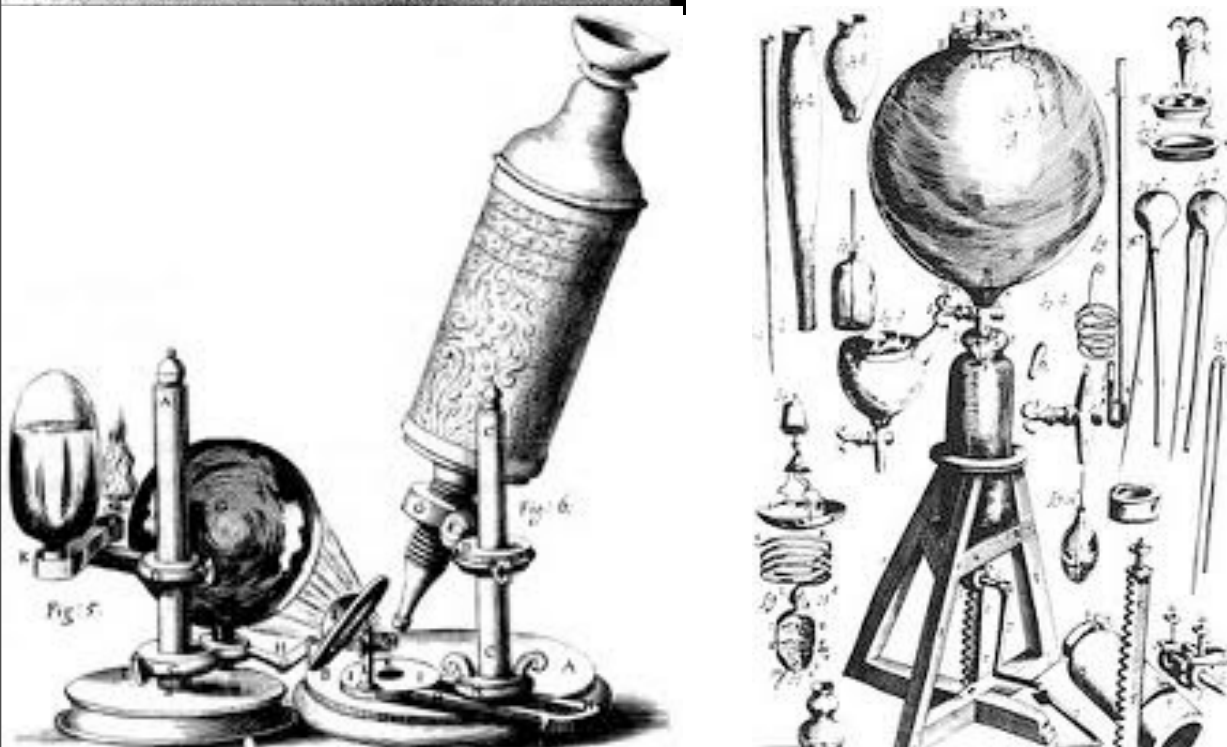


scientific "revolution"

searching for truth
going "open"



History of Information
Feb 14, 2013

grading assignments

30% from assignments

3% per assignment

see Assignment Guidelines

<http://blogs.ischool.berkeley.edu/i103s13/assignments/guidelines-for-writing-a-short-response/>

Last assignment (Knox)

46% 3.0

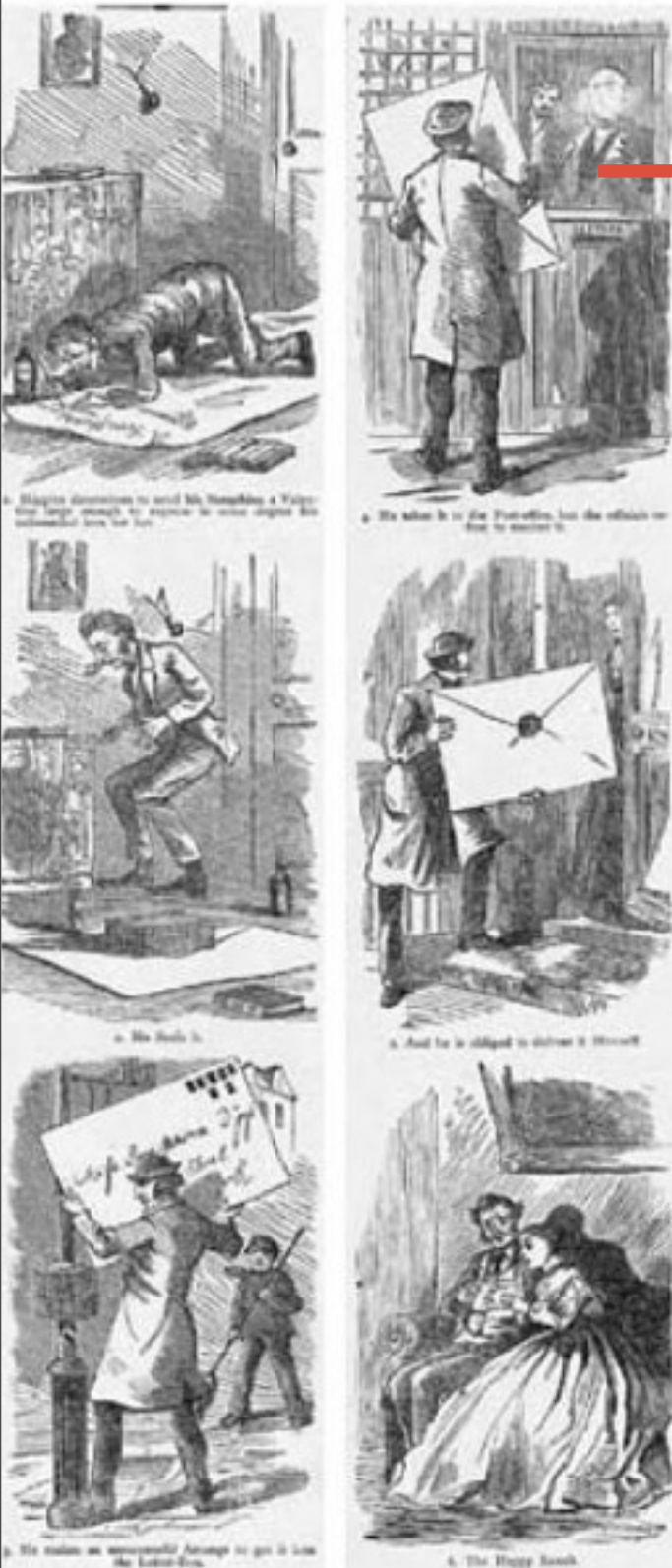
34% 2.5

Happy Valentine's Day

America's first postal holiday: *going point-to-point*

"The introduction of the printed valentine greetings in the 1840s was part of the cultural context of the postal revolution... encouraged, publicized, and celebrated popular interest in the post."

David Henkin, *The Postal Age* ch 6.



LATEST NEWS »

BAM! WAP! KA-POW! Library prof bops doc who K.O.'d comic book industry



Photo by
L. Brian Stauffer

Carol Tilley, a library and information science professor, has found that an anti-comic book psychiatrist in the 1950s "played fast and loose with the data."

« Click photo to

Andrew Wakefield sues BMJ for claiming MMR study was fraudulent

BMJ and investigative journalist stand by allegations in articles about research linking MMR vaccine to autism

Ian Sample, science correspondent
guardian.co.uk, Thursday 5 January 2012 13.17 EST

STORY

+1 30 Like 2.5 EM

2/11/2013 | Dusty Rhodes, Arts and Humanities Editor | 217-333-0568; rhodes8@illinois.edu

CHAMPAIGN, Ill. — Behavioral problems among teenagers and preteens can be blamed on violence, sex and gore portrayed in the media marketed to them — that was the topic of public hearings held by the U.S. Senate Subcommittee on Juvenile Delinquency in 1954 to address the scourge of comic books. The hearings, which resulted in the decimation of an enormous comic book industry, had been inspired in large part by the book "The Delinquent and the City of the Innocent," by psychiatrist Fredric Wertham, based on his own case studies.

Wertham's personal archives, however, show that the doctor revised children's ages in their quotes, omitted other causal factors and in general "played fast and loose with the data gathered on comics," according to an article by [Carol Tilley](#), published in a recent issue of [Information and Culture: A Journal of History](#).



In 2010 the GMC found Andrew Wakefield guilty of serious professional misconduct

in
the
news

Gunmen in Nigeria kill nine polio health workers

Boko Haram sect suspected of carrying out two separate attacks on medical centres in northern

WSJ BLOGS

Reuters in Kano
guardian.co.uk, Friday 8 February 2013



Muslim leaders in northern Nigeria were saying they could cause infertility and A

Gunmen on motorbikes have shot

C. Corporate Intelligence

What matters right now in business. From WSJ reporters around the world.

February 13, 2013, 12:43 PM

More Lucrative Than Cocaine: Fake Medicine On The Rise

Article

Comments (8)

Email

Print



A

A

By Christopher Weaver

The risks of fake and flawed medicines have leapt from developing nations to Western supply chains, thanks to gaps in oversight of drug wholesalers, lax law enforcement, and ineffective tactics for tracking drugs as they change hands, according to a [report released Wednesday by the Institute of Medicine](#).



scientific *revolution*

putting the other "Rs" in their place

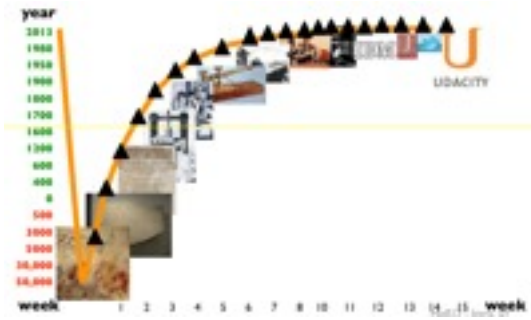
"The Scientific Revolution outshines everything since the rise of Christianity and reduces the **Renaissance** and **Reformation** to the rank of mere episodes, mere internal displacements within the system of medieval Christianity."

--Herbert Butterfield,
The Origins of Modern Science, 1300-1800, 1948

where we've got to & where we're going



overview



whom to trust

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problems

what
happened

who was
involved

what came
before

age of
information

"Those dreadful
revolutions,
which cannot be
beheld upon
Paper, without
horror; unless
we remember,
that they had
this one happy
effect, to open
mens eyes to
look out for the
true Remedy."

--Sprat, *History*

context: political revolution

English Civil War, 1642-1649

death of Charles I

Commonwealth & Protectorate, 1649-1659

Restoration, 1660

return of Charles II

Great Plague, 1665

Fire of London, 1666

"La sange du juste à Londres fera faute
Bruslez par foudre de vingt trois le six,
La dame antique cherra de place haute
De meme sute plusieurs seront occis"

print's legacy: almanacks & prophecy



An Almanack
for the yere. M. D. lxvi.
Composed by M. Michael
Nostradamus Doctour
in Physicke/ of Salen of
Graux in Prouince.

Whā the sonne fayleth & fieth/ then shal
the monster be seene in the playne day
Then shall interprete it farre otherwise
derth hath no respect/ none shall pro-
vide for it.



"Sir Thomas Crewe...hath heard at the Committee for
examining the burning of the city,that it was
done by plots ... it was bragged by several Papists
that upon such a day in such a time, we should find
the hottest weather that ever was in England; and
words of plainer sense" --Pepys, November 2, 1666

"We talked much of Nostradamus his prophecy of these
times, and the burning of the City of London, some
of whose verses are put into Booker's Almanac this
year My Lady Carteret herself did tell us how
abundance of pieces of burnt paper were cast by the
wind .. .she took one up ... wheron there remained
no more nor less than these words: "Time is, it is
done"
--Pepys, February 3, 1666/7



"La sange du juste à Londres fera faute
Bruslez par foudre de vingt trois le six,
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print's legacy: almanacks & prophecy



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A detailed black and white illustration of a 17th-century English coffeehouse. In the foreground, a man in a wig and coat pours coffee from a pot into a cup. Behind him, several other men in similar attire are engaged in conversation, some holding coffee cups. A man in the center holds a newspaper. The background shows a counter with various coffee-making equipment and a framed picture on the wall.

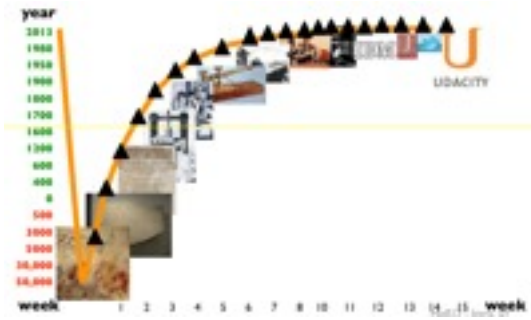
"I lately dropped into a Coffee-House at *Westminster*, where I found the Room hung around with ... Elixirs, Tincture, the *Anodine Fetus*, *English Pills*, Electuaries, and in short, more remedies than I believe there are diseases."

[illegible]

"... they will gather together about one that can read, ... where the principles of rebellion are instilled into them."

--Charles Leslie, *The Rehearsal*, 1750

overview



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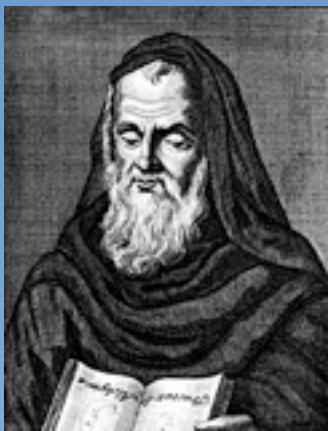
what
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age of
information

proto science



Roger Bacon
c 1214–1292



Francis Bacon
1561–1626

scientific rumblings

Roger Bacon *scientia experimentalis*

"disregarding the crowd's approach"

Francis Bacon, *New Atlantis*

idols of the tribe

idols of the cave

idols of the market place

idols of the theatre

"[FB] sought and gather'd for our use the Tru"

--Cowley "To the Royal Society"

their purpose

"... is, in short, to make faithful Records, of all the Works of Nature, or Art, which can come within their reach: that so the present Age, and posterity, may be able to put a mark on the Errors, which have been strengthened by long prescription: to restore the **Truths**, that have lain neglected: ... to separate the **knowledge** of Nature, from the colours of Rhetorick, the devices of Fancy, or the delightful deceit of Fables."

--Sprat

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"Why do we not,
I say, turn
over the living
book of the
world instead
of dead
papers."

John Comenius
(1592–1670)

fables to truth

from **Ptolemy** (c. 100-170)

to

Copernicus, Galileo, Tycho, Kepler, Newton

from **Hippocrates** (460-375 bce), **Galen** (c. 129-216)

Ayurveda, *Yellow Emperor's Inner Canon*

to

Paracelsus (1493-1541), taught by Trithemius

Harvey (1578-1657)



ALBUCASIS
DE
CHIRURGIA.

ARABICE ET LATINE.

TOMUS PRIMUS.

CURA
JOHANNIS CHANNING,
NATU ET CIVITATE LONDINENSIS.

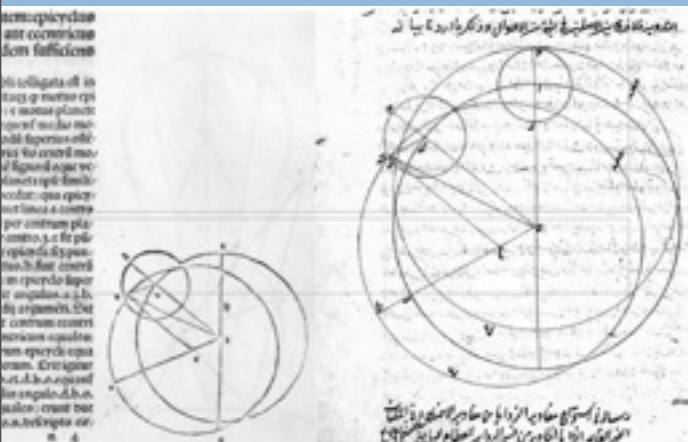
OXONI:
E TYPOGRAPHEO CLARENDONIANO.
M DCC LXX VIII.

don't forget

al-Zahrawi [Albucasis] (936-1013), *Al-Tasrif*
(An Aid for those Who Lack the Capacity to Read Big Books)
--surgery, orthopedics, ophthalmology, nutrition
republished over 700 years (see *Albucasis de Chirurgia*, 1778)

Ibn al-Haytham [Alhazen] (965-1040)
--optics; Euclid's *Elements*, doubts about Ptolemy
influence Roger Bacon, Kepler

Ali Qushji (1403-1474)





Gresham College
28 Nov 1660

"Followers of
nature itself
and **truth**"

-Henry Oldenburg

"by the influence, which these Gentlemen had over
the rest, that the *University* it self ... was sav'd
from ruine." --- Sprat

followers

"that future times should hear the *names* of
its first *Promoters*"

Wilkins (1614-1672)

Pepys (1633-1703)

Boyle (1627-1691)

Evelyn (1620-1701)

Wren (1632-1723)

Moxon (1627-1691)

Locke (1632-1704)

Graunt (1620-1674)

Hooke (1635-1703)

Petty (1623-1687) ...

Newton (1642-1727)

Benjamin Franklin
(1706-1790)

Halley (1656-1742)



Nullius in Verba

revolutionary beliefs

new scientists

"Men did generally think, that no man was fit to meddle in matters of this consequence, but he that had bred himself up in a long course of Discipline for that purpose; that had the habit, the gesture, the look of a Philosopher. Whereas experience on the contrary tells us, **that greater things are produc'd, by the free way, than the formal.**"

-Sprat

revolutionary beliefs

"oportet praeterea, liberali animo philosophum
esse"

--Alcinous (?1 cent CE)

"filosofar vuol esser libero"

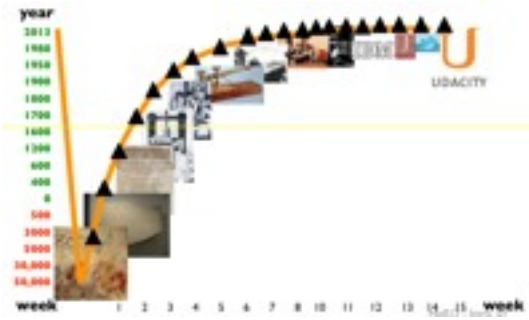
-- Galileo

"libertas philosophandi"

--Kepler, Descartes, Spinoza

"information wants to be free"

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Sprat's *model*

knowledge of *Nature*

"They have labor'd to inlarge it, from being confin'd to the custody of a few; or from servitude to private interests.

"They have striven to preserve it from being over-press'd by a confus'd heap of vain, and useless particulars; or from being straitned and bounded too much up by General Doctrines."

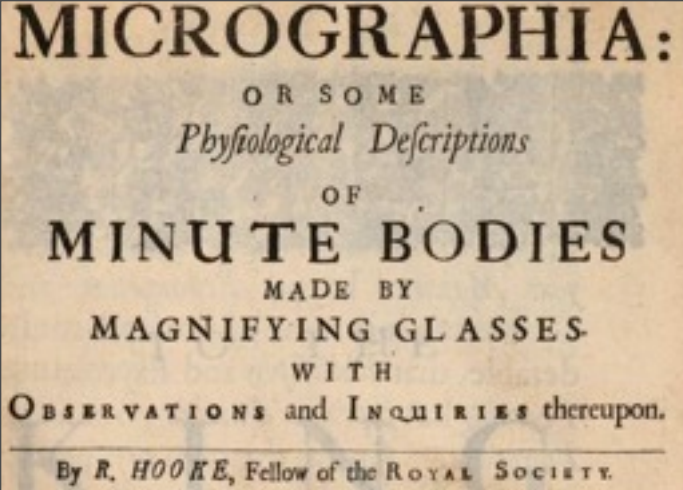
Sprat's *model*

Not so much, by any solemnity of Laws, or ostentation of Ceremonies, as by **solid Practice**, and examples: not, by a glorious pomp of Words; but by the silent, effectual, and unanswerable Arguments of **real Productions**.

Members ... different Religions, Countries, and Professions ... not to lay the Foundation of an English, Scotch, Irish, Popish, or Protestant Philosophy; but a **Philosophy of Mankind**. ... the Church of England ought not to be apprehensive

the general Banck, and Free-Port of the world

... receive strangers from all countries, into its number



observation & experimentation

Hooke & Boyle

"Trials in Chymistry, or Mechanicks ...
the right *Art of Experimenting*"

--Sprat

justifying technology

"I judged that whatever men's eyes were
in the younger age of the World, our
eyes in this old age of it needed
spectacles"

--Hooke



Robert Hooke
1635-1703



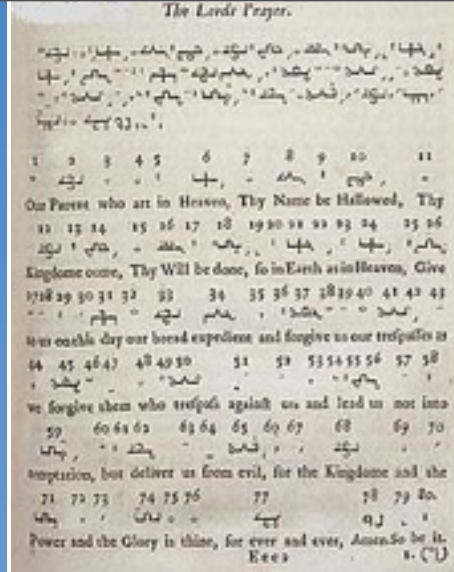
Robert Boyle
1627-1691



John Wilkins
1614–1672



Henry Oldenburg
1619–1677



communication

corresponding secretary

"their intention was more to communicate to each other their discoveries ... some resemblance, to the Academy lately begun at Paris ... to all the learned world they called for aid"

--Sprat

"publish'd to the world"

"[Publication] is a most heroick Invention: For by such concealments, there may come very much hurt to mankind. If any certain remedy should be found out against an Epidemical disease; if it were suffer'd to be ingross'd by one man, there would be great swarms swept away, which otherwise might be easily sav'd."

-- Sprat

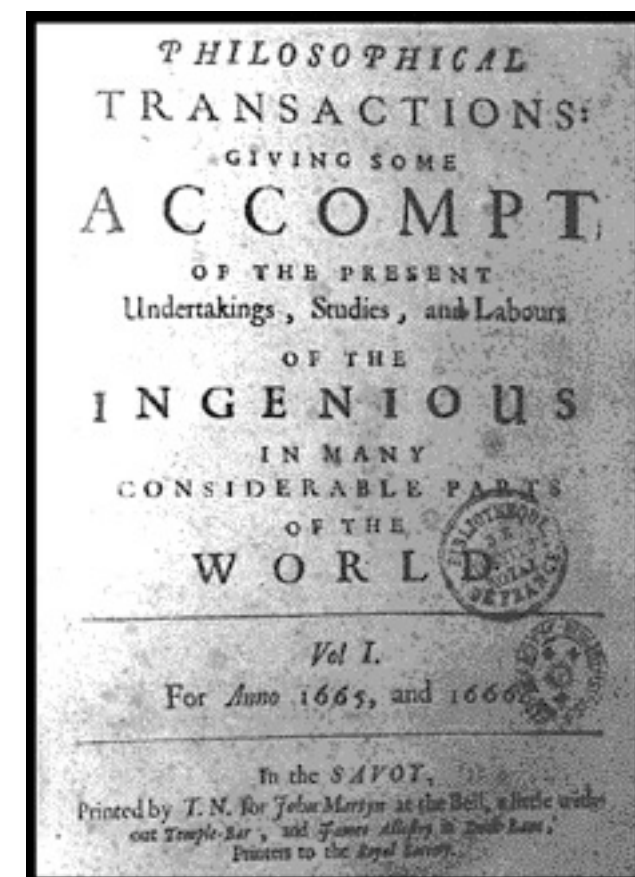
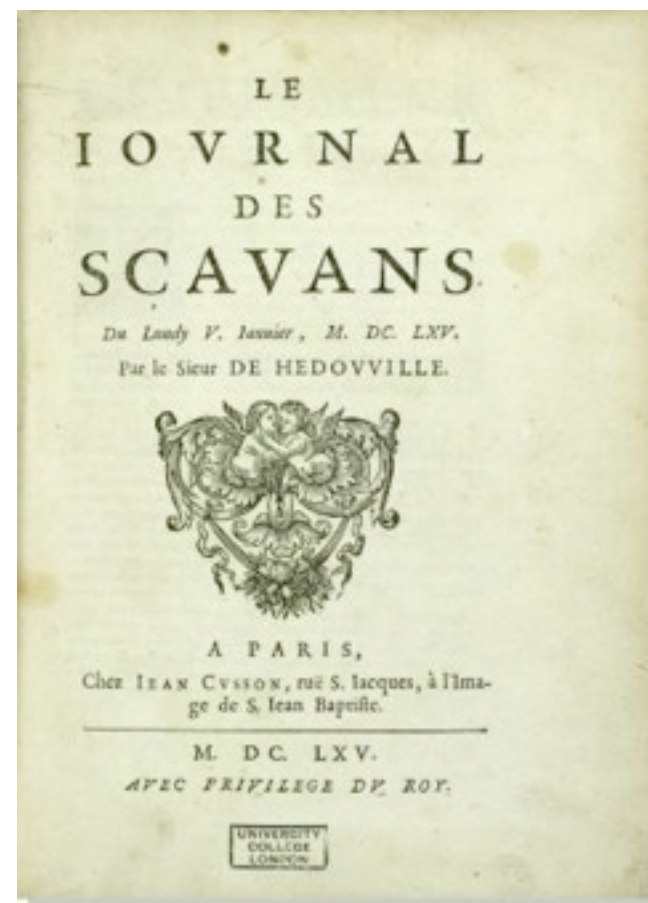
"Hooke concealed his invention about Watches too long; pray tell him not to do so with what other things hee hath of that kind

--Oldenburg
8 -Hof113-Science 26

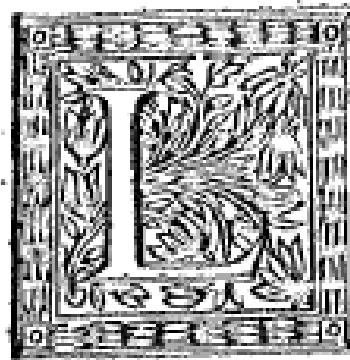
journals

Journal des Scavans, 1665

Philosophical Transactions, 1665



L'IMPRIMEUR AU LECTEUR.



Le dessein de ce Journal estant de faire sçavoir ce qui se passe de nouveau dans la Republique des lettres, il sera composé,

Premierement d'un Catalogue exact des principaux livres qui s'imprimeront dans l'Europe. Et on ne se contentera pas de donner les simples titres, comme ont fait jusques à present la plupart des Bibliographes : mais de plus on dira de quoy ils traitent, & à quoy ils peuvent estre utiles.

Secondement, quand il viendra à mourir quelque personne celebre par sa doctrine & par ses ouvrages, on en fera l'Eloge, & on donnera un Catalogue de ce qu'il aura mis au jour, avec les principales circonstances de sa vie.

En troisieme lieu on fera sçavoir les experiences de Physique & de Chymie, qui peuvent servir à expliquer les effets de la Nature : les nouvelles decouvertes qui se font dans les Arts & dans les Sciences, comme les machines & les inventions utiles ou curieuses que peuvent fournir les Mathematiques : les observations du Ciel, celles des Meteores, & ce que l'Anatomie pourra trouver de nouveau dans les animaux.

En quatriesme lieu, les principales decisions des Tribunaux Seculiers & Ecclesiastiques, les censures de Sorbonne & des autres Universitez, tant de ce Royaume que des Pays estrangers.

Enfin, on taschera de faire en sorte qu'il ne se passe rien dans l'Europe digne de la curiosité des Gens de lettres, qu'on ne puisse apprendre par ce Journal.

Le seul denombrement des choses qui le composeront pourroit suffire pour en faire connoistre l'utilité. Mais j'edifieray qu'il sera tres-advantageux à ceux qui entreprendront quelque ouvrage considerable, puis qu'ils pourront s'en servir pour publier leur dessein, & inviter tout le monde à leur communiquer les manuscrits, & les pieces fugitives qui pourront contribuer à la perfection des choses qu'ils auront entreprises.

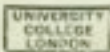
LE JOURNAL DES SCAVANS.

Du Lundy V. Janvier, M. DC. LXV.
Par le Sieur DE HEDOVILLE.



A PARIS,
Chez JEAN CVSSON, rue S. Jacques, à l'ima-
ge de S. Jean Baptiste.

M. DC. LXV.
AVEC PRIVILEGE DU ROY.



PHILOSOPHICAL
TRANSACTIONS:
GIVING SOME
ACCOMPT
OF THE PRESENT
Undertakings, Studies, and Labours
OF THE
INGENIOUS
IN MANY
CONSIDERABLE PARTS
OF THE
WORLD

Vol I.

For Anno 1665, and 1666

In the SAVOY,
Printed by T. N. for John Martyn at the Bell, a little with-
out Temple-Bar, and James Allibon in Pall-mall.
Printers to the Royal Society.

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(1)

Numb. 1.

PHILOSOPHICAL TRANSACTIONS.

Munday, March 6. 166th.

The Contents.

An Introduction to this Tract. An Account of the Improvement of Optick Glasses at Rome. Of the Observation made in England, of a Spot in one of the Belts of the Planet Jupiter. Of the motion of the late Comet predicted. The Heads of many New Observations and Experiments, in order to an Experimental History of Cold; together with some Thermometrical Discourses and Experiments. A Relation of a very odd Monstrous Calf. Of a peculiar Lead-Ore in Germany, very useful for Essays. Of an Hungarian Bolus, of the same effect with the Bolus Armenus. Of the New American Whale-fishing about the Bermudas. A Narrative concerning the success of the Pendulum-watches at Sea for the Longitudes; and the Grant of a Patent thereupon. A Catalogue of the Philosophical Books published by Monsieur de Fermat, Counsellor at Tholouse, lately dead.

The Introduction.



VHEREAS there is nothing more necessary for promoting the improvement of Philosophical Matters, than the communicating to such, as apply their Studies and Endeavours that way, such things as are discovered or put in practise by others; it is therefore thought fit to employ the *Press*, as the most proper way to

PHILOSOPHICAL
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Presented to the Royal Society.

(1)

Numb. 1.

PHILOSOPHICAL

TRANSACTIONS

(10)

An Account of a very odd Monstrous Calf.

By the same Noble person was lately communicated to the *Royal Society* an Account of a very Odd Monstrous Birth, produced at *Limmington* in *Hampshire*, where a Butcher, having caused a Cow (which cast her Calf the year before) to be covered, that she might the sooner be fatted, killed her when fat, and opening the Womb, which he found heavy to admiration, saw in it a Calf, which had begun to have hair, whose hinder Leggs had no Joynts, and whose Tongue was, *Cerberus*-like, triple, to each side of his Mouth one, and one in the midst: Between the Fore-leggs and the Hinder-leggs was a great Stone, on which the Calf rid: The *Sternum*, or that part of the Breast, where the Ribs lye, was also perfect Stone; and the Stone, on which it rid, weighed twenty pounds and a half; the outside of the Stone was of Grenish colour, but some small parts being broken off, it appeared a perfect Free-stone. The Stone, according to the Letter of Mr. *David Thomas*, who sent this Account to Mr. *Boyle*, is with Doctor *Haughteyn* of *Salisbury*, to whom he also referreth for further Information.

PHILOSOPHICAL
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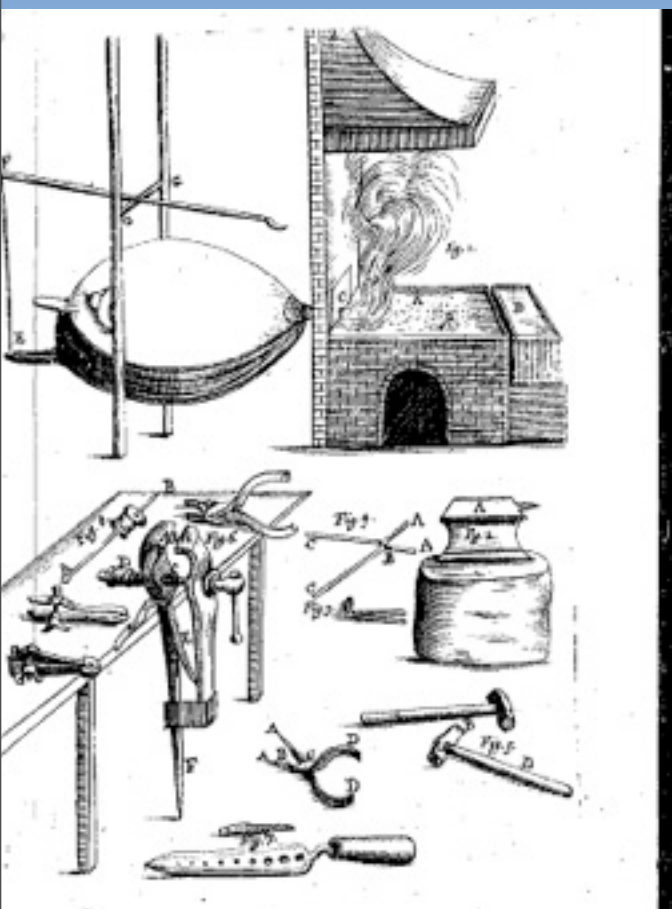
Joseph Moxon
1627–1691

not so philosophical

philosophers, physicians, and mechanics

"this freedom ... which they use in embracing all assistance ... is most advantageous to them"

--Sprat



MECHANICK EXERCISES, OR, The Doctrine of Handy-works.

Began Jan. 1. 1677. And intended to be
Monthly continued.

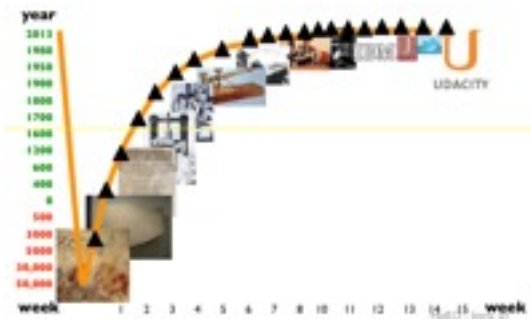
By Joseph Moxon Hydrographer to the
Kings most Excellent Majesty.



LONDON,

Printed for Joseph Moxon at the sign of Atlas on
Ludgate-Hill, 1677.

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Charles II
1630–1685

failed demos

royal mockery

"the King came and stayed an hour or two laughing at Sir W. Petty, who was there about his boat; and at Gresham College in general; at which poor Petty was, I perceive, at some loss; but did argue discreetly, and bear the unreasonable follies of the King's objections and other bystanders with great discretion; .. but the King ... cried him down with words only. Gresham College he mightily laughed at, for spending time only in weighing of ayre, and doing nothing else since they sat."

--Pepys, February 1, 1663/4
8 -Hof13-Science 32



"Vertuous, and Learned Men" -- Sprat

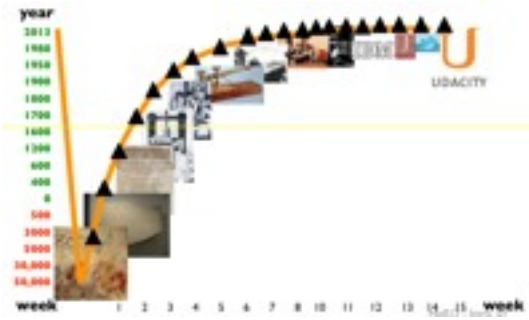
trouble for the virtuosi

airheads

"I have sent one to weigh Air at the Picque of Teneriff that's the lightest Air. I shall have a considerable Cargo of that Air. Sheerness and the Isle of Dogs Air is the heaviest. Now if I have a mind to take Countrey Air, I send for, may be, forty Gallons of Bury Air, shut all my windows and doors close and let it fly in my Chamber."

Shadwell, *Virtuoso* 1676

overview



who to trust

case histories

plague
pox

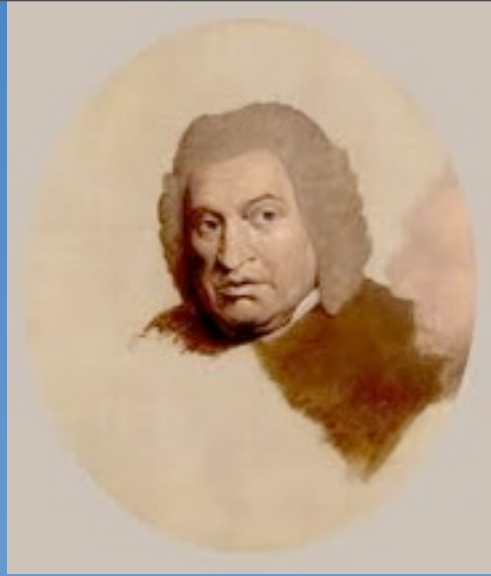
model problems

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Samuel Johnson
1708–1784

health sciences

dashed hopes

"[T]he time was supposed to be near, when ...
health [should] be secured by the universal
medicine;

"The society met and parted without any visible
diminution of the miseries of life. The gout
and stone were still painful."

--Samuel Johnson, *Idler* 1759



slow progress

The plague is much in Amsterdam, and we in fears of it here.

Pepys, **Dec.** 31, 1663

The talk upon the 'Change is, that De Ruyter is dead, with fifty men of his own ship, of the plague, at Cales

June 30, 1664

We were told to-day of a Dutch ship ... where all the men were dead of the plague, and the ship cast ashore at Gottenburgh

Sept. 24, 1664

Thence to the Coffee-house ... where all the newest is of the Dutch ... and of the plague growing upon us in this towne

May 24, 1665



slow progress

The towne grows very sickly, and people to be
afeard of it; there dying this last week of the
plague 112, from 43 the week before. The
Mortality Bill is come to 267; June 29th, 1665
Above 700 died of the plague this week.

July 13, 1665

The sickness is... almost every where, there
dying 1089 of the plague this week.

July 19, 1665

AN
ADVERTISEMENT

FROM THE

Society of Chymical Physicians,

TOUCHING

MEDICINES by them prepared, in pursuance

Majesties Command

For the Prevention, and for the Cure of the

PLAGUE

It being a matter sworn by the
yea and now openly acknowledged
that in Galenic Doctrine and Mod-
est manner of collection any other
than, and that the other being,
whereby it is clearly given and granted, that the
upon have been by these worthy Persons (particu-
larly: Thane of *Peckham*, *Contagion*. We
nourishing this their lovable and ingenious a
happy Centenary, be it in and there, teach
both, as it is a good thing towards a more fallow
work of care that it is of our have been with
as a more brotherly correspondence, and mean-
while, both as to Philosophical Practice, accord-
ing to the Faculty of Chymical Physicians
the charity befallen this great City by the Plag-
ue the use of these common Galenic Medicines,
have thought fit, in obedience to His Majesty's com-
mandment, to have the preparation of such
medicines, as are now become use of having *Antiseptic*
test, which is many things differs from the
Antiseptic. Which Medicines so prepared in
great God, who hath given us a heart and light in
need of diseases, will be found our wish away to
our hands, to leave the found, and save the sick.
In pursuance whereof, it is thought meet to be
and be furnished with the *Antiseptic* to be as good
in order to Prevention, and in case of Cure.

Dr. William Gifford, in St. J.
Close near *Chancery*.
Dr. Matthew Nodden in St.
near *Apollon*.
Dr. Edward Boleyn in *Thomas*
near *Cripplegate*.
Dr. Thomas Williams in *St. Dunstons*
near *St. Dunstons*.

These Places are named, because our Society is now
Colledge, with publick Offices, so as we are the
necessity of being furnished accordingly, becometh
Lived 24 June 1665.

London Printed for John Starkey, and are

Ma

S

Re

THE
Surgeons Assistant.

In which is plainly discovered the
True Origin of most Diseases.

Treating particularly of the
Plague, French Pox, Leprosie, &c.

OF
The Biting of Mad Dogs, and other
Venemous Creatures.

A L S O
A Compleat Treatise of Cancers and
Gangreens.

W I T H
An Enquiry whether they have any alliance
with Contagious Diseases.

Their most Easie, and Speedy Method of Cure.
With diverse Approved Receipts.

By John Browne, Sworn Surgeon in Ordinary to his
late Most Excellent Majesty King William III.
and late Senior Surgeon of St Thomas Hospital in
Southwark.

L O N D O N,
Printed for James Knapton, at the Crown in St Pauls
Church-yard. MDCCLII.

Consilium Anti-Pestilientiale:
O R,
Seasonable Advice,
CONCERNING
Sure, Safe, Specifick, and Experi-
mented MEDICINES, both
for the Preservation from, and
Cure of this Present
PLAGUE.

Offered for the Publick Benefit of this
Afflicted Nation,
B Y
RICHARD BARKER, Med. Lond.

Gloriam dà Deo pro Misericordiâ,
& verè Judicia ejus.

London, Printed for the Author, Anno 1665.

plague years

A
JOURNAL
OF THE
Plague Year:
BEING
Observations or Memorials,
Of the most Remarkable
OCCURRENCES,
As well
PUBLICK as PRIVATE,
Which happened in
L O N D O N
During the last
GREAT VISITATION
In 1665.

Written by a CITIZEN who continued all the
while in London. Never made publick before

L O N D O N:

Printed for E. Nott at the Royal-Exchange; J. Roberts
in Warwick-Lane; A. Dodd without Temple-Bar;
and J. Graves in St. James's-street. 1722.

print: solution or problem?

"Some endavours were used to suppress the printing of such books as terrified the people... these terrors ... led them into a thousand weak, foolish, and wicked things .. running about to fortune tellers ... streets were plastered over with doctors' bills and papers of ignorant fellows, quacking and tampering in physic, and inviting people to come to them for remedies . 'infallible preventive pills against the plague' ... 'Sovereign cordials against the corruption of the air'"

--Defoe, *Journal of the Plague Year*, 1722

8-Hof13-Science 39



advice of the physician

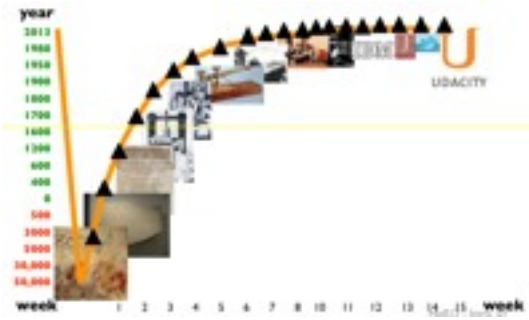
PROCLAMATION

" 'That no hogs dogs, or cats, ... be kept within any part of the city' ...

"Wherefore were we ordered to kill all the dogs and cats, but because as they were domestic animals, and are apt to run from house to house ...so they are capable of carrying ... infectious streams ... even in their furs and hair ... by the advice of the physician, that all dogs and cats should be immediately killed."

--Defoe, *Plague Years*

overview



who to trust

case histories

pox

model problems

what
happened

who was
involved

what came
before

age of
information



nasty, brutish, and short

smallpox

Queen Anne (1665-1714)

17 pregnancies, 3 still births, 10 miscarriages

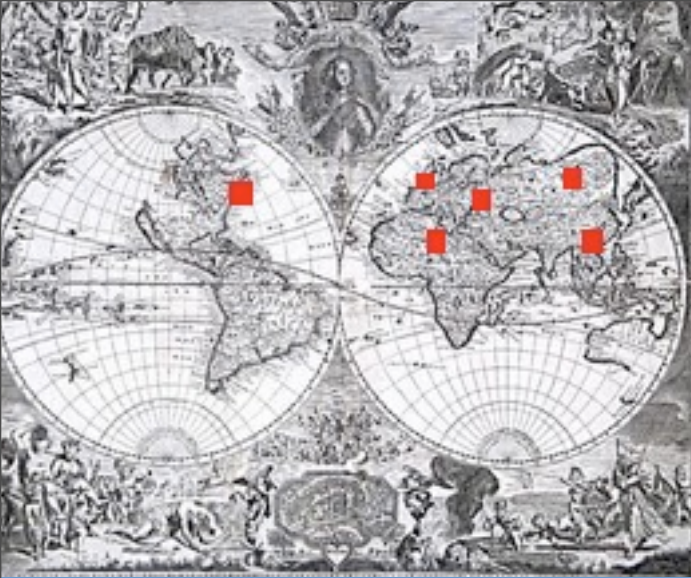
3 died in infancy of **smallpox**

William Duke of Gloucester (1689-1700)

Plains Indians

perhaps 90% of indigenous population





scientific revolution

inoculation/variolation

India:	8th century
China:	10th century
Tibet:	11th century
Africa:	?
Turkey:	? 16th century
England, France, US:	18th century

recurring resistance

18th, 19th, 20th, 21st century

RS precedent

"further improving of Bathing and Syringing into the veins, several ways, whereby several obstinate distempers of a humane body, such as the Gout, Dropsie, Stone, &c. might be mastered and expelled"

--Hooke, *Micrographia*
(about Wren's experiments)

inoculation

England, France, US 18th century

England

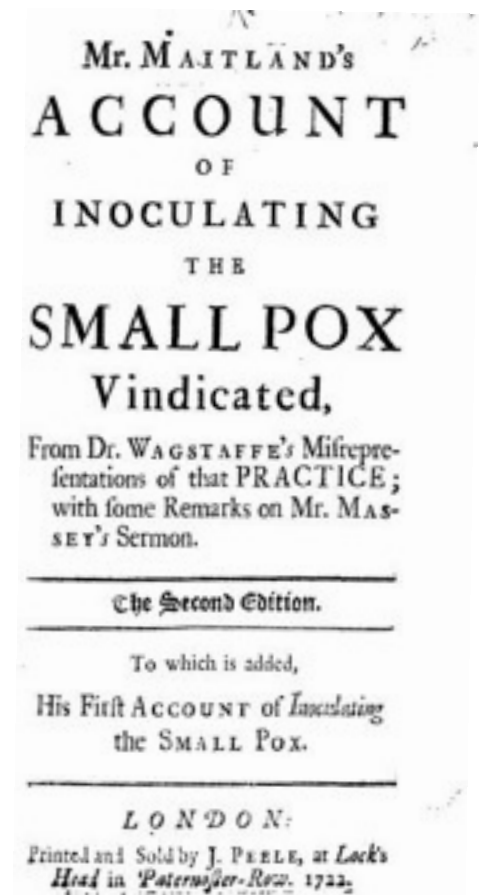
Lady Mary Wortley Montagu

France

Montpellier, but not Paris

US

Onesimus



by
John Arbuthnot
1667–1735



Lady Mary Wortley
Montagu
1689–1762



Voltaire

[François-Marie Arouet]

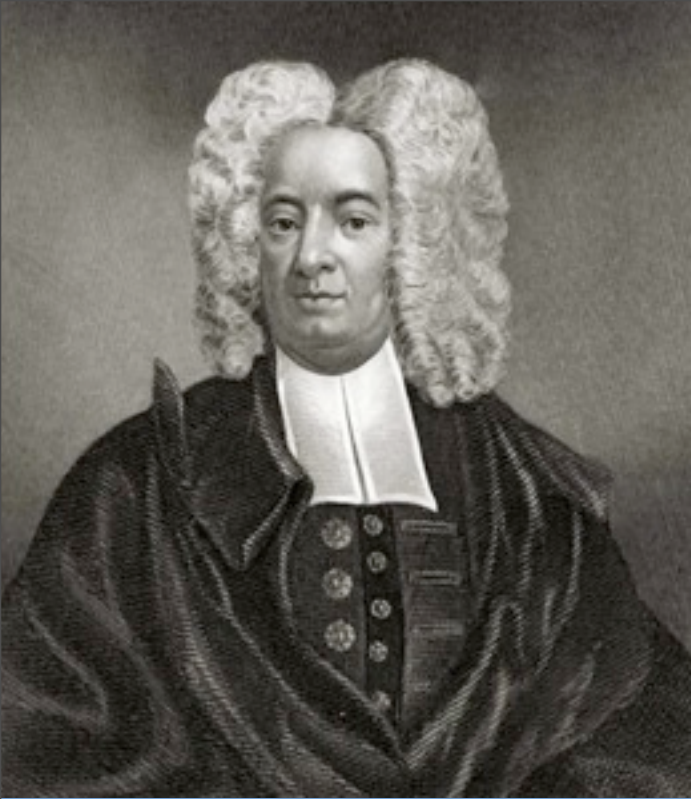
1694–1778

mad men

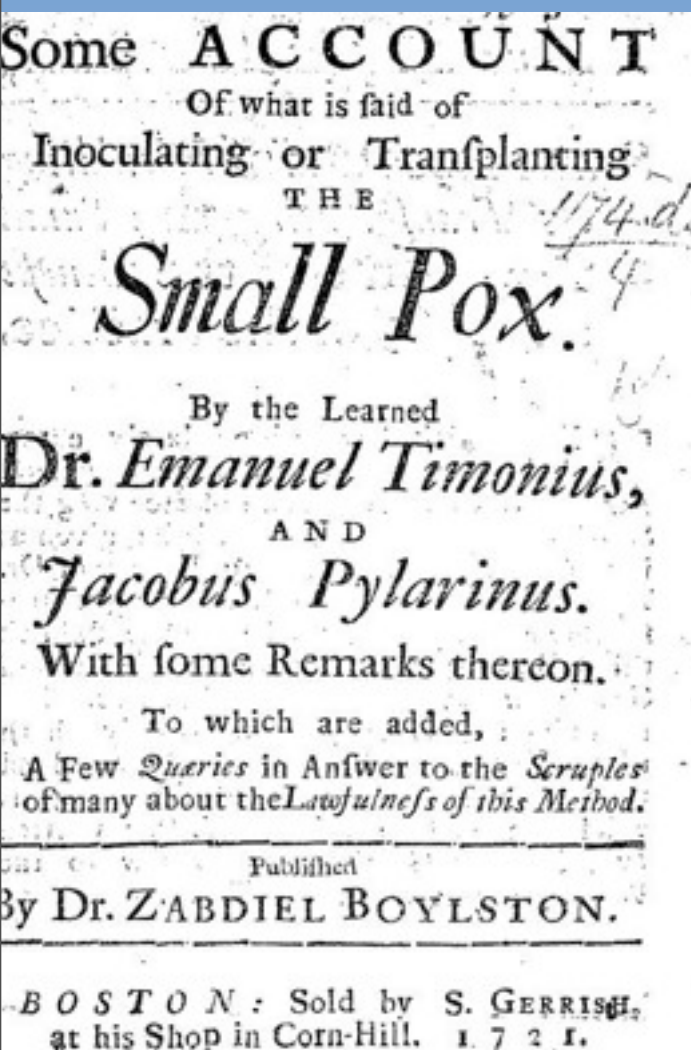
"It is whispered in Christian Europe that the English are mad and maniacs: mad because they give their children smallpox to prevent their getting it, and maniacs because they cheerfully communicate to their children a certain and terrible illness with the object of preventing an uncertain one. The English on their side say: 'The other Europeans are cowardly and unnatural: cowardly in that they are afraid of giving a little pain to their children, and unnatural because they expose them to death from smallpox some time in the future.' To judge who is right in this dispute, here is the history of this famous inoculation which is spoken of with such horror outside England."

--Voltaire, *Letters on England*

8 -Hof113-Science 46



Cotton Mather
1663–1728



"Cotton Mather, you dog, dam you! I'll inoculate you with this; with a pox to you" [note attached to missile]

crossing the Atlantic

Boston outbreak 1721

"Inquiring of my Negro-man, Onesimus, who is a pretty intelligent fellow, whether he had ever had the smallpox, he answered both yes and no. He told me that he had undergone the operation which had given something of the smallpox and would forever preserve him from it, adding that was often used in West Africa."

--Cotton Mather



Benjamin Franklin
1706–1790

To the Author of the New-England Courant,
S I R,
Reading in your last a Story concerning Inoculation, with the News of the intended Expedition against the Eastern Indians; they casually lodged together in the same Apartment of my Brain, and by next Morning formed themselves into the following Project.

A Project for reducing the Eastern Indians by Inoculation.

That there be forthwith enlisted a sufficient number of Inoculators, to be commanded by a Major General Inoculator, who in Quality of a Field Officer, may do Duty on Horseback.

That they be compleatly armed with Incision-Lancet, Pandora's Box, Nut-Shell and Fillet; their Exercise and Discipline to be according the Practice of that able and experienc'd Officer amongst the Turks (our Inoculator General's good Friend and intimate Acquaintance) Capt. General Timonius.

That their Ammunition be of the best Proof, that is, a Composition of Negro Yaws, and constant Small Pox.

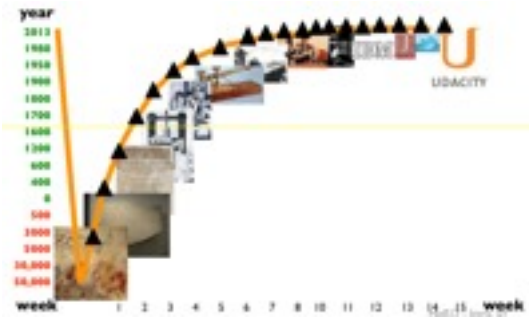
That the Inoculators be all Volunteers, who besides their usual Feet, and travelling Charges, may be allowed a Gratuity of 10 l. per Head, of each Indian who survives, conveys and spreads the Infection amongst his Tribe; and of 5 l. per Head for those who blow up too soon (or die) before they reach the Places where Execution is intended.

That in Consideration of the difference of Climate, and other more pressing Occasions, the Timonius directs such Expeditions to be made only in Winter and Spring, ours shall be in Summer, as in all Probability like to do most Execution in that Season.

The three greatest Evils incident to Mankind, are the Sword, Famine and Pestilence. The first, or War, hath been allowed and practised by all Nations in all Ages. The second is also made use of to annoy an Enemy; as in the Instance of Blockading, or starving strong Towns: But the doing of Execution by Infection or Pestilence, seems reserved for the Honour of the Inoculator and his Associates. That it is glorious and Lawful we have had it lately sufficient.

more
paradox

overview



whom to trust

case histories

model problems

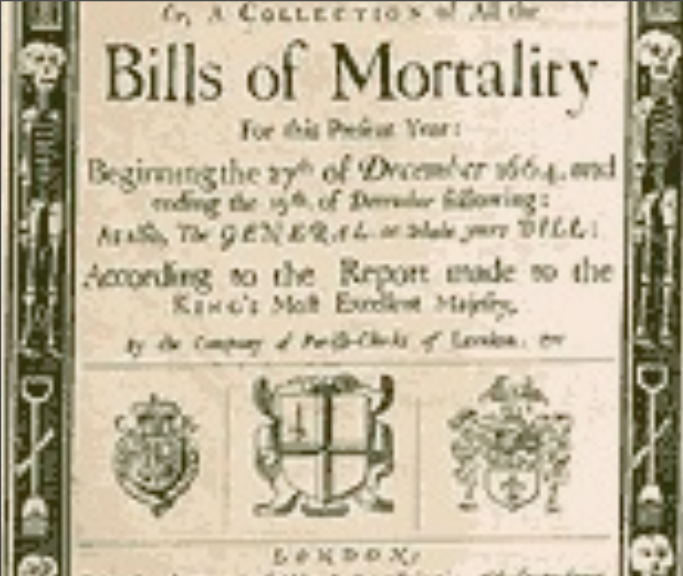
what
happened

"**Truth** is not enough for
you; you think it matters
who the speaker is and where
he comes from."

who was
involved

what came
before

age of
information



The Mortality Bill is come to 267; June 29th, 1665
Above 700 died of the plague this week.

July 13, 1665

big data

A generall Bill for this present year, ending the 19 of December 1665. according to the Report made to the KING's most Excellent Majesty. By the Company of Parish Clerks of London, &c.			
The Diseases and Casualties this year.			
Bottive and Stillborne	517	Executed	21
Aged	1545	Flux and Small Pox	655
Aquic and Peaver	5237	Found dead in Streets, fields, &c.	21
Popplex and Suddenly	116	French Pox	86
Idric	10	Frighted	23
afind	5	Gout and Sciatica	27
eeding	16	Grief	46
oodly Flux, Scurving & Flux	187	Gripping in the Guts	1238
unt and Scalded	8	Hungal & made away themselves	7
elentire	3	Headmole shot & Mole fallen	14
ances, Gangrene and Fiftula	56	Jaundies	120
anker, and Thrush	121	Imposume	227
illdoed	623	Kild by severall accidents	46
hritomes and Infants	1258	Kings Evil	88
old and Cough	66	Leprosie	2
ollick and Winde	134	Lethargy	14
onsumption and Tiffick	4808	Livergreen	21
onvulsion and Morice	1056	Meagrom and Headach	82
illtasted	5	Mealles	7
rouse and Turpany	1476	Mortified and Shot	9
rowned	5	Overjaud & Starved	45
Males		Males	
Females		Females	
In all		In all	
Buried		Buried	
Of the Plague		Of the Plague	
Increased in the Burials in the 130 Parishes and at the Pest-house this year.		79002	
Increased of the Plague in the 130 Parishes and at the Pest-house this year.		88570	

1603: regular bills of mortality

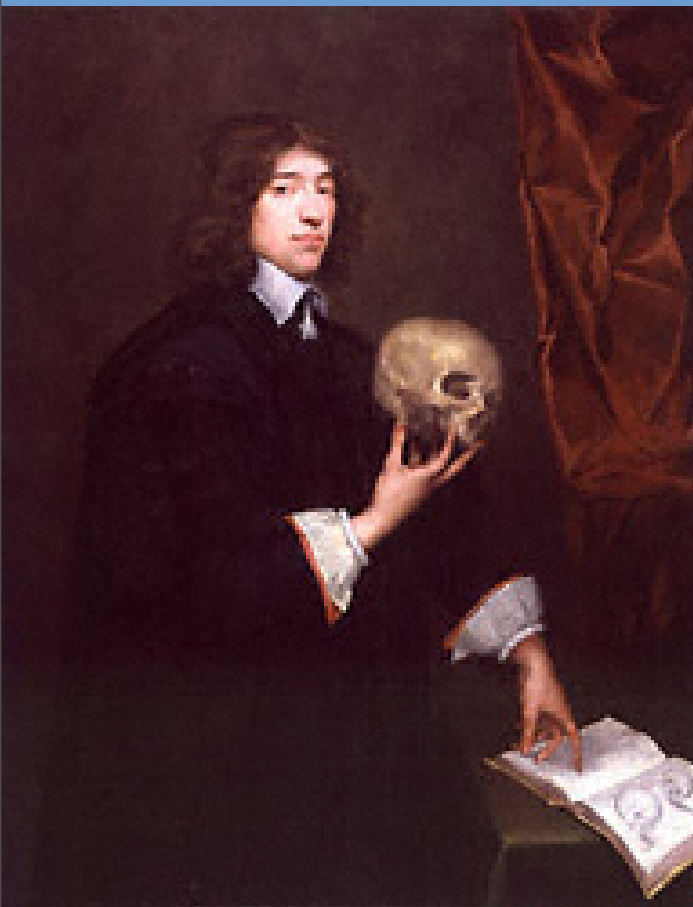
1611: incorporation of parish clerks counting by "searchers"

1629: other deaths

1728: age of deceased

1837: last bills

political arithmetic



William Petty
1623–1687

William Petty, RS

surveyor

Political Arithmetic of Ireland

velocity of circulation

natural vs market price

economic surplus

population change



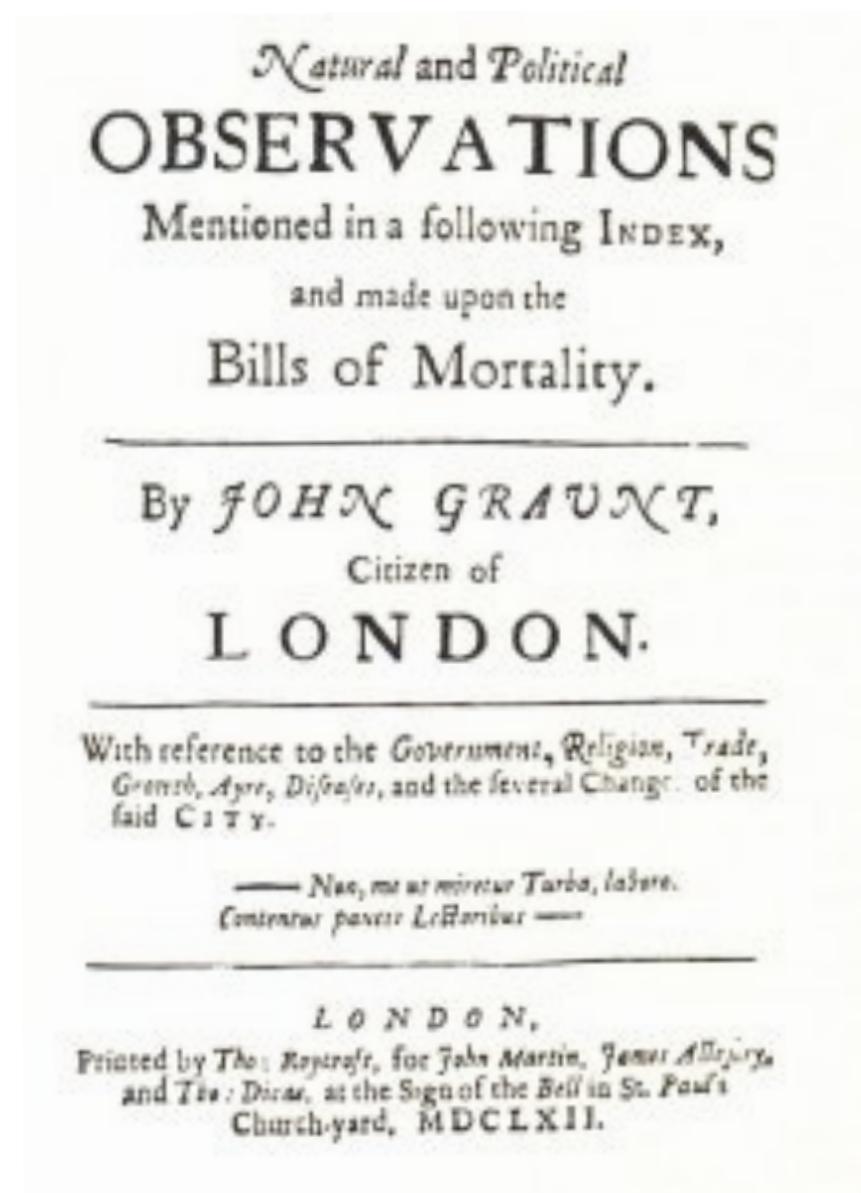
John Graunt
1620–1674

"His Majesty gave this particular charge to His Society, that if they found any more such Tradesmen, they should be sure to admit them all, without any more ado."

--Sprat

in a class of his own?

John Graunt, RS
Natural and Political
Observations ...
upon the Bills of Mortality
1662





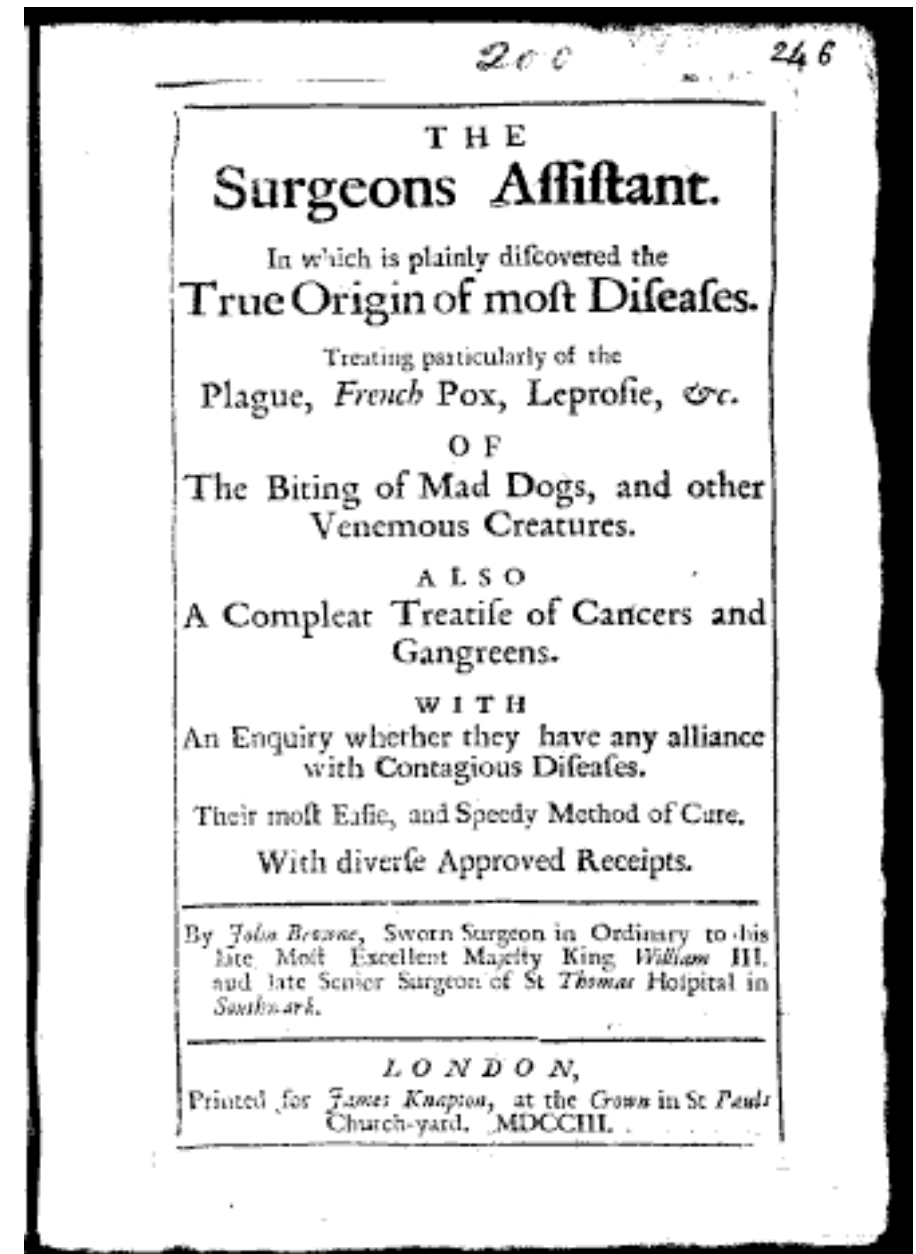
open science

matters of trust

in *books*

in *machines*

in *people*



Nullius in Verba

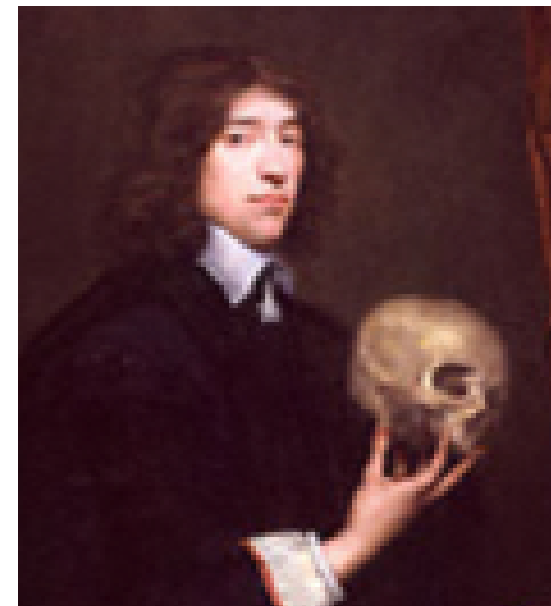
whom to trust

"the distribution
of credibility
followed the
contours of
English society"
--Steven Shapin

Hooke's
subordination

Graunt's
"shop arithmetic"

Petty
Anne Greene



whom to trust?



Cotton Mather

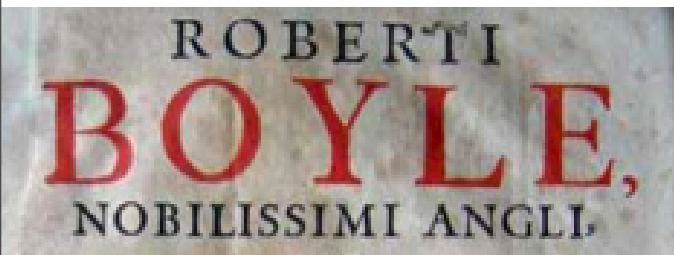
Wonders of the Invisible World, 1693



Benjamin Franklin

Fellow of the Royal Society

Nullius in Verba?



social revolution?

significant developments?

scientific societies

the English gentleman

"Though the Society entertains very many men of particular Professions; yet the farr greater Number are Gentlemen, free, and unconfin'd. ...

"to commit the Work to the care of such men, who, by the freedom of their education the plenty of their estates, and the usual generosity of Noble Bloud, may be well suppos'd to be most averse from such sordid considerations."

"we find many Noble Rarities to be every day given in, not onely by the hands of Learned and profess'd Philosophers; but from the Shops of *Mechanicks*; from the Voyages of *Merchants*; from the Ploughs of Husbandmen; from the Sports, the Fishponds, the Parks, the Gardens of Gentlemen"

--Sprat

Nullius in Verba

establishing authority

(1)

Numb. 1.

PHILOSOPHICAL TRANSACTIONS.

Munday, March 6. 1664.

The Contents.

An Introduction to this Tract. An Accompt of the Improvement of Optick Glasses at Rome. Of the Observation made in England, of a Spot in one of the Belts of the Planet Jupiter. Of the motion of the late Comet prædicted. The Heads of many New Observations and Experiments, in order to an Experimental History of Cold; together with some Thermometrical Discourses and Experiments. A Relation of a very odd Monstrous Calf. Of a peculiar Lead-Ore in Germany, very useful for Essays. Of an Hungarian Bolus, of the same effect with the Bolus Armenus. Of the New American Whale-fishing about the Bermudas. A Narrative concerning the success of the Pendulum-watches at Sea for the Longitudes; and the Grant of a Patent thereupon. A Catalogue of the Philosophical Books published by Monsieur de Fermat, Counsellour at Tholouse, lately dead.

Numb. 364.

Beginning the Thirty first Volume.

PHILOSOPHICAL TRANSACTIONS.

For the Months of *January, Feb. March and April. 1720.*

The CONTENTS.

- I. *Some Remarks on a late Essay of Mr. Cassini, wherein he proposes to find, by Observation, the Parallax and Magnitude of Sirius. By Edmund Halley, L. L. D. Astron. Reg. Geom. Prof. Savil. & R. S. S.*
- II. *An Account of the External Maxillar, and other Salivary Glands: Also of the Insertions of all the Lymphatics (as well above as below the Subclavians) into the Veins; which Glands and Insertions have not hitherto been mentioned, or not truly described by any Authors. By Richard Hale, M. D. Reg. Soc. & Col. Med. Lond. Soc.*
- III. *De Peste Constantinopoli grassante. Auctore nupero V. Cl. Emanuele Timone, M. D. Hoc scriptum ab Auctore Clarissimo, qui Constantinopoli per multos annos Medicinam fecerat, Excellentissimo Ablegato Britanico, Roberto Sutton, Eq. Aurato, traditum, ejusdem Equitis permisso, cum Societate Regia communicavit idem R. Hale, M. D.*
- IV. *An Account of a Luminous Appearance in the Air, seen at Dublin on January the 12th, 17th. By Philip Percival, Esq; Brother to the Right Honourable the Lord Percival, F. R. S. and communicated by his Lordship to the Royal Society.*

V. Of

- V. *Of the Infinity of the Sphere of Fix'd Stars. By Edmund Halley, L. L. D. R. S. S.*
- VI. *Of the Number, Order, and Light of the Fix'd Stars. By the same.*
- VII. *An Account of the Method of making Sugar from the Juice of the Maple Tree, in New England. By the Honourable Paul Dudley, Esq; F. R. S. Communicated by John Chamberlayne, Esq.*
- VIII. *A Copy of an Affidavit made in Scotland, concerning a Boy's living a considerable time without Food. Communicated by Patrick Blair, M. D. F. R. S.*
- IX. *A Discourse concerning a Method of discovering the Virtues of Plants by their External Structure. By the Same.*
- X. *An Account of a Book, Entituled, Geometria Organica, sive Descriptio Linearum Curvarum Universalis. Auctore Colino Mac Laurin, Matheseos in Collegio Novo Abredonensi Professore, & R. S. S.*

exclusivity

EXPERIMENTS

IN

CONSORT

OF THE

LUCTATION

ARISING

From the Affusion of several

MENSTRUUM

Upon all sorts of Bodies.

To which is added

The Nature, Causes, and Power
of Mixture.

Exhibited to the Royal Society

By *NEHEMIAH GREW*, M.
and Fellow of the *Royal Society*.

L O N D O N,

Printed for *John Martyn*, Printer to
Royal Society, at the *Bell* in *S. Pauls*
Church-yard. 1678.

New EXPERIMENTS,

And Usefull

OBSERVATIONS

CONCERNING

Sea-Weeds

MADE

F R E S H

According to the

Patentees Invention

In a Discourse Humbly De-
dicated to His Majesty the K
of Great-Britain, &c.

By a Fellow of the Colledge of
Physicians, and of the Royal-

Printed Anno Dom. 1681

"Elixirs, Tincture, the Anodine Fetus, English
Pills, Electuaries, and in short, more
remedies than I believe there are diseases."

battling books

A N
EXAMINATION

O F

Mr. John Colbatch

H I S

BOOKS, viz.

- I. *Novum Lumen Chirurgicum.*
- II. *Essay of Alkalies and Acids.*
- III. *An Appendix to that Essay.*
- IV. *A Treatise of the Gout.*
- V. *The Doctrine of Acids further Asserted,*
&c.
- VI. *A Relation of a Person Bitten by a Viper,*
&c.

To which is added,

An Answer to Dr. Leigh's Remarks on a Treatise
concerning the Heart of the Blood.

Together with

Remarks on Dr. Leigh's Book intituled *Exerci-*
tationes Quing; Printed at a private Press in Oxford
without the License of the University.

AS ALSO

A short View of Dr. Leighs Reply to Mr. Colbatch, &c.

By *RICHARD BOULTON*, of
Brazen-Nose College in *OXFORD*.

L O N D O N,

Printed for *Tbo. Bennet*, at the *Half-Moon*
in *St. Pauls Church-yard* 1699.

A Compleat *Positive*

TREATISE

O F

URINES,

Shewing the right Method of

Urinal Prognostication,

Far different

From the Common Practice

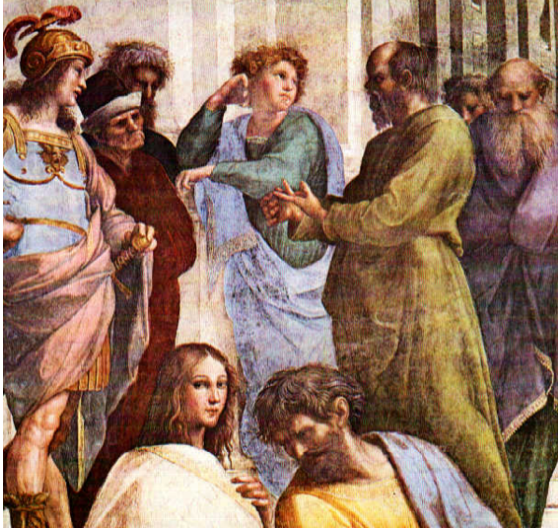
OF

Quacks and Mountebanks.

By *T. H. ^{ICKS} Pharmacop. Rustican.*

Pro Captu Lectoris habent sua fata libelli.

going closed?

A detail from Plato's Academy, showing Socrates and his students in a discussion. Socrates is in the center, gesturing with his hand, surrounded by other figures in classical attire.

Let us consider the matter in this way: If the wise man or any other man wants to distinguish the true physician from the false, how will he proceed?

.... He will consider whether what [the physician] says is true, and whether what he does is right, in relation to health and disease?

... But can any one attain the knowledge of either unless he have a knowledge of medicine?

... No one at all, it would seem, except the physician can have this knowledge; and therefore not the wise man; he would have to be a physician as well as a wise man.

--Plato, *Charmides*

"experience ...
tells us, that
greater things
are produc'd, by
the free way,
than the formal"

--Sprat

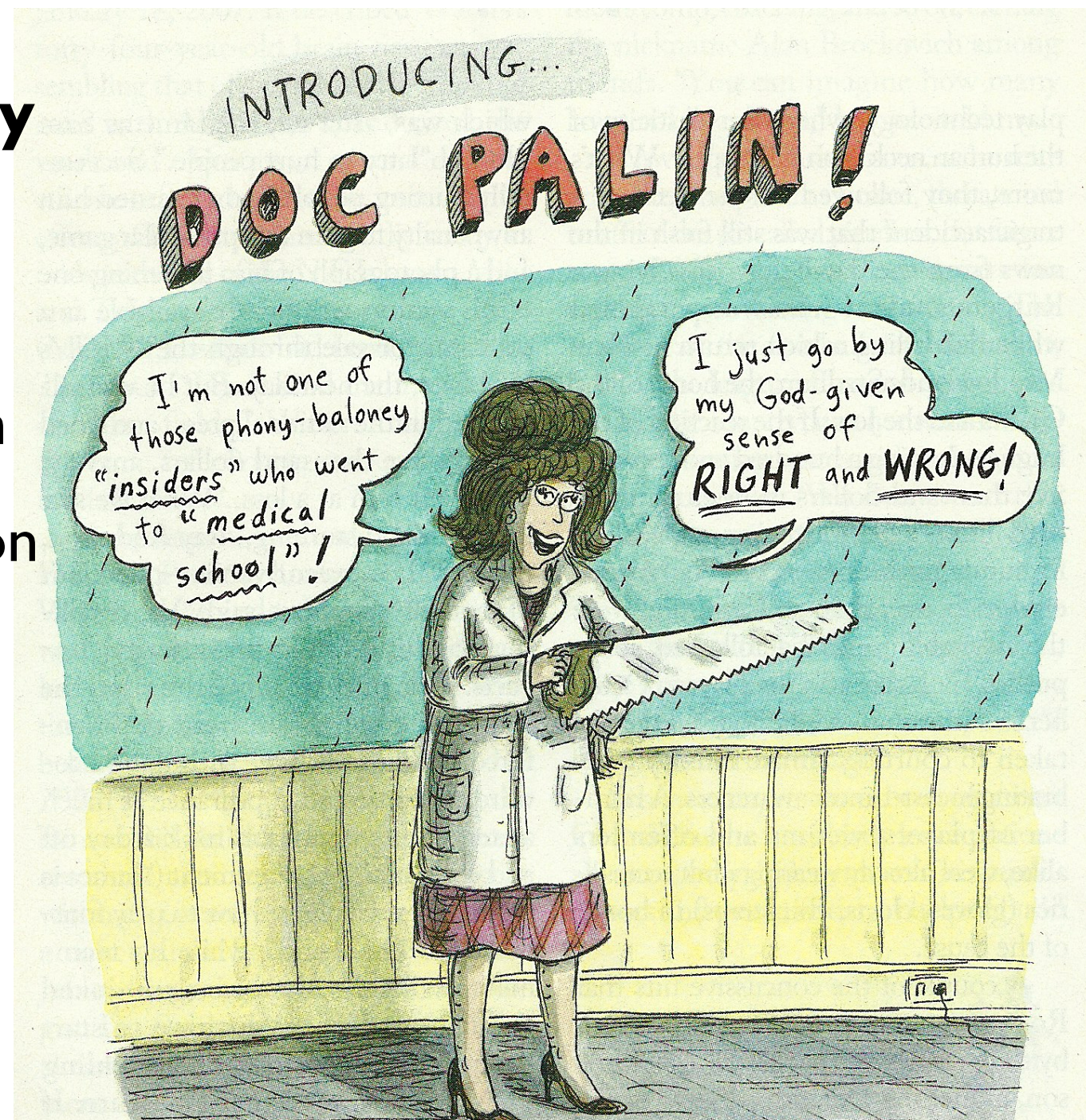
US 19th Century

dismantling medical
societies

resisting vaccination

opposing controls on
food and drugs

open again



a revolution?

"Men did generally think, that no man was fit to meddle in matters of this consequence, but he that had bred himself up in a long course of Discipline for that purpose; that had the habit, the gesture, the look of a Philosopher. Whereas experience on the contrary tells us, **that greater things are produc'd, by the free way, than the formal.**"

–Sprat

nature

International weekly journal of science

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[News & Comment](#) > [News](#) > [2013](#) > [January](#) > [Article](#)

NATURE | NEWS

Mathematicians aim to take publishers out of publishing

Episciences Project to launch series of community-run, open-access journals.

[Richard Van Noorden](#)

7 January 2013 | Corrected: 17 January 2013

revolution?

that no man was
of this
had bred himself

purpose
the lo
exper
great
way,

The Economist

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Reforming America's legal education

The two-year itch

Could law schools be ready to change their ways?

Feb 2nd 2013 | NEW YORK | From the print edition

[f Like](#) 335 [t Tweet](#) 68

up ahead

19 Feb: Emergence of the Public Sphere

Required Readings

- [Addison, Joseph] (“Uses of the Spectator”), *The Spectator*, No. 10, Tuesday, March 13, 1710-11.
- [Steele, Richard.] *The Spectator* No. 49,, Thursday, April 26, 1711.
- [Addison, Joseph] (“The Political Upholsterer”), *The Tatler*, No. 155, Thursday, April 6, 1710
- Darnton, Robert. 2000. “An Early Information Society: News and the Media in Eighteenth-Century Paris.” *American Historical Review* 105.1.

assignment

Darnton shows us how news travelled in eighteenth century Paris. With his example of the multiple channels, sources, and media in mind, compare how a particular item of news travels in your world with how it seems to have travelled in the café society you read about in the four articles from the *Spectator* and *Tatler*.