it were pre-ordain'd to study the Author of Nature, in her respective Operations, rather than in scholastick Books, he shew'd no great liking to the Ecclesiastical State. He could not take up with Sciences that were indolent and purely speculative; the active and practical sort were those which alone engaged his Attention. His Parents could not in conscience withstand such laudable Inclinations, and thought themselves obliged

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obliged to let him improve his Talent his own way. Then it was he undertook his first Travels: The most unknown Plants of *Provence*, *Savoy*, and *Dauphiny*, he soon became thoroughly acquainted with. For some time he stroll'd from one Country to another, indifferent which way he directed his Steps. He was for examining all things, and knowing every thing at once. Yet being guided by a Discretion that outstript his Years, he well saw that his Body could not keep pace with his Mind, and therefore was of opinion 'twould be better to conduct himself as it were by Rule.

HE presently went to *Montpellier*, where he bent himself to the Study of Medicine, and by the Principles of Art riveted and enlarg'd those Endowments Nature had already bestow'd on him. His Taste soon declar'd it self: he contracted a fast Friendship with M. *Magnol*, a famous Botanist, who would have been the first of the Age, had he not had M. *Tournefort* for his Contemporary. This Gentleman accompany'd him in his Herborizations. Such a Disciple, you may be sure, soon equal'd his Master; nay, he in a manner became his Colleague, and discover'd divers Plants that till then were unknown.

HERE he form'd the Design of travelling into *Spain*. He set forwards for *Barcelona*, furnish'd with not a few Recommendations, particularly to M. *Salvador*, no less skilful in Pharmacy, than famed for Botany: and care was had to let him know M. *de Tournefort's* Relish for that Science, as well as the Progress he had already made therein.

LONGING to acquire further Knowledge, our young Traveller began his Journey by himself about the Close of Winter, undaunted at the Severity of the Season, or the Dangers he expos'd himself to, and which were foretold him by some of his Friends. Which Prediction was, to his sorrow, fulfill'd in the *Pyrenean* Mountains, where the Miquelets stript him to his Skin. This Misfortune mov'd him: being young, and more a Botanist than a Philosopher, he could not refrain from weeping. The Cold being likewise very violent, he conjur'd the Robbers to return him at least his Clothes. May there not be some particular Efficacy in the Tears of a Youth born to Great Things? His, 'tis certain, were so persuasive, that one of the Rogues threw him his upper Coat again: in which, by an unexpected Good fortune, he recover'd some
Mony

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Mony he had ty'd up in his Handkerchief, which slipping down into the Lining, had escaped the Search of these Thieves.

THIS Resource, tho no extraordinary one, help'd to restore his Spirits. Philosophy, which began to dawn in his Soul, was his Support, and strengthen'd him against the Inclemency of the Weather, as well as against the Badness of his Fortune. Yet, as Philosophers have a Body as well as a Soul, so *M. Tournefort* being bare-legg'd, had much ado to reach the next Town, tho not far off the place where he was robb'd. Here he put himself into an Equipage suitable indeed to the Lowness of his Circumstances, but far inferiour to his real Merit. In a word, Sir, I have heard him more than once relate with pleasure this Circumstance of his Life, wherein all he could afford himself was a Thrum-Cap, Linen Trowzers, and a Pair of Wooden Shoes. And yet as melancholy as his Case was, the Loss that most affected him was that of the Recommendatory Letters he was carrying with him to *Barcelona*. One thing did indeed comfort him, and that was the Fertility of the Plains, where he breath'd a sweeter Air than in the Mountains he was newly got out of: to charm away his Sorrow, he gather'd Physical Herbs all the way he went. Divers strange Plants, which ceas'd to be strange to him, made him amends for his late Sufferings. He flatter'd himself that these would be his best Credentials with the Person he was directed to. He was not disappointed of his Expectation; for no sooner had he made himself known, but he was receiv'd with all the Civility he deserv'd. The Condition he appear'd in, wrought as much Compassion as his Presence created Pleasure. *M. Salvador* left nothing undone, to make him forget his Disaster; nor was it long before his Endeavours had the success he desir'd.

DURING the time that *M. Tournefort* tarry'd in *Catalonia*, he travers'd the whole Country, accompany'd by several Persons who were Lovers of Botany; and his coming into that Country seem'd to be on purpose to discover to them Variety of rare Plants, which they were in possession of, without knowing it.

YET did he not in this first Journey meet with every thing that he had promis'd to himself. His Return into *France* had like to have been more fatal to him, than his Departure out of it.

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IN

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IN a certain Village hard by *Perpignan*, the House where he took up his Quarters fell down in the night-time; he continu'd a good while bury'd under its Ruins, and 'twas almost miraculous he was not smother'd or crush'd to death.

HE return'd to *Montpellier*, to continue his Course in Medicine, as also his Operations in Chymistry and Anatomy: in saying this, I say enough to persuade that he perfected himself in every one of those Sciences. He afterwards went to *Orange*, where he was admitted Doctor of Physick.

FROM thence he repair'd to *Aix*: But his Passion for whatever had the appearance of Natural Philosophy, not permitting him to make any long stay here; he resolv'd to try whether the *Alps* would not be more propitious to him than the *Pyrenees*. While he travell'd the Countries that parted 'em, his Thoughts were perpetually employ'd in the Study of Vegetables and Nature. High Mountains and steep Precipices were to him the most instructive Books in the World, tho no less difficult than dangerous to run over. Many a time, when he had clamber'd to the top of a mountainous rugged Rock, 'twas as much as he could do to get down again.

MAUGRE so many Fatigues and Dangers, he thought he could never purchase too dear the Pleasure of improving himself; he knew of no greater.

NEITHER Plants nor Stones, in short, nothing that relates to Natural History escaped his Attention wherever he went: he examin'd every thing with an Eagerness that never flagg'd.

THE Lights he acquir'd were too great to be any longer conceal'd or fruitless. Altho Merit be proper and personal to a Man, yet the Effects it produces seem to be in a manner foreign to him. This kind of Paradox was verify'd in *M. Tournefort*. Whilst he was at *Aix* (whether he would now and then take a turn, as he thought fit) intirely busy'd with his Physick Observations, his Merit was operating (without his privity) at *Paris*. Not even his Presence (when he came thither himself) contributed any thing to the Reputation he there acquir'd; for his Fame had got thither before him.

AMONG

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AMONG numbers that spoke in praise of M. *Tournefort*, none did it so efficaciously as Madam *de Venelle*, Sub-Governess of the Children of *France*. Having always been in strict Friendship with M. *Tournefort*'s Family, she was minded to give him more substantial Proofs of it than mere Commendations. She engaged him to come to *Paris*, and presented him to M. *Fagon*, who at that time was chief Physician to the Queen.

M. *FAGON*'s Depth of Knowledge soon made him sensible of that of M. *Tournefort*, who in his first Conversation justify'd all the advantageous things that had been spoken of him. Overjoy'd with having lit on so rare a Man, he bent all his thoughts how to procure him every thing his marvellous Talents deserv'd. He made it his Duty to the Publick, and a particular Pleasure to himself, to be his Protector ; and accordingly he got him nominated Professor of Botany in the Royal Garden.

M. *TOURNEFORT*'s Abilities soon drew to him a numerous Affluence of Men of Learning, or of such as endeavour'd to be so. His Renown was not confin'd to *France* ; foreign Countries furnish'd him a world of Admirers, who turn'd their Admiration into Friendship, the moment they became acquainted with him, and ever after counted it a Glory to carry on with him a Correspondence of Love and Literature.

IN his Botanick Lectures he join'd a useful Practick to a learned Theory ; and in his divers Herborizations (Simplings) about *Paris*, he taught to know on the spot the several Plants he had before given a description of.

FOR the useful Embelishment of the Royal Garden, he travel'd to *Spain* and *Portugal*, by the King's Order ; as likewise into *England* and *Holland*. At *Oxford* he had several Conferences with Dr. *Goddard*, who conceiv'd so great an Esteem for him, that he imparted to him the admirable Secret of his Drops. So true is it, that Men of real Learning respect and cherish Merit in the Person even of their Rivals in Learning, tho they be of another Nation : their Intellectual Parts seem to make 'em all of one Country.

M. *TOURNEFORT* brought home from his Travels very large quantities of uncommon Plants ; and many more were sent to him by Persons whose Acquaintance he had cultivated in divers Countries : so that by

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his means the King's Garden is become the richest Magazine of Plants of any in *Europe*, perhaps of the whole World; it is, as one may say, the very Seat and Mansion of Botany.

HIS Skill and Capacity were too generally acknowledg'd, not to obtain the Justice they deserv'd. The King, whose liberal Hands were continually open to pour Favours on Men of Worth, found M. *Tournefort* a Subject truly worthy of the Academy of Sciences. He was instantly admitted therein among the number of Pensionaries in 1691.

MONSIEUR the Chancellor *de Pontchartrain*, who was at that time Comptroller-General of the Finances and Secretary of State, had the Academies under his Care. Being no less just and certain in the Choices he made, than profound in the Sciences to which he condescended to apply himself; he intrusted the Care of the Academy of Sciences to his Nephew the Abbot *Bignon*, to whose good Taste and penetrating Judgment we owe the Nomination of M. *Tournefort*. Thus, Sir, the First-fruits of his Administration were consecrated to the Glory of the Commonwealth of Learning, by the Choice he made of two Men of such distinguish'd Merit as the late M. *Tournefort* and M. *Homburg*, who since has also been one of the principal Ornaments of that Academy.

THE more M. *Tournefort* came in view, the more his different Qualifications were taken notice of. The Philosophers, the Chymists, the Anatomists, and the Geometricians, admired in him those rare Talents for which themselves are admired. Tho he was strictly only of the Class of Botanists, yet his Genius was capable of every thing.

IN order to justify his Majesty's Choice to the Learned World, he publish'd in 1694, his *Elements of Botany, or Method how to know Plants*, in three Volumes in Octavo. The first contains the Explications of several Plants; and the two last consist of Plates giving an analytical Description of the Leaves, Flowers, Fruits, and Seeds of all the Plants in the first Volume: and for the sake of Strangers, M. *Tournefort* afterwards publish'd them in *Latin*, with the Title of *Institutiones Rei Herbariæ*.

IN this Work he found a way to clear the main Difficulties of Botany, by reducing the Eight Thousand Eight Hundred Forty Six Species of Plants at that time known, to Six Hundred Threescore and Thirteen Genera; and those Genera into Two and Twenty Classes. He
exactly

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exactly specifies the essential Figures and Qualities that distinguish them, as well in their Flower as in their Fruit and Seed. And as *Dioscorides* treated only of Six Hundred sorts of Plants, M. *de Fontenelle*, in his History of the Academy of Sciences for the Year 1700, says with his usual Delicacy, That by the Labours of M. *Tournefort*, we are now acquainted with more Genera of Plants, than *Dioscorides* knew Species.

AFTER the Reputation M. *Tournefort* had acquired, did he not deserve to be of a Faculty of Physick so famous as that of *Paris*? 'Twas even necessary in common Decency, that he should be received into it. M. *Fagon*, to whom he dedicated his Thesis, was reciprocal Surety between both; and therein shew'd that he was no less studious of the Glory of a Body under his Protection, than desirous of the Advancement of a Man that was likely to be one of its most eminent Members.

AFTERWARDS M. *Tournefort* wrote his *History of the Plants that grow about Paris, with their Medicinal Uses*. It came not out till 1698. He therein shews, that *France* possesses within her own Bosom whole Treasures of Remedies, and Springs of Health which she was ignorant of, and which perhaps might have still continu'd unknown to her, but for M. *Tournefort's* Application and Inquiries. His *Elements of Botany* had taught how to distinguish one Plant from another; this Book taught a way to learn their Virtues by means of a chymical Analysis. The Author there shews in a convincing manner, that any Artist observing thereby whether Alkali, Acid, Sulphur, some of the Salts, Earth or Water prevail in them, may clearly distinguish their Qualities, and judge in what Distemper each Plant is prevalent.

NOT satisfied with having made an Analysis of Plants, he also study'd their Anatomy; and distinguish'd in them Parts like to those of Animals, before him unknown. His Eye, assisted with the Microscope, discover'd Pipes through which the nutritious Juice of the Earth filtrated, and others whereby they flow'd back again; he compares them to the Veins and Arteries. He likewise found out, by his Penetration, other Conduits like wreathed Pillars, by means whereof the Air contributes to the Nourishment and Support of Plants, and is carry'd into the Trachean Arteries, or what we may call the Lungs, which till then were unknown to us.

T W A S

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TWAS too inconsiderable a thing in his Thoughts to have found out in Plants a Life almost sensitive; he renew'd, and, which is more, demonstrated a System of the vegetative Life of Stones. Several curious Dissertations, which he read to the Academy of Sciences upon this Subject, acquired him abundance of Followers.

WE also owe to him a thousand surprizing Particulars relating to the Formation of Corals, Spunges, Sea-Mushrooms, Lithophites and stony Plants, or others that grow at the bottom of the Sea: he calls them by the name of *marine* Plants, to distinguish them from the *maritime* ones that grow on the Sea-shore.

M. *TOURNEFORT* extended his System of Vegetation to Minerals, and even to Metals, Rock-Chrystals, and precious Stones. Some may perhaps imagine, that he flung out these Notions at a venture: but, Sir, this was very far from being his Character. His Reservedness was so great in this respect, that he was rather scrupulous than fanciful: bare Conjecture, unsupported by Proofs, had no weight with him. He built wholly upon certain Experiments or solid Demonstrations: so that every thing he advanc'd, tho' out of modesty he might do it only as an Observation, might go for experimented, with a *Probatum est*.

HE knew how to draw Profit from mere Curiosity. There was not a thing in his Collections, but what supported some Point of his System. For instance, he had maintain'd that in a certain Season of the Year the Coral emits, at the extremity of its Branches, an acrid Liquor heavier than the Sea-water, which consequently sinks to the bottom, and being extremely clammy, fastens to the first solid Body that it meets: divers Corals, which he had gather'd together, were the proof of this curious Propagation. He shew'd some of all Ages and of all Sorts, from their first Stage (which is as it were the Bud) to their compleat Formation. Among the Corals he possess'd, there were some of different sorts of red, of rose-colour, flesh-colour, white, black, and fillemot: some growing upon Flints, others on pieces of Wood, on Shells, on bits of broken Earthen-Ware, and even on a piece of a human Skull; and they all as it were incorporated with those various Substances which lay at the bottom of the Sea, and on which they commenc'd their Growth.

*

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AS to the Vegetation of Stones, we are obliged to M. *Tournefort* for the reviving of this Hypothesis, which had been long forgotten. Inform'd by his Reading, but much more by his Travels, he examin'd with a knowing Attention every thing in general that could have the least relation to it. When he had made some Discoveries, it was not enough to satisfy him ; he not only search'd the Causes of them, but he must also have the Proofs. We owe those Proofs, and, if we may be allow'd to go so far, the Evidence of this System, to the Reflections he made, and at the same time to the Care he took in collecting every thing that could support and strengthen his Opinion.

OBSERVING that the Sea-Mushrooms, Corals, and the other stony Plants, were Bodies ever organized, and constantly of the same Construction, each according to its Species, tho found in different Countries; he concluded, that each Species had its peculiar *Germen*.

FURTHERMORE, having in some Shells found very hard Chalk, and in others Flint-stones of much larger size than the Hole of the Shell could admit ; he thence infer'd, that those Substances could not be receiv'd therein any how, but when they were liquid or only in their first Speck of Entity, and that afterwards they must have enlarg'd and harden'd, in proportion as they came to maturity.

THIS great Philosopher went further, and proved that Shells vegetate ; that by a kind of Fraternity between them and Stones, they mutually incorporated the one with the other ; and that sometimes Stones envelop'd the *Germina* of Shells, which had their Growth, so inclos'd ; and at other times the Shells cover'd over the *Germina* of Stones, which throve in their bosom. He had Collections of both sorts.

AS to the Vegetation of Metals, Minerals, Rock-Chrystal and precious Stones, M. *Tournefort* proved it evidently by divers Marcassites, wherein Nature had taken pleasure to make a mixture no less curious than humorous, of Sulphur, Vitriol, Iron, Copper, Marble and Chrystal. Some more rich were streak'd with Threds of the purest Gold and Silver, running through a fine Marble. Other Marcassites, still nobler than the last, had a mixture of several Metals with precious Stones. In some you might see Emeralds, Silver, or Copper enchas'd, and as it were incorporated

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porated together : in others, Rubies, Amethists, Topazes, or various Stones of Value, which Nature had employ'd and mingled in the same manner. This excellent Naturalist had collected Pieces of each of the Minerals, Metals, Marbles, Chrystals, and precious Stones of all Qualities, and even of all the different Bakings that the Earth gives them. Herein he had so many convincing, tho silent Proofs of the System he propos'd, of the Formation and Growth of all these Bodies by way of Vegetation. Thus, Sir, one might say of all these Discoveries made by *M. Tournefort*, that he was so watchful a Spy upon Nature, that at length he found out her very *Recipe* in a vast many of her Operations.

'T WAS not out of a vain Curiosity that he compos'd his Cabinet, which contain'd within it self several others of different sorts ; the whole being of inestimable value. Always taken up with his Designs in Natural History, he was much less studious about making it curious, than about rendering it useful. Upon a due Examination of what seem'd in him to be only bare {Amusement, there appear'd to be Labour and Views ; so that the Agreeable was mix'd with the Useful, and the Useful was found even in what least seem'd to be so.

WHAT I have been saying, is manifest from every thing in his Cabinet. The prodigious quantities of Plants that he had collected ; rare Woods and Fruits ; the Druggery, consisting of above eight hundred simple and natural Remedies ; the perfect Collection of Shells, the most singular in every kind ; the Minerals ; the Marcellites ; the Metals ; the precious Stones, the extraordinary and even the common ones ; the Petrifications ; the Congelations ; the different Corals ; the Sea-Mushrooms ; the Lithophites ; the several marine, maritime, and stony Plants ; the strange figured Horns of Animals ; the scarce Insects, Reptiles, Fishes, Birds, Animals ; in a word, a great number of other things, which in the eye of some People might seem to be merely curious, all had their Offices in Natural History. His Cabinet (if I may venture at such a Metaphor) was a second Ark, to which the Creatures, animate and inanimate, were come to own themselves as it were the Tributaries of him who had brought them together ; for each Piece, according to *M. Tournefort*, had its Quota of Proofs to pay in.

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HE had form'd a Desigu of writing an exact and methodical History of all these Curiosities: but he was prevented by the Voyage into the *Levant*, which he undertook in the Year 1700, at the King's Command, and under the Auspices of M. the Count *de Pontchartrain*. His Majesty gave orders, that M. *Tournefort* should carry with him a Painter, to take the Views of the Places through which they should pass, and to draw such curious Plants, Animals, and other things, as he should find in the Course of his Journey. For this purpose they pitch'd upon M. *Aubriet*, an excellent Painter in Miniature; and the Academy of Sciences named for his Companion M. *de Gundelscheimer*, a German Physician, excellently skill'd in Botany.

M. *TOURNEFORT* laid down a Plan for his Voyage truly worthy the Prince that commanded it, and the Subject that perform'd it. His Views in it were indeed almost universal. As he knew himself to be a Man as well as a Scholar, his Design was to make his Travels as useful to Mankind in general, as to the Sciences in particular.

ONE of his chief Objects was Geography; he propos'd to explain the antient, and especially to rectify the modern. Not only Cities, but whole Provinces, had changed their Names as often as their Masters. The Sea had swallow'd up many Islands, taken notice of in antient Authors. Others had appear'd since, and consequently were unknown to them. Whole Towns had been sunk into the Earth, and Lakes form'd in their places. All these Alterations were so many Defects in Geography, which M. *Tournefort* resolv'd to rectify.

THE Advantages likely to accrue to Botanicks were not less considerable. He allotted it for one of his useful Diversions, to examine upon the spot whether what *Theophrastus*, *Dioscorides*, *Matthiolum*, and several other Authors, have written concerning Plants, were conformable to Truth. His Exactness strongly inclined him to inquire whether they had not impos'd upon Nature, or whether Nature herself had not degenerated since their Observations.

IT had been accounted Temerity in any but M. *Tournefort*, so much as to doubt of what the Antients have once said: But the Sequel has fully justify'd his Doubts, which were as laudable as useful. Antiquity, in this Article, has gather'd no advantage from its Priority of Birth:

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M. *Tournefort* has set it right upon many occasions. Those antient Authors had falsify'd Nature, with a view perhaps of embellishing her: M. *Tournefort*'s Observations have in a manner restored her to her self; she has in his hands recover'd that true simple Beauty, which ought to shine in her.

IN short, his Intention in his Voyage was to collect every thing in general that was worthy his Attention in all kinds of Sciences, or which might any ways serve to enrich the Study of Physick and the Commonwealth of Learning.

ALMOST three Years were spent in these learned Travels. As Botanicks were his chief Delight, he simpl'd in all the Islands of the *Archipelago*, upon the Coasts of the *Black Sea*, in *Bithynia*, *Pontus*, *Capadocia*, *Armenia*, *Georgia*, quite to the Confines of *Persia*. In his Return he took a different Road, in hopes of finding new Subjects of Observation, and came home by *Galatia*, *Myfia*, *Lydia*, and *Ionia*.

HIS Reading had already furnish'd him with such a full Knowledge of all those Countries, that when he came there he found himself as it were naturalized in each by his Learning. So that he was the properest Man in the world to examine the Truth of whatever had been related of them extraordinary, and to discover what before had escaped the Inquiries of Travellers.

PHYSICK, which he practis'd with the most perfect Disinterest among the Rich, and with extreme Charity towards the Poor, gave him entrance every where. By this means he found great helps towards the Accomplishment of his Designs, to which the Customs of those Countries were very contrary. But his personal Merit, and the Obligations he laid on the People he had to do with, easily made them forget he was a Stranger. We may safely affirm, he omitted nothing that might support with dignity the Glory of the Prince, at whose command he undertook his Travels. He was obliged to put an end to them, and to embark at *Smyrna* for *France*, with the regret of not being able to go into *Egypt* and *Syria*, upon account of the contagious Distempers which then infected those Countries.

IF it had been in M. *Tournefort*'s power to have compleated his mighty Designs, and seen all the Places he intended, how vastly had Physick
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been enrich'd by it! Tho he saw but part, yet we owe to him the Knowledge of Thirteen Hundred Fifty Six Plants which he brought home with him, and which before were never heard of. Some of them fell naturally into the Genera he had before given an account of. All the trouble he was at to entertain these new Botanical Guests, was to form Five and Twenty new Genera, under which he muster'd such Plants as did not agree with any of those he had before establish'd. Of these he compos'd a Book, intitl'd, *Corollarium Institutionum Rei Herbariae*. And in order to immortalize his Gratitude to his Protectors, and his Affection to his particular Friends, he gave their Names to many of those Plants that wanted them.

WHAT he further discover'd relating to Stones, could not but improve his System of their Vegetation. The Description he read to the Academy of Sciences of a Labyrinth which is in the Island of *Candia*, and the Reflections he join'd to it, have carry'd that System up to a Certainty. He had observ'd, that in many parts of that Labyrinth there were written upon the Walls, which are a quick Rock and of a greyish colour, the Names of People who had been there, and that the Letters were of a much whiter colour than the Stone whereon they were cut. These Names could have been carved in the Rock no way but with the Chizzel, and yet they jutt'd out about two lines in some places, and three in others: so that the Letters, which at first were hollow, are now become embossed. Hence he infer'd, that the nutritious Juice of the Stone being extravasated, and finding those Fractures where there was an Interruption of the Fibres, had made a kind of Callosity; in the same manner as it happens to Trees, whereon any Letters have been cut or graved. He was satisfy'd, that it was the same natural Mechanism which produced the like Effects in both, and that this Mechanism could be nothing but Vegetation.

TO add some further Proofs to those already related, M. *Tournefort* shew'd, that the Stones which we call *Ammon's-Horns*, Eagle-Stones, Toad-Stones, Pyrites whether oval or cylindrical, Judaick-Stones, Serpents-Eyes, *Astroite*, *Boulogne*, *Florence-Stones*, which always represent the same Landscapes, and the same ruined Towns; the *Dendroides*, or a sort of Agate which represents Sea-Coasts, Fortifications, Shrubs, or Landscapes; all Rock-Chrystals cut in Panes, or with several Faces;

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in a word, many other Stones could come only of *Germina* particular to each of them. The reason he gives for this Opinion, is, that they all retain the same Figures, and are always organized exactly in the same manner, each after its Species. From this Principle he concludes, that it was a proof that these Stones always produced their like, in the same manner as each Plant and Tree follow the Species of the *Germin* in which they are inclosed; Nature never making any mistake, and always distributing to them like a common Mother the Juices necessary for their Increase and Vegetation.

THIS System was strengthen'd by several Stones which *M. Tournefort* produced; they had been broken, in all probability, at the time of the rising of their Sap: and Nature herself had pieced them together again by a Solder, which was nothing but a Callosity form'd by the nutritious Juice of those Stones, which after having rejoin'd and glu'd the pieces, had cover'd 'em over again for about the thickness of half a line: nay, some were found, which in their rejoining had inclosed some Rock-Chrystals and small Diamonds.

THE Hardness of Stone might serve as a pretence for Incredulity touching the Filtration of the nutritious Juice through their Pores. To remove this, *M. Tournefort* observ'd, that the Heart of *Brazil-Wood*, Iron-wood, Guaiacum, Ebony, and some other Woods, the Bones of some Animals and Fishes, equal'd, if not exceeded, the Hardness of Stones. That nevertheless 'twas uncontestably true, that those Trees and those Bones received Nourishment, the one from the Juices of the Earth, and the others from the Substance of the Animal of which they made part.

HE further supported this Opinion, by taking notice that the hardest Stones, Marble, Porphyry, Jewels, and even Diamonds, have a Thred and Veins, which make 'em easier to cut one way than another; which shews that they really have Pores, tho those Pores are very compact and imperceptible. If, says he, we have not hitherto been able to find the *Germina* of Stones, stony Plants, Shells, Minerals or Metals; that is no manner of reason for denying their Existence: since it is certain, we have not yet discover'd any Seeds of Mushrooms, Nightshades, Truffles, Mosses, nor of a great many other Plants; tho in good Physicks nothing comes but by Generation in matter of Plants, as in matter of Animals and Insects.

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THUS, Sir, *M. Tournefort* may be call'd the Restorer of the System of the Vegetation of Stones, and the Founder of that of Universal Vegetation.

AFTER having learnedly explain'd the Formation of these various Works of Nature, he gave a description of several deep Grottos which he had seen in the Course of his Travels. Among the different Ornaments with which Nature had embelish'd those subterranean Palaces, *M. Tournefort* found a cylindrical Block of Marble, which had been broken through the middle. He observ'd, that in this Marble you might distinguish the Heart, the Bark, a kind of Sap, and even several different Saps, which might plainly be known by several Circles, each some lines thick, that surrounded it. By this one might come to know the Age of this Marble, as we know the Age of Trees by the like Circles, when they have been cut diametrically.

THESE Grottos were besides enrich'd with Congelations and Chryf-tallizations most perfectly beautiful, and irregularly adorn'd with an agreeable, tho confused Mixture, of all kinds of Metals, Marbles, and Rock-Chrystals incorporated together. Several different pieces, which he brought home with him, were the proof he alledg'd to demonstrate the Fluidity, or at least the Suppleness, of all these Bodies at their Formation, which continues in part as long as they are standing upon their Stocks in the Bowels of the Earth. And as in all these things *M. Tournefort* seem'd to have become Nature's Confident without asking her Consent, so he thought he had a right to betray her for our benefit, by making her Miracles familiar.

LASTLY, Having proved every thing that he had advanced, he was willing to give it Authority from the Testimonies of Authors sacred and profane. He did so by a Passage in *Pliny* the Naturalist, who informs us, *that Theophrastus and Mutianus fancy'd that Stones produce other Stones*: and by a Passage of *St. Gregory Nazianzen*, where this Father maintains, *that many Authors had written that Stones made love to each other*. This Love, tho very cold, is nevertheless fruitful; since from the Creation of the first Stones, the Race has been perpetuated to this day; and every one of 'em has preserv'd its Species, in the same manner as the Trees and Plants have done.

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AS the Birth and Generation of Stones had taken up *M. Tournefort's* Meditations, so the Causes of their Destruction seem'd to him to deserve to do the same. He made exact Observations upon the Lithophagi, a Name given to certain little Worms, which subsist by gnawing of Stones. One would think it no easy matter to persuade one's self that Stones can have Inhabitants, and even serve them for Food as well as Habitation. And yet both these Wonders are certain; and Stones have in them a sort of little Republicks of these Worms, which feed upon them. They are cover'd with a very minute Shell, greenish and ash-colour'd; and the Cavities these make by gnawing the Stones, are what the Vulgar ascribe to the Impression of the Moon.

THE different Countries *M. Tournefort* had journey'd through, furnish'd him with Subjects for several particular Dissertations. Among others, he has treated of the Island of *Milo*, where, as in most of the Islands of the *Archipelago*, they cannot ripen the Garden-Figs but by the Punctures of certain Insects, which are form'd in the Wild-Figs, and which they carry on purpose to the Trees that produce the former, that those Insects may prick the Fruit in order to ripen it.

AFTERWARDS he explain'd the Cause of the subterranean Fires which are in that Island; and he ascribes them to the Filtration of the Sea-Water, which insinuating through the Pores of the Earth, wets the Iron-Mines that abound in it, and there causes violent Bubbings, by the Sea-Salt that mixes with them, and makes them take fire. This Thought has been found true, by various Experiments made by the most able Chymists.

WHILE he was making all these curious Observations, his beloved Study was not forgot. The Distempers of Plants and Trees had a due share of his Inquiries. He ascribes the Cause of them either to the too great Abundance, or to the Want, or to the unequal Distribution of the nutritious Juices; or else to the bad Qualities those Juices may contract; or lastly, to divers exterior Accidents.

WHO would imagine, Sir, that a Tree could be suffocated? This at first seems incredible; and yet *M. Tournefort* has shewn, that the Overabundance of Nutriment produces this Effect in certain Trees, because it clods in the Vessels, and there stops; so that the new Juices which rise
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from the Root, finding those Passages obstructed, get by little and little to the Channels form'd like a wreathed Pillar, and which are as it were the Lungs of Plants: there they hinder the Passage of the Air; and the Circulation being thus intercepted, the Tree is suffocated and dies, in the same manner as an Animal that is stifled.

AS to the several exterior Accidents that cause the Distempers of Plants, *M. Tournefort* specifies some few of them.

THE first is Hail; it bruises the Fibres, and then causes a sort of Obstructions; which are much less considerable when the Hail is mix'd with Rain, because the Water makes those Fibres more supple, which in some measure deadens the Blow, and gives room to the Juices to flow with greater ease.

THE second is Frost; which kills them, because the watry Particles of the Juices being condens'd in their Pores, splits and tears them, as Water frozen breaks the Vessel which contains it.

THE third is Mouldiness; it has been discover'd by the assistance of the Microscope, that this is nothing but the birth of a multitude of little Plants, which are ne'er the less real, tho they escape our sight. They have their Leaves, their Flowers, and their Fruits. I have seen of them, Sir, which have round Flowers, consisting of six Leaves; some with Buds half open; and others, which after having been some time blown, were faded away. They are little Parasites, that suck away part of the Substance allotted by the Earth for the Nutriment of the Plant to which they adhere. Yet the greatest mischief they do to a Plant, is not their subsisting at its cost: But as their Roots are very slender, they insinuate into the Partitions of the Pores, and enlarge them; which produces a Rottenness or Gangrene, that kills the Plant if not timely remedy'd.

THE other Accidents are the punctures of various Insects. As they deposite their Eggs in the holes which they pierce in the Plants, those Eggs cause Tumours there; these little Fractures occasioning the shedding of the nutritious Juices, which run into the neighbouring Pores, and make them swell in proportion as they dilate their Fibres. What also hinders the Juices from resuming their ordinary Course, is the little Obstructions that the Deposite of the Eggs of those Insects causes in the Pores of the Plant. This is the Original of Gall-Nuts, Sage-Apples, Picea-Hives,
and

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and several other Tubercula, that grow upon the Thistle, Eglantine, and almost all Turpentine-Trees; whose Juices being very viscous, resume their Course with greater difficulty than those of other Trees, when once they are diverted.

M. *TOURNEFORT* did not think it sufficient to have found out the Distempers of Plants, and penetrated their Causes, unless he also discover'd the Symptoms by which they may be known, the Method of preventing them, and the Remedies proper to cure them: all this he has very exactly explain'd, being no less their Physician than their Anatomist. These Inquiries are not barely curious, they may be reckon'd some part of his Profession; since by preventing and curing the Distempers of Plants, he puts them in a better condition of preventing and curing the Distempers of Man. I believe, Sir, 'twill not be thought extravagant to say upon this, that M. *Tournefort* seem'd to be the Genius of Botany and of Medicine; I dare not go so far, as to call him that of Physics and of Nature.

NO less fond of the Discoveries of others, than capable of making them himself; he took particular pleasure in reading to the Academy of Sciences an Anatomical Dissertation upon the Castors of *Canada*. There was also in it an account of all the Actions of those amphibious Creatures; their way of living, building, and defending themselves against Inundations; their Cunning and their Stratagems; and, if we may use such Expressions, their Manners and Polity. He had this curious Piece of M. *Sarrazin*, Royal Physician in *Canada*, and one of his Correspondents for Science in *America*.

THIS, Sir, is but part of what I gather'd from M. *Tournefort*'s Conversation at various times. 'Twould be a Work of too great length to relate all the other things which he discover'd and discours'd of.

HIS Voyage into the *Levant*, which will make two Volumes in Quarto, now printing at the *Louvre*, gives a thorow Knowledge of the Man; the two Volumes contain twenty two Letters, wherein he sends M. *de Pontchartrain* an exact Account of all the Countries through which he travel'd.

IF this were a Poetical Epistle, I should tell you, that every Letter is as it were enamel'd with an agreeable Variety of Subjects. It contains

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Remarks