

C. Djerassi "Calculus" (Version 8 for London Production)
17 July 2004

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CALCULUS

(A play in 2 acts)

by Carl Djerassi

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Program Note

Virtually every survey of the public's choice for the most important persons of the second millennium includes the name of Isaac Newton. A poll published in the 12 September 1999 issue of the London *Sunday Times Magazine* ranked him first, even above Shakespeare, Leonardo da Vinci, Charles Darwin and similar canonized stars. Among his crowning achievements were his research starting around 1670 on light and color (eventually published in 1704 in his book *Opticks*), but he is best known for his enunciation of the laws of motion and of gravitation and their application to celestial mechanics as summarized in one of the greatest tomes in science, the *Philosophiae naturalis principia mathematica*, usually shortened to PRINCIPIA-the first version of which was published in 1687.

Putting physics on a firm experimental and mathematical foundation-an approach coined Newtonism-earned Newton the ultimate accolade as father of modern scientific thought. However, a revisionist historical analysis, based in part on the discovery by the economist John Maynard Keynes of a huge trove of unpublished papers and documents, has led some scholars to consider Newton the last great mystic rather than first modern scientist. While his work in physics and mathematics set in motion the Age of Enlightenment, revisionist historians point out that neither as a person nor an intellect did he belong to it. As debunking of some of the hagiography surrounding Newton commenced in the latter part of the 20th century, it became evident that Newton spent much more time on alchemy and mystical theology than on "science"-composing over 1 million words on each of these two endeavors, much more than all his writings on physics combined! His alchemical library was huge and his alchemical experiments, though kept secret from all but a few intimates and servants, consumed much of his waking hours for decades. Even his religious convictions had to be kept secret, because his faith in Arianism (holding that Christ and God are not of one substance) was considered heretical within the Anglican Church.

Born on Christmas day in the year of Galileo's death, Newton was so convinced of his supernatural powers that he once constructed a virtual anagram of his name (*Isaacus Neutonus*) in terms of "God's holy one" (*Jeova sanctus unus*). His position as a fellow of Trinity College and Lucasian Professor of Mathematics at Cambridge (a chair now held by Stephen Hawking), his subsequent elevation to the important government rank of Master of the Mint, and conferment of a knighthood by Queen Anne all should have required open adherence to and even ordainment in the Anglican Church. Yet Newton managed to sidestep it throughout his adult life, with open defiance only surfacing in 1727 on his death at age 85 when he refused the last rites. Even that noncompliance did not prevent a state burial in Westminster Abbey nor the unveiling there in 1731 of a monument in just recognition of his towering contributions to science and of his services to England.

As a person, Newton was not only deeply complex, but also morally flawed. Adjectives that could be used to describe facets of his personality are remote, lonely, secretive, introverted, melancholic, humorless, puritanical, cruel, vindictive, and perhaps worst of all, unforgiving. Even one of the most famous quotes attributed to Newton, "*If I have seen further it is by standing on the shoulders of Giants*" is open to different readings. Often cited as a sign of his modesty, it has also been interpreted as the ultimate poisonous lacing in a disingenuously polite letter addressed to one of his bitterest

scientific foes, Robert Hooke, of pronounced dwarfish stature. It is worth noting that the origin of the sentence long antedates Newton since it can be traced to at least John of Salisbury in the 12th century.

The character trait most relevant to the present play "*Calculus*" is Newton's obsessively competitive nature. Frank E. Manuel wrote in 1968 in one of the great Newton biographies that "*the violence, acerbity, and uncontrolled passion of Newton's attacks, albeit directed into socially approved channels, are almost always out of proportion with the warranted facts and character of the situations.*" While this statement characterizes some of Newton's best-known bitter conflicts such as the ones with the physicist Robert Hooke or the Astronomer Royal, John Flamsteed, it applied in spades to the decades-long battle with a German contemporary of almost equal intellectual prowess, Gottfried Wilhelm von Leibniz.

In addition to his monumental contributions to physics summarized in his PRINCIPIA, Newton was also an inventor of the calculus (which he first called the "method of fluxions"). Up in Parnassus or down in his grave, he would immediately interject: "**A** inventor? Was I not **the** creator of the calculus—a bedrock of modern mathematics since it first revealed the relationship between speed and area?" Why would such a genius even ask such a question? Because Sir Isaac was also a fallible human being for whom priority—and especially priority about the calculus—counted above all else.

But priority can only be determined after a definition of the term has been agreed upon. No such unambiguous definition has been produced in science, where multiple independent discoveries occur all too frequently. For instance, in the play "*Oxygen*" (written jointly with Roald Hoffmann), we asked whether the ultimate accolade for the discovery of oxygen—an event that triggered the modern chemical revolution—should be assigned to the first discoverer, to the person who published first, or to the one who first understood the nature of the discovery. In the case of the calculus, it is now clear that Newton was first in terms of conception, but Leibniz first in terms of publication. But since in Newton's mind and words, "*second inventors have no right,*" resolution of that priority dispute required for him a fight to the death, like a gladiator in a Roman circus. But unlike the gladiators, Newton was a consummate master of using surrogates, continuing the struggle even after Leibniz's burial in 1716.

The calculus priority struggle—with each protagonist ultimately charging the other with piracy—has, in the words of William Broad, "*been fought for the most part by the throng of little squires that surrounded the two great knights.*" It is through the story of some of Newton's "little squires" that the play "*Calculus*" tries to examine one of Newton's greatest ethical lapses.

The stage was set by Nicolas Fatio de Duillier, a brilliant natural philosopher from a Geneva family, who became Newton's most fawning disciple. Indirect but reasonably persuasive evidence of a homosexual (though unconsummated) attraction between Newton and the 20-year younger Fatio has surfaced in recent years. At times called "the Ape of Newton," Fatio shot the first brutal salvo openly accusing Leibniz of plagiarism. Like Newton, Fatio never married; like Newton he indulged in alchemical experiments and religious fanaticism; but unlike his mentor he went way beyond him in that regard by openly associating with the Cevennes Prophets who spoke in tongues and became possessed during religious ecstasies. Fatio's accusation of Leibniz was not pursued, partly because of the former's religious excesses, but in 1708, another loyal follower of

Newton, John Keill (a Fellow of the Royal Society as well as "*a war-horse, whose ardor was so intense that Newton sometimes had to pull in the reins*"), formally repeated the charge of Leibniz's plagiarism—an accusation published in the *Philosophical Transactions* of the Royal Society in 1710. And when Leibniz, as a foreign member of the Royal Society, demanded an official retraction, Newton in his capacity of President created a commission of eleven Fellows of the Royal Society ("*a Numerous Committee of Gentlemen of several Nations*") to adjudicate the conflict. On April 24, 1712, a 51-page long report (partly in Latin and replete with references to private as well as published letters and documents primarily in the possession of Newton's correspondent John Collins) was released by the Royal Society under the title "*Commercium Epistolicum Collinii & aliorum*" ("exchange of letters from Collins and others") in which Keill's accusation was totally supported.

Such a blatantly biased procedure, though clearly to be condemned, was nevertheless to be expected, considering that Newton as President of the Royal Society had indirectly appointed the committee. But further scrutiny reveals much blacker details.

The composition of the Committee that never openly signed the document, did not become acknowledged for over 100 years. Not only do we now know the identity of the eleven Fellows, but even more importantly, their dates of appointment. The famous astronomer Edmond Halley, the physician and well-regarded literary figure John Arbuthnot, and the little-known William Burnet, Abraham Hill, John Machin and William Jones were all appointed on March 6, 1712. Francis Robartes (Earl of Radnor) was added on March 20, Louis Frederick Bonet (the King of Prussia's Resident in London) on March 27, and three more members, Francis Aston and the mathematicians Brook Taylor and Abraham de Moivre on April 17.

Why should these dates be significant? Because it is patently impossible that at least the last three members, appointed on April 17, could have had anything to do with a lengthy and complicated report read openly 7 days later! In point of fact, none of the eleven Fellows was authorially responsible, because Newton himself had written the report! And in spite of the claim that the Committee consisted of "*Gentlemen of several Nations,*" only two out of the eleven—Bonet and de Moivre—could be categorized as foreigners. In the case of Bonet, so little is known of him that even the Sackler Archive Resource of Fellows of the Royal Society does not contain his date and place of birth, although German and Swiss archives do shed some light on him. The question can rightfully be raised why such a diverse group of Royal Society Fellows, some of them of major distinction, should have allowed themselves to be so blatantly manipulated by Sir Isaac Newton—ostensibly to be chosen as watchdogs and then so quickly transformed into barkless showdogs.

Calculus provides some speculative insight into this scientific scandal through the personalities of John Arbuthnot and the two foreigners, Louis Frederick Bonet and Abraham de Moivre, with most of the biographical references firmly rooted in historical records. And while the particular meeting of the playwrights Colley Cibber and Sir John Vanbrugh in *Calculus* is invented, both are historical characters whose respective plays *Love's Last Shift* and *The Relapse: Or Virtue in Danger* and their final collaboration, *The Provok'd Husband*, are part of the proud canon of British Restoration drama.

(Time: 1712 - 1731, London-mostly Drury Lane Theatre, ante-room of Royal Society or a salon)

CAST IN ORDER OF APPEARANCE

Colley Cibber (1671 - 1757), playwright, actor, theatre manager, eventually (1730) poet laureate. Literary friend of Vanbrugh, literary enemy of Alexander Pope and John Arbuthnot. Author of "*Love's Last Shift*" (1696) and other plays. Completed Vanbrugh's "*The Provok'd Husband*" in 1728.

Sir John Vanbrugh (1664 -1726), playwright, architect (of Castle Howard and Blenheim Palace), advisor to George I. Author of "*The Relapse: Or Virtue in Danger*" (1696), a highly successful sequel to Cibber's "*Love's Last Shift*," as well as other plays. One of the first directors of the Royal Academy of Music.

Gottfried Wilhelm Leibniz (1646 - 1716), Leibzig-born, one of Germany's greatest polymaths. Promoted scientific academies including the Brandenburg Society of Sciences ("Berlin Academy") in 1700, appointed its life president. Trained in law and philosophy, self-taught mathematical genius, eventually invented (independently of, though later than Newton) and published first (prior to Newton) the calculus with notations used to this day, also interested in a mechanical calculating machine. In 1710 published "*Théodicée*," rationalizing the existence of evil in a world created by a good God. Universal letter writer (in French, German and Latin) with more than 1100 correspondents. Mostly in service of the court of Hanover, he never held formal academic teaching positions. Elected FRS 1673; French Academy of Sciences, 1701. Died in Hanover in 1716.

To be played by same actor as Colley Cibber with German accent

Sir Isaac Newton (1642 - 1727). England's greatest mathematician and natural philosopher, also immersed for decades in alchemy and heretical theology. Enunciated the laws of motion and gravitation and their application to celestial mechanics. Made fundamental contributions to light and color as well as inventing a form of the calculus (termed by him "Method of Fluxions"). Author of two of the most important books in science: the *Philosophiæ naturalis principia mathematica* ("*Principia*") and *Opticks*. FRS 1672, President of Royal Society (1703 - 1727), 1669 elected Lucasian Professor of Mathematics at Cambridge University, appointed 1699 Master of the Royal Mint and knighted in 1705 by Queen Anne. Notorious for ferocious struggles with scientists (e.g. Robert Hooke and John Flamsteed), but none fiercer and longer than the one with Leibniz. Buried in Westminster Abbey where his monument was unveiled in 1731.

To be played by same actor as Sir John Vanbrugh

Margaret Arbuthnot (? - 1730), wife of John Arbuthnot, mother of 6 children.
(*Speaks with perceptible Scottish accent*).

Louis Frederick Bonet (1670-1762), citizen of Geneva, Minister of King of Prussia in London (1696-1719), then "syndic" and senator in Geneva. Trained in medicine and law, proselytizing Protestant. FRS 1711, Berlin Academy 1713. Member of anonymous Royal Society Commission of 1712.

(Speaks with perceptible French accent).

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Abraham de Moivre (1667-1754), French-born and French educated mathematician, spent his adult life since 1687 in England. FRS 1697.

[Member of anonymous Royal Society Commission of 1712].

(Speaks with distinct French accent)

John Arbuthnot (1667-1735), Scottish-born and Scottish educated, physician to Queen Anne, some mathematical (statistical) knowledge, wit and satirical writer, friend of Pope, Swift, John Gay and Thomas Parnell (founding member of Scriblerus Club in 1714).

Author of the political allegory "History of John Bull" describing the prototypical Englishman. FRS 1704. [Member of anonymous Royal Society Commission of 1712].

(Speaks with perceptible Scottish accent).

Lady Brasenose, a London salonnière. *(Speaks with distinct upper-class English accent).*

A maid, in home of Dr. and Mrs. Arbuthnot.

Polly, an ingénue at Drury Lane.

A dresser, at Drury Lane.

Remaining members of anonymous Royal Society Commission of 1712

(Silent actors or dressed mannequins in Scene 3)

Francis Aston (1645-1715), friend of Newton, students together, and elected together as Fellows of Trinity College, Cambridge.

William Burnet (1688–1729), subsequently Governor of New York and New Jersey (1720), then of Massachusetts (1728) and New Hampshire (1729).

Edmond Halley (1656-1742). "But for Halley, Newton's PRINCIPIA would not have existed.... He paid for all expenses, he corrected the proofs, he laid aside his own work in order to press forward to the utmost the printing. All his letters show the most intense devotion to the work."

Abraham Hill (1633–1721) Founder Fellow of R. S., later successively treasurer, secretary, and vice president; friend of Edmond Halley.

William Jones (1675-1749), son of Welsh farmers, appointed to R.S. in 1712 just before the Committee met. Not an important mathematician, but he introduced the symbol pi in its enduring meaning and in 1711 published Newton's "*De analysi*"--one of the early shots in the priority battle with Leibniz.

John Machin (1680-1751), elected to R.S. in 1710, in 1711 became Prof. of Astronomy at Gresham College on Newton's recommendation. Newton described him as the man who "understood the PRINCIPIA better than anyone."

Francis Robartes, Earl of Radnor, (1650-1718), MP (1673-1718) also Commissioner of Revenue for Ireland (1710-1714), moved in social circles with Newton.

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Brook Taylor (1685-1731) elected to R.S in 1712, educated at Cambridge. He had not published anything at the time (1712) of his election to the R.S. and his appointment to the committee was "a sure sign of favor" by Newton. One of the more voracious English mathematicians in the ongoing dispute with the continent.

Scene 1. *London, 1725. Colley Cibber and Sir John Vanbrugh meet in Cibber's office cum storeroom at the top of Drury Lane Theatre. Cibber has just come off-stage and is removing his costume as Sir John enters.*

VANBRUGH: Colley Cibber!

CIBBER: Sir John, I am your humble servant.

VANBRUGH: Why not just "John?" That's what you used to call me.

CIBBER (*Laughs*): And you used to call me "Colley."

VANBRUGH: And Colley it shall be. But has nothing changed... other than a quarter of a century?

CIBBER: Then you wrote a play that still graces our stage from time to time.

VANBRUGH: It pleases me that you still recall *The Relapse*.

CIBBER: Your greatest triumph!

VANBURGH: It is my very favorite, yet our precious critics condemned it for its "blatantly fleshy treatment of sex."

CIBBER: Ah... critics!

VANBURGH: It would never have been written had I not seen the year before the public's lust to see your *Love's Last Shift*. "Giants in wickedness" they called us both!

CIBBER: Tossspots!

VANBRUGH: And accused me of "debauching the stage beyond the looseness of all former times."

CIBBER: After all these years - it still rankles?

VANBRUGH: Some insults continue to fester. But I will have my revenge on those who aspire to cleanse our theatre in their holier-than-thou image. Those pygmies of piety, attempting to destroy my reputation! Wishing to drive my plays from the English stage! Frothing with indignation in their tracts and pamphlets! Anointing themselves a "Society for the Restoration of Manners"!... I'll teach them manners!

CIBBER: From an architect of plays you have become an architect of palaces.

VANBRUGH: A sin?

CIBBER: Not at all! But their scale! First, Castle Howard, then Blenheim-

VANBRUGH: Blenheim Palace demanded it. A fitting tribute to the Duke of Marlborough's victory.

CIBBER: Indeed, indeed... the biggest palace ever built... and garnered you your knighthood. But after all those years, revenging yourself on your critics? John, I advise you to forget ... if not forgive...

(Sir John falls silent)

CIBBER: I see. *(beat)*. You require revenge to lance the boil.

VANBRUGH: It's an efficient method.

CIBBER: Depending on the choice of instrument. And what, may I ask, is yours?

VANBRUGH: Writing a play, of course. A scandalous play.

CIBBER: And thus opening yourself to renewed charges of moral deviation?

VANBRUGH: I started as a playwright... I was insulted as a playwright... I wish to end as a playwright... and revenge myself as one.

CIBBER: Through a scandalous play?

VANBRUGH: Yes... but without sex!

CIBBER: A scandal... without sex?

(Vanbrugh nods)

CIBBER: A dalliance or two, perhaps?

VANBRUGH: No dalliances!

CIBBER: How then can it be scandalous?

VANBRUGH: Must sex and scandal always be coupled?

CIBBER: It helps... especially on stage.

VANBRUGH: Colley, I will show that real scandal is of the mind.

CIBBER: That intrigues me, John. And now you seek my advice?

VANBRUGH: That... and your assistance. You're not just an actor... you also excel as theatre manager and playwright... one day you might even become poet laureate—

CIBBER: Enough! You flatter me... what do you require of me?

VANBRUGH: You've never held it against me to have built my play, "*The Relapse*," on your success.

CIBBER: The theatre is large enough for both of us.

VANBRUGH: Well put, Colley... and thus a further argument for my proposal. Collaboration... even by those, presumed to be competitors, has its merits... a lesson I shall teach through revenge.

CIBBER: But revenge on stage must also divert through a worthy plot.

VANBRUGH: The plot already exists... in real life.

CIBBER: A play of revenge based on real life? Take heed, John! I almost see the critics' sneers. (*Pause*). And scandal is your play's theme?

VANBRUGH: It is corruption among the mighty...

CIBBER (*Disappointed*): Hardly a novel theme. Take Shakespeare's histories.

VANBRUGH: My dear Colley! I am referring to the mighty of the mind... not of the realm.

CIBBER: Are its protagonists still alive?

VANBRUGH: All of them!

CIBBER: Ah! That warrants care as well as subtlety.

VANBRUGH: Subtlety takes time... a precious commodity... especially at my age. I'm sixty-one, Colley! Many consider me old.

CIBBER: Nonsense, John. (*Grins*) Though I must admit I was surprised... some while ago... to learn that you had suddenly decided... in your maturity... upon an exploration of marital bliss—

VANBRUGH: How old were you when you succumbed to that temptation?

CIBBER: Promise not to tell. (*Simulates whisper*) Not yet twenty-two!

VANBRUGH: (*Shocked.*) How rash!

CIBBER: It was an act of love... but also of madness, bearing in mind that my income hardly sufficed for one.

VANBRUGH: Perhaps I'm more cautious. I was fifty-five when I proposed to Henrietta.

CIBBER: Lady Henrietta is a handsome woman... (*beat*) and young...

VANBRUGH: In form as well as in figure. (*Pause*) Though not as young as yours.

CIBBER: A wise decision on your part.

VANBRUGH: How so?

CIBBER: My Catherine was overburdened by fertility. For every child she bore, I had to write a play to support it.

VANBRUGH: Good God! Have you not written at least a dozen plays?

CIBBER: Twenty-five... to be precise...

VANBRUGH: (*Startled*) She bore you twenty-five children?

CIBBER: (*Laughing*) Only eleven... but these in such rapid succession that I decided upon... withdrawal. (*Pause*) But enough of me... and of my plays. We meet here to talk of *yours*. (*Pause*). If I may, John, a delicate question: this scandalous play will bear your name? (*Pause*). You are a celebrated playwright... people will recognize your voice.

VANBRUGH: Indeed so! But I shall conceal my voice by merging it with yours.

CIBBER: Oh... When do you wish to start?

VANBRUGH: Now. *(He produces a script)*

CIBBER: This moment?

VANBRUGH: I have your attention... so why not make use of it?

CIBBER: Your servant, Sir John. *(Cibber takes the script from him and begins to read):* "Calculus?" *(Raising an eyebrow).*

VANBRUGH *(Quickly):* A comedy!

CIBBER: Good... even if it should not prove true. *(Brief pause).* "By Sir John Vanbrugh?"

(A moment of embarrassed acknowledgement between them)

VANBRUGH: Of course, that can change—

CIBBER: I am relieved.

(Cibber flips through the pages)

Ah! "Sir Isaac Newton?" Well!

VANBRUGH: Read on.

(Cibber reads on. As he reads, muttering bits of the opening scenes of the play to himself, he begins to look impatient. He skims ahead a couple of pages, looking for something. Sighs)

VANBRUGH: And?

CIBBER: It's promising, so far.

VANBRUGH: I hear a "but" lurking about.

CIBBER: But I gather it is a disclosure of a scandal involving Sir Isaac Newton.

VANBRUGH: Indeed.

CIBBER: So...where is Sir Isaac? Where is the protagonist? I wish to see him! Not the minions who circle around him like moths attracted to a candle—

VANBRUGH: Who all get burned! Precisely what I wish to show. We have eleven minions tainted by this scandal, and all of them Fellows of the Royal Society—

CIBBER: John, you cannot have all eleven in your play. The expense!

VANBRUGH: I have thought of that. I shall use but three principals, and the rest will be supernumeraries.

CIBBER: John! I trust you will not take this amiss, but if the scandal deals with a dispute between Newton and this German fellow... what's his name?... Leibniz... they must appear in your play. You cannot rest your case on surrogates! Without Newton, there is no play. At the very least, insert a scene for him before proceeding any further.

VANBRUGH: Suspecting you would say that, I came prepared.

(He produces a scene from his pocket)

CIBBER: What is this?

VANBRUGH: A scene between Newton and Leibniz.

(Cibber reads some of it)

CIBBER: Excellent! Let us read it now, together. I'll play the German and you Newton.

VANBURGH: No, no, no. I couldn't...

CIBBER: Oh go on, try... I beg you.

VANBURGH: Oh very well, if you insist.

(Cibber holds the play text in his hands and pretends to read Leibniz's lines. Cibber uses a German accent while playing the role of Leibniz. Vanbrugh plays Newton, and already knows his lines since he wrote them.)

LEIBNIZ: So finally we meet Mr. Newton. *(As Cibber)* John, that opening line needs more work. Anyway, carry on.

NEWTON: There is nothing that I desire to avoid in matters of Philosophy more than contention, nor any kind of contention more than one in print.

LEIBNIZ: Yet your accusation of plagiarism was made in print!

NEWTON: I wrote no such accusation.

LEIBNIZ (*Sarcastically*): I stand corrected. You caused one of your sycophants to do it.

NEWTON: A distinguished Fellow of the Royal Society...

LEIBNIZ: Distinguished? Bah! By turning into your sycophant, he loses all distinction.

NEWTON: How dare you?

LEIBNIZ: How dare you? You fabricate the suspicion that I won fame by devious practices. No fair-minded or sensible person will think it right that I, at my age, and with such a full testimony of life, should appear like a suitor before a court of law (*Increasingly louder*). I, Gottfried Wilhelm Leibniz, whose invention contains the application of all reason... a judgment in each controversy...an analysis of all notions... a valuation of probability... a compass for navigating over the ocean of our experiences... an inventory of all things... a table of all thoughts... a general possibility to calculate everything. (*Takes audible deep breath, then, as Cibber*). John, this is too obscure...

VANBRUGH: All German philosophers are obscure. And some also obtuse.

CIBBER: Nevertheless, the public, the critics, John! A re-write perhaps?

VANBRUGH: Please continue!

CIBBER: Very well (*He continues as Leibniz*). When I published the elements of my calculus in 1684, there was assuredly nothing known to me of your discoveries in this area, beyond what you had formerly signified to me by letter.... But as soon as I saw your PRINCIPIA, I perceived that you had gone much further. However, I did not know until recently that you practiced a calculus so similar to my differential calculus. Of course you chose another name (*hisses it with emphasis on final "s"*): "fluxions."

NEWTON (*Aside, furious whisper*): That viper in my brain... that Leibniz... not content with deriding my invention of the fluxions, now presents himself to the world as inventor of the (*hisses it with emphasis on final "s"*) "calculus!" (*Louder with faked calm*). I had no hand in beginning this controversy.

LEIBNIZ: Ha!

NEWTON: Mr. Leibniz! In a letter exchanged between myself and you ten years ago, I indicated that I possessed a method of determining maxima and minima...

LEIBNIZ: What of that?

NEWTON: In that same letter, I also wrote down the method.

LEIBNIZ: Your memory is at fault, Sir Isaac.

NEWTON: No, I wrote down the method. And at the same time concealed it.

LEIBNIZ: Wrote down... yet concealed? How?

NEWTON: In transposed letters-which, when correctly arranged-express this sentence (*slow and forceful tone*): "Given any equation involving fluent quantities, to find the fluxions, and vice-versa."

LEIBNIZ (Sardonic): Ha... ha! "Given any equation involving fluent quantities, to find the fluxions, and vice-versa." (*Extremely fast and sarcastic*) Five A's, two C's, one D, seven E's, three F's, one G, nine I's, three L's... no less than ten N's!... four O's, two Q's, one R, three S's, six T's, four U's, five V's and then one X and one Y... If all knowledge were transmitted in 70 transposed letters where would mathematics or natural philosophy stand now? Are anagrams in science honest? Or are they just a joke? (*Pause*). As I find no H... as in "honesty" or "humor"... nor a J... as in "joke" in your anagrammatic alphabet, neither honesty nor humor could have been the motivation. (*Sardonic laughter*). Indeed, as there is no letter M, even mathematics is precluded!

NEWTON: How dare you?

LEIBNIZ: Did you not write in 1676: "Leibniz's method of obtaining convergent series is certainly extremely elegant, and would sufficiently display the writer's genius even if he should write nothing else." (*Pause*). Well, Mr. Newton?

NEWTON: One my greatest lapses of judgment.

LEIBNIZ: Mr Newton. Are you accusing me of poaching... of trespassing... on English turf? Of stealing?

NEWTON: Call it what you wish! I was the first to bite into this apple... and expected to eat it at my leisure.

LEIBNIZ: An apple already bitten... especially an English one... does not attract me. Need I remind you that when you finally chose to launch your "method of fluxions" in print... years after I had published... few people equated it with my "infinitesimal calculus." Your terminology was a jargon of flowing points and lines... your so-called "fluents." And their rate of change... you called "fluxions." Your adding or subtracting dots over letters to represent (*derisive*) "fluxions of

fluxions or fluents of fluents" is the clumsiest of clumsy notations (*Forcefully*). Mine was algebraical; my language fresh and clear using the words "differential"... "integral"... and "function." I do not find these in your writings!

NEWTON: My question is who discovered the method first. Priority is exclusive. It is an absolute, quantifiable fact.

LEIBNIZ: Quantifiable?

NEWTON: One man is first! Be it by years, weeks, hours or even minutes.

LEIBNIZ (*Sarcastic*): Is that not carrying mathematics too far?

(Cibber exits the scene as it were, observes last speech of Newton).

NEWTON: You will rue the day when you issued this challenge, Mr. Leibniz! Whether you found the Method of Fluxions... (*disdainful*) your calculus... by yourself is not the question. I shall appoint a Committee of the Royal Society to deal only with the question who was the first inventor. And I shall see that they do not stray from that narrow path! (*Pause*). The Committee will treat Leibniz as second inventor, because (*slow and loud*) second inventors have no rights! None! (*Turns abruptly and walks toward Cibber*).

(Vanbrugh comes out of character, as it were)

CIBBER: You are a born actor!

VANBRUGH: Thank you.

CIBBER: In God's name, why is this scene omitted from the play?

VANBRUGH: Well, I'm of mixed mind.

CIBBER: No. We must use it!

VANBRUGH: We shall see.

CIBBER: What the plague is the matter with it? (*Beat*) Are you perhaps afraid?

VANBRUGH: Of Sir Isaac? No. Nor do I have a surfeit of respect for the man.

CIBBER: Then what?

VANBRUGH: Only that the true scandal happened behind the scenes.

C. Djerassi "Calculus" (Version 8 for London Production)
17 July 2004

CIBBER: Hm. Very well then. So you say now. But let me see how you say it here (*shaking the script in his hands*).

(He carries on reading the script AS THE LIGHTS DIM).

END OF SCENE 1

Scene 2. *Cibber (reading the stage directions): "London, 1712... so that's thirteen years ago... a reception room at the home of Dr. John Arbuthnot. The Maid enters. Mrs. Arbuthnot sits in a chair, a tea service on a table by her side."*

MAID: Ma'am... Mr. Bonet has arrived.

MRS. ARBUTHNOT (*Throughout with Scottish accent*): Show him in.

BONET: Dr. Arbu... (*catches himself*)...Oh!

MRS. ARBUTHNOT (*As she rises from her chair to greet him*): Mr. Bonet.

BONET: Mrs. Arbuthnot, your servant.

MRS ARBUTHNOT: What a pleasure to make your acquaintance. We both frequent Lady Brasenose's salon—

BONET: Yet have never chanced to meet.

(He kisses her hand)

MRS. ARBUTHNOT: Please, be seated.

(She sits down, while Bonet remains standing.)

BONET (*Throughout with French accent*): You are most gracious for receiving me on such short notice.

MRS. ARBUTHNOT: Not at all. Our very great pleasure. (*A polite pause*). Will you not sit down?

BONET: Much obliged, but... with the greatest of respect... I have urgent business to attend to this morning... a brief conversation with your husband—

MRS. ARBUTHNOT: I apologize on his behalf, but he is not available. I hope I may be able to entertain you in his absence.

BONET (*Disappointed*): You are most kind. (*beat*) When will he return?

MRS. ARBUTHNOT: Return? (*beat*) He is upstairs... indisposed.

BONET: Oh. (*beat*). I trust he will recover soon.

MRS. ARBUTHNOT: My husband is upstairs... in his study... not in ill health, but ill-tempered in disposition.

BONET (*Aggrieved tone*): Oh? I take it then he does not wish to speak to me?

MRS ARBUTHNOT: Dr Arbuthnot refuses to speak to any member of the Committee...

BONET: Oh.

MRS ARBUTHNOT:... on the grounds it may prejudice any decision taken by the Committee...

BONET: Oh?

MRS ARBUTHNOT: Thus I dare not mention to him that you are here.

BONET: I see. I assume he has told you nothing of the Committee's concerns.

MRS. ARBUTHNOT: Not about its concerns.

BONET: Perhaps it would be better if I took my leave.

MRS ARBUTHNOT: I trust his behavior has caused you no offence. Dr. Arbuthnot places his principles above all else, including manners I'm afraid to say.

BONET: No apology is required. If I seem disappointed, it is because I had hoped... well, no matter. Good day, Mrs. Arbuthnot.

MRS ARBUTHNOT: Perhaps I may be able to dispel some of your concerns.

BONET: I'm afraid not. The Committee was convened to adjudicate a very delicate matter—

MRS. ARBUTHNOT: Delicacy is a subjective notion... What is delicate to one may be tedious to another, as my husband is so fond of saying. But since he's not just a physician and savant... but also a writer on human foibles... I always take to heart such remarks.

BONET: A wise decision... to accept your husband's perspicuity.

MRS. ARBUTHNOT: I said "take them to heart," Mr Bonet. I did not say I always accept them. But you called your Committee's purpose "delicate"—

BONET (*Forceful*): I consider it exceedingly delicate.

MRS. ARBUTHNOT: I shall not contradict you.

BONET (*It looks as though Bonet is about to leave. Then he realizes something.*): You are quite sure your husband did not mention anything to you of the Committee's brief? A matter not even disclosed to all Fellows of the Royal Society?

MRS. ARBUTHNOT: Of the Committee's brief? Yes, that he did. (*Pause*). But you spoke of concerns... not of a brief.

BONET: I trust you do not take this question amiss: but why would your husband discuss with you delicate (*catches himself*)... or... if you please... confidential tasks of our Committee?

MRS. ARBUTHNOT: Because I am his wife!

BONET: Yes... but—

MRS. ARBUTHNOT: You do not take your wife into your confidence?

BONET: I have no wife... yet.

MRS. ARBUTHNOT: But if you had one?

BONET: I would not talk about such matters.

MRS. ARBUTHNOT: Yet with my husband... a near stranger... you are prepared to exchange questions that you would keep from your wife? Why? Because you trust my husband?

BONET: I have no reason not to trust him.

MRS. ARBUTHNOT: Yet you'd distrust a wife? (*Pause*). Since you have none yet, I would advise you to choose prudently... as did my husband. (*Pause*). But I'm being carried away. I should have offered some refreshment... would you take some tea?

BONET: I would prefer to continue with our conversation... though perhaps in a slightly different direction.

MRS. ARBUTHNOT: I would be pleased to oblige.

BONET: May I ask a question that I had intended solely for your husband's ears?

MRS. ARBUTHNOT: Well, yes... if you consider it appropriate.

BONET: Do you know if all members of the Committee are equally well informed about its purpose?

MRS. ARBUTHNOT: I assume... on good authority... that this is not the case. But you, Mr. Bonet... a diplomat? Surely, you are informed.

BONET: Diplomats always desire more information than is offered.

MRS ARBUTHNOT: I suspect I violate no confidence by saying that the point at issue solely involves Sir Isaac Newton... or rather, his work on fluxions.

BONET: You are referring to the accusation against Mr. Leibniz?

MRS. ARBUTHNOT: Indeed. But there is more to it than just priority. Consider that quite difficult mathematics... fluxions and calculus... is at stake here... and especially the question who invented what first. Yet nearly half the members of your Committee are not even mathematicians: Abraham Hill... William Burnet... the Earl of Radnor... Francis Aston... (*Pause*)... and you, the King of Prussia's Minister to London.

BONET: What about your husband? He is Queen Anne's physician...

MRS. ARBUTHNOT: The best she ever had.

BONET: He is prominent in literary circles-

MRS. ARBUTHNOT: And now collaborating with John Gay and Alexander Pope in a play...

BONET: That I did not know.

MRS. ARBUTHNOT: It's called "Three Hours after Marriage."

BONET: An ambiguous title.

MRS. ARBUTHNOT: Depending on one's view. It's meant to be a comedy.

BONET (*Astonished*): Physician and man of letters I can understand. But playwright of comedies?

MRS. ARBUTHNOT: One comedy... and (*aside*) his last, I pray.

BONET: And is mathematics another of his talents?

MRS. ARBUTHNOT: Indeed. Just consider his essay "On the Usefulness of Mathematical Learning."

BONET: I see. (*Pause*). But now my question: Has he received as yet the evidence we're asked to weigh... the evidence behind the accusation? Against Mr Leibniz. I've received nothing.

MRS. ARBUTHNOT: You are not alone, Mr Bonet.

BONET: But there are exceptions?

MRS. ARBUTHNOT: Perhaps. (*Quickly backtracks*). But that is only intuition... a woman's intuition and hence of little value.

BONET: I shall, of course, not ask about your husband, but could you venture a guess?

MRS. ARBUTHNOT: Mr. Moivre may be one...

BONET (*Angrily*): Who was appointed last!

MRS. ARBUTHNOT: Time of appointment may not relate to position of rank within the Committee.

BONET: I fail to comprehend—

MRS. ARBUTHNOT (*Interrupts*): I suspect that comprehension will dawn tomorrow when your Committee will search for light... an endeavor in which Sir Isaac is pre-eminent. But your deliberations will focus on the moon reflecting light from the sun. I wonder how many of you will notice that all heat is missing.

BONET: I'm afraid I do not follow you, madam.

MRS. ARBUTHNOT: Eventually you will, Mr. Bonet. But now, , I fear you must take your leave before my husband comes down.

BONET: Very wise. I am in your debt, Mrs. Arbuthnot.

MRS. ARBUTHNOT: In that case I'm pleased, Mr. Bonet.

END OF SCENE 2

Scene 3. *Vanburgh reads the stage directions: "London, 1712 –as before. An antechamber of the Royal Society. Food laid out on a table. Mr. Moivre meets Mr. Bonet. By contrast to Mr. Bonet, Mr. Moivre is dressed in threadbare clothes."*

MOIVRE: Monsieur Bonet, your servant, sir.

BONET: Monsieur Moivre, good day to you sir.

MOIVRE (*Cautiously looking around*): We seem to be among the first to arrive.

BONET: We are early.

MOIVRE (*Moves to side table, pointing to food*): I have not eaten all day. My occupation... you know... hardly offers an opportunity.

BONET (*Reluctantly*): No one will see you.

(*MOIVRE starts wolfing down food*)

Monsieur Moivre... you know the reason for this meeting?

MOIVRE (*Quickly takes another bite and then surreptitiously puts some food, perhaps a roll, into his pocket*): The first gathering of the full Committee.

BONET: Of course and yet...may I ask you a frank question?

MOIVRE: I shall be more than pleased to be of service to the minister of the Prussian King...

BONET: Why was I chosen... some three weeks after Arbuthnot and the others?

MOIVRE: But not all others! Taylor, Aston and I were only invited two days ago.

BONET: And why eleven Fellows?

MOIVRE: Perhaps precluding a Judas among Newton's Apostles? (*Quick*). Of course, I'm only jesting. (*Pause*). But why ask me?

BONET: You've been a Fellow for some years-

MOIVRE: Fifteen... to be precise.

BONET: Precision befits a mathematician... which I am not. Yet the Committee's charge concerns mathematics... so why appoint me who is most deficient in this field? And who did so? I only received a letter from the Secretary without stating a reason.

MOIVRE (*Coyly*): The reasons will soon become clear, no doubt. If it had been solely for my mathematical competence... which I claim openly... I should have been among the first group... among Edmond Halley, one of Sir Isaac's greatest supporters...

BONET: I don't know him.

MOIVRE: Seven years ago, he observed a comet in the sky and predicted its return.

BONET: Was he correct?

MOIVRE: Alas, we must wait sixty-eight years to find out... Or William Jones, who sensibly introduced the symbol π ... (*Pause*). Yet I... though a mathematician... was among the very last... even after you.

BONET: Could you offer a simple definition of fluxions? I would be loath to admit my ignorance when the Committee meets.

MOIVRE: Fluxions are merely the velocities of evanescent increments... of infinitesimals, such that if a quantity is increased or decreased by an infinitesimal, then that quantity is neither increased nor decreased.

BONET: You mean zero?

MOIVRE: Larger than that... yet smaller than any other number. Is that simple enough? (*Noting that Bonet is still dubious*). Then try this. What Sir Isaac called the method of fluxions, Leibniz termed calculus... a method (*clear and slowly*) that finally related time with space.

BONET (*with a dubious expression*): I thank you.

(Moivre can see that Bonet doesn't understand.)

MOIVRE: It is a method that determines the rate of change at any moment of a quantity that itself is changing in relation to... oh, very well. Let me demonstrate... with an apple. (*He picks up an apple*). I shall not drop it... I shall eat it while you count the time it takes... in seconds.

(He starts eating. Bonet counts under his breath. Suddenly Moivre stops. Pauses. Starts eating again. Eats faster. Stops again. Picks his teeth for a second. Starts again. Stops again.)

MOIVRE (*Conversational*): The weather at present is quite inclement. Rather English, I would say.

(He resumes eating. Slows down. Then speeds up... and finishes the apple, pips, core and all.)

MOIVRE: Stop! How long did that take?

BONET: I'm not sure... let us say, one minute.

MOIVRE: Very well, one minute. Now: at thirty seconds, how fast was I eating?

BONET: How fast? It's impossible to say.

MOIVRE: Why?

BONET: Well, for one thing, your speed was not constant.

MOIVRE: Good... you paid attention. But now, *(occasionally speaks faster, even bordering on incomprehensibility)* take an interval of time... say, between fifteen and forty-five seconds. Estimate in ounces how much of the apple I ate in that interval. Divide this quantity by the time, namely one half of a minute and you get an average velocity in ounces per minute. Note! Ounces per minute! Now. *(Switches back to ordinary voice and speed)*. Can we improve this approximation, do you suppose?

BONET *(Pretends reflection)*: Taking a shorter interval of time?

MOIVRE: Excellent! *(Again speaks very fast, bordering on incomprehensibility)*. So take the interval between twenty-five and thirty-five seconds. Determine the average velocity over this period. Or if you are able, determine the average velocity in ounces per minute between twenty-nine seconds and thirty-one seconds. The smaller the increment, the better the solution. Thus, our velocity at any given moment is the "limit," as we say, of our average velocities over smaller and smaller time intervals containing that given moment. *(Switches back to ordinary voice and speed)*. You follow me?

BONET: I believe so.

MOIVRE *(Relieved)*: In that case, I congratulate you. You have mastered what Leibniz called the differential calculus.

BONET: You mean, there is another kind?

MOIVRE: Integral calculus.

BONET *(Reflects, then tentative)*: The inverse?

MOIVRE: We will make a mathematician of you yet! I shall demonstrate once more!

(He reaches for another apple. Bites into it. Hurts his mouth.)

MOIVRE: Ouch... ouch...

BONET: That one is made of wax. *(beat)* I believe you have another in your pocket—

MOIVRE *(Embarrassed)*: I'm saving it for later. But enough of experimentation.

(He puts the wax fruit back where it belongs.)

BONET: Very well. But, what if I give you this—

(Bonet points to a large fruit like a watermelon. Moivre waves it away.)

MOIVRE: Your contribution to the Committee's deliberation will not depend on your understanding further details. A quick tutorial is insufficient. However the calculus of probability has caught my attention for a number of years now. First, to study gambling odds, but then to address the probability of life itself... to calculate annuities and similar properties... even the date of my own death.

BONET: Your own?

MOIVRE: Now, at age 45, I have increasing need of sleep... very small increments each night. I shall pass into eternal sleep when the total reaches 24 hours... which I calculate will occur at age 87.

BONET: But your wife may keep you awake from time to time... thus ruining your arithmetical progression... and at the same time prolonging your life.

MOIVRE: I am not married.

BONET: Your future wife then.

MOIVRE *(Interrupts almost angrily)*: I cannot afford a wife.

BONET: Are numbers your whole life?

MOIVRE: There is literature. I know many works by heart... Rabélais... Molière. I could recite for you *Le Misanthrope* in its entirety—

(Starts reciting pompously some lines in French from Le Misanthrope)

Tous les pauvres mortels, sans nulle exception,
Seront enveloppés dans cette aversion?
Encor, en est-il bien, dans le siècle où nous sommes...

BONET (*Hastily*): Ça suffit! Some other time. But now to the matter at hand: to what circumstances do I owe my selection to the committee?

MOIVRE You would not be pleased to hear my explanation.

BONET: Still... may I hear it?

MOIVRE: They want a foreigner, who does not understand the issue.

BONET: But you... who understands the issue... are also a foreigner.

MOIVRE: Do you resent being picked solely for your foreign credentials and ignorance of mathematics?

BONET (*Laughs*): You do not mince your words! But frankness deserves a frank answer. Under ordinary circumstances, I would have taken it as an insult.

MOIVRE: What is different this time?

BONET: Diplomats often adjust their agenda to the circumstances facing them.

MOIVRE: (*Sees Arbuthnot approaching*). Ah... here comes...

(Moivre quickly stuffs another item of food into his pocket)

ARBUTHNOT: Mr. Moivre, your servant.

MOIVRE: Monsieur Bonet, may I introduce Dr. Arbuthnot.

BONET: Ah... Dr. Arbuthnot... your delightful wife... (*He stops himself.*)

ARBUTHNOT: My wife? You know my wife?

BONET: Ah, no, I apologize. A case of mistaken identity.

ARBUTHNOT: Monsieur Bonet, if you have spoken with my wife, it would be better for you if you said so.

BONET: Dr. Arbuthnot... my mistake, I do assure you.

ARBUTHNOT (*deciding to let matter rest for the moment*): Well, since my wife has nothing to do with the business at hand, we shall let the matter lie.

(Bonet bows graciously. Lady Brasenose enters)

ARBUTHNOT (*Taken aback*): Lady Brasenose!

LADY BRASENOSE: Gentlemen.

DR ARBUTHNOT: With the greatest of respect, this is the Royal Society.

LADY BRASENOSE: And hardly known for its welcome of women. But this is not its inner sanctum. Solely an antechamber.

DR ARBUTHNOT: Still, how did you gain entry?

LADY BRASENOSE: I am a lady of some reputation, Dr. Arbuthnot.

BONET: My lady, we are all aware of that. (*Kisses her hand*).

LADY BRASENOSE: I do not ask permission to enter an antechamber.

BONET: May I ask why you are here?

LADY BRASENOSE: I might ask you gentlemen the same. You, M. Bonet, are a diplomat. Fluent in words, but hardly so in fluxions. (*Turns to Arbuthnot*). And you, my good doctor? You could have claimed concern for a patient.

ARBUTHNOT: Why should I do that, Lady Brasenose? I'm a Fellow of the Royal Society and as such, it is my duty to deliberate on matters of concern to that Society.

LADY BRASENOSE (*Ironic*): And to its President?

ARBUTHNOT (*Angry*): And its President!

LADY BRASENOSE (*Abruptly turns to MOIVRE*). And you, Mr. Moivre? (*Offers her hand, which he kisses*). You're a skillful mathematician... I am told... but were you not appointed just two days ago to the Committee? Why did he wait so long?

MOIVRE: He?

LADY BRASENOSE: (*Ironic*): Would you prefer me to say "they?" Very well, I shall oblige you. (*Looks him over*). Why did they?

MOIVRE: Because it dawned on them that they had need of some foreigners!

LADY BRASENOSE: Undoubtedly also the reason why my diplomatic friend (*points to Bonet*) was chosen... unless (*smiles coquettishly*) he hides from me a competence in mathematics of which I was hitherto unaware-

BONET: Few things escape Lady Brasenose.

LADY BRASENOSE: True so far... and I hope still for years to come. So why, Mr. Moivre? There are other Fellows who are distinguished mathematicians and yet not English. Or are they not foreign enough?

MOIVRE: In England, not being English is already too foreign.

LADY BRASENOSE: *Touché*. But why was it you were appointed?

MOIVRE (*Vexed*): I already told your Ladyship—

LADY BRASENOSE: Because you are a mathematician, a Fellow... and not considered English? None of those reasons would have caused him... (*pretends to catch herself*)... I beg your pardon... I meant them... to appoint you but two days ago! Barely in time for a gathering of your Committee... the first ... and likely also last meeting!

ARBUTHNOT (*Irritated*): I see. Lady Brasenose, you've now added fortune telling to your other skills.

BONET: These days, news seems to reach my Lady even before it occurs.

LADY BRASENOSE: You seem to forget that you now live in England—an assembly of voluntary spies. (*Turns to Arbuthnot*). And why did you accept?

DR ARBUTHNOT: Your ladyship, forgive me. This is not a woman's concern.

LADY BRASENOSE: I doubt that your wife would agree with you, Dr Arbuthnot. I'm sure she had much to say to Mr. Bonet yesterday.

ARBUTHNOT: So you did meet her!

BONET: My apologies sir.

ARBUTHNOT: Enough of this. What are you doing here?

LADY BRASENOSE: I fear Newton is making your bed and is about to blow out the candle to put your Committee to sleep.

MOIVRE: No, that's inconceivable!

ARBUTHNOT: Unthinkable!

BONET: So what is your aim?

LADY BRASENOSE: To keep the candle lit.

ARBUTHNOT: The Committee is about to meet the President. Lady Brasenose you must depart at once.

LADY BRASENOSE: Very well. I shall take my leave because I have said what I came to say. (*Offers him her hand, which he kisses rather stiffly.*) I only hope that you have heard it. Good day, gentlemen. And remember that you are always welcome at my salon, where I shall forever be the soul of discretion.

(She goes out slyly.)

DR ARBUTHNOT: Gentlemen, I urge you to make no mention to anyone of this unfortunate interruption by Lady Brasenose.

MOIVRE: Of course.

BONET: Understood.

ARBUTHNOT: Nor to give any credence to her words. Otherwise the very foundations of the case may be prejudiced irreparably.

MOIVRE: Indeed.

BONET: Naturally.

ARBUTHNOT: Good, we are agreed, then. (*A bell sounds from outside the antechamber for the Committee to convene.*) And now, gentlemen, it is time. Shall we enter?

(They enter the chamber.)

(Once inside, they take a seat around the long table at which other committee members are already seated. Everyone sits in expectant silence.)

(The door at the back opens slowly to reveal a shadowy figure: Newton. He says nothing. He brings in copies of the report for all members. The copies are passed along the table.)

(When all have copies, Newton stands at the far end of the table mysteriously. Then, without a word, he leaves.)

(A pause, then:)

ARBUTHNOT: What are we to make of that?

(The other two shake their heads, equally baffled.)

(All three look at the report, as do all the members of the committee. They read the frontispiece.)

ARBUTHNOT *(After a little while):* Um...excuse me, gentlemen. Have you read the first page?

(Moivre nods.)

ARBUTHNOT: Mr. Bonet?

BONET: Yes. Yes, I've just read it.

ARBUTHNOT: I fail to comprehend this document. May I suggest we read that page again... aloud?

BONET: If you so wish. *(Reads in ceremonious tone).* "An account of the book entitled *Commercium Epistolicum Collinii & Aliorum.*" *(Turns to Moivre).* "*Commercium Epistolicum Collinii?*"

MOIVRE *(Impatient):* An exchange of letters with Mr. Collins.

ARBUTHNOT: And others!

BONET: Of course. But who is Mr. Collins?

ARBUTHNOT *(Even more impatient):* James Collins... an intimate acquaintance of Sir Isaac... but now deceased. Please proceed.

BONET *(Resumes reading out loud):* "Published by order of the Royal Society, in relation to the dispute between Mr. Leibniz and Mr. Newton, about the right of invention of the method of fluxions, by some *(looks at Moivre)* called the differential calculus."

MOIVRE *(Reads in similarly affected tone):* "This commercium is composed of several ancient letters and papers. And since neither Mr. Newton nor Mr. Leibniz could be witnesses, the Royal Society therefore appointed a numerous committee of gentlemen of several nations." *(In loud, ordinary tone).* That's us—

ARBUTHNOT: Please go on.

MOIVRE: "... to search old letters and papers, and report their opinions upon what they found." I presume these letters and papers will be provided to us to form our judgment.

BONET: I wonder. It says, "And by these letters and papers it appeared to them that Mr. Newton had the method in or before the year 1669, and it did not appear to them that Mr. Leibniz had it before the year 1677." (*A beat*).

ARBUTHNOT: May I request that you repeat that?

BONET (*More slowly and emphatically*): "And by these letters and papers it appeared to them that Mr. Newton had the method in or before the year 1669, and it did not appear to them—"

ARBUTHNOT (*Interrupts*): How can this be?

(Other members of the committee, now noticing the oddity, react.)

MOIVRE: How can what be?

ARBUTHNOT: "It appeared to them." (*Louder*). "It appeared to them?" Exactly what does Sir Isaac require of us? (*Pause*) Are we a committee or aren't we? Are we convened here to judge the issue or not?

MOIVRE: It's a very long report. (*Shuffles pages to look at the last one*). Fifty-one pages. Perhaps the statement "it appeared to them" is designed to hurry things along.

ARBUTHNOT: Nonsense! (*Pause*). Rather it appears to me that Sir Isaac is presenting his evidence and expects us to affirm and sign it without further scrutiny.

BONET: Exactement.

ARBUTHNOT: It is an outrage!

MOIVRE: So it seems.

BONET: An insult.

ARBUTHNOT: Far worse than any common or garden insult! This is a scandal! As men of principle and conscience, we must not... cannot... will not... tolerate being manipulated like this by Mr Newton!

BONET: Never.

ARBUTHNOT: We shall of course refuse to sign such a cynical document, Mr Bonet.

BONET: Bien sûr.

ARBUTHNOT: Mr. Moivre?

MOIVRE (*A moment's hesitation*): Yes... (*A beat*)

ARBUTHNOT: Is there something you wish to add, Mr. Moivre?

MOIVRE: Let me recall to you gentlemen how I discovered Newton's *Principia Mathematica*.

ARBUTHNOT (*Impatient*): I fail to comprehend its relevance to the matter at hand.

MOIVRE: You will. Calling one day on the Earl of Devonshire, I saw in the antechamber a copy of the *Principia* that Newton had come to present to the Earl that very day. I opened it and found, to my astonishment, that, strong as I thought myself to be in mathematics, I could only just follow the reasoning. The next day I procured a copy and tore out the pages. You see, London is very large, and being a tutor to moneyed English dullards, much of my time is employed solely in walking. That is what reduces the profit and cuts into my leisure for study, but by tearing leaf after leaf from the *Principia* and carrying a few at a time in my pocket, I could peruse it on my walks. Soon thereafter, I was elected to Fellowship in the Royal Society.

BONET: I wonder how many other Fellows were elected for mutilating a book.

MOIVRE: Whatever the reason, I was grateful to have been elected. For me, the creator of the *Principia Mathematica* can do no wrong.

(*Bonet and Arbuthnot exchange looks.*)

ARBUTHNOT: Oh...I see. (*beat*) Mr. Bonet? You are of course with me on this.

BONET: Of course.

ARBUTHNOT: And I am sure between the two of us we can persuade Mr Moivre to consider placing the obligations of morality above the quite understandable feelings of gratitude towards—

BONET (*Quickly*): Quite so. Nevertheless, it would be better if the committee adjourned before deciding whether to sign this document.

ARBUTHNOT: One moment! Why would the committee require time to consider? Do you not agree—

BONET: Of course, my dear doctor. Of course I agree. I agree entirely... in principle.

ARBUTHNOT: In principle?

BONET: Yes.

ARBUTHNOT: If you have an objection to my reasoning, you had better out with it at once, Mr Bonet, before I mark you down as an ally.

BONET: Come, come, what is this talk of "allies"? Of course I have no objection... none whatsoever!

ARBUTHNOT: Good.

BONET: I merely recommend the committee adjourn for a period of individual reflection.

ARBUTHNOT: Reflection upon what?

BONET: Who can say? (*perhaps indicating Moivre*) Upon one's conscience, perhaps.

ARBUTHNOT (*Glancing at Moivre*): Ah, indeed, upon one's conscience.

COMMITTEE (*ad lib*): Aye, aye, one's conscience, hear, hear, let's adjourn.

MOIVRE (*after a moment*): Well, shall we adjourn then, gentlemen?

COMMITTEE (*once more, ad lib*): Aye, aye... adjourn.

ARBUTHNOT: In that case, let us all meet again tomorrow at the same hour.

(They all get up.)

ARBUTHNOT: Good day, gentlemen.

COMMITTEE (*ad lib*): Good day.

(They all leave, including Arbuthnot. Moivre detains Bonet.)

MOIVRE: M. Bonet, a propos of Herr Leibniz: As he is President of your Academy in Berlin, I had hoped he would secure a university chair on my behalf.

BONET: I would advise you not to inform Dr. Arbuthnot of that.

MOIVRE: No indeed, he is a man of principle, and acts according to his precepts. But it matters not, since my request fell on deaf ears.

BONET: Ah. How inconsiderate of Herr Leibniz.

MOIVRE: I believe your King appointed Leibniz President for life?

BONET: That he did! And with a handsome stipend... also for life.

MOIVRE: We have no president for life in the Royal Society... nor does he receive remuneration.

BONET: I'm aware of that.

MOIVRE: Of course you are a member of your own Berlin Academy?

BONET: I am not.

MOIVRE: Yet you became a Fellow of the Royal Society but a few months ago. Would it be discourteous to inquire why you are not a member of your own Academy?

BONET: I believe I shall become one, and soon.

MOIVRE: Oh? Splendid! In which class? Not mathematics, I presume?

BONET: Theology.

MOIVRE: For which Leibniz will propose you?

BONET: Who knows, M. Moivre... who knows?

(Not wishing to push his luck any further, Moivre merely smiles politely. They go.)

MOIVRE *(as they leave)*: Do you suppose there'll be a dinner laid on for us?

END OF SCENE 3

Scene 4. *Cibber again reading stage directions: "London, 1712, the same day as the previous scene. Lady Brasenose's salon."*

LADY BRASENOSE: Why? (*Pause, then with increasing intensity*). Why? Why? Why? (*Longer pause*). Mr. Bonet! Why?
(*Bonet walks to the window, remains quiet, whereupon Lady Brasenose assumes formal tone*)

Mr. Bonet, did you hear me?

BONET: Yes.

LADY BRASENOSE: Then why do you not reply?

BONET: Because your Ladyship wouldn't understand.

LADY BRASENOSE: I lack intelligence?

BONET: My dear Lady Brasenose...those are your words... not mine.

LADY BRASENOSE (*Falsetto and French accent*): "My dear Lady Brasenose. Not solely your beauty and breeding... it's your brain that always lures me here."
(*Resorts to ordinary tone*). Those were your words.

BONET: A long time ago.

LADY BRASENOSE: Is 6 years that long ago? Long enough for my beauty to have wilted? Long enough for my breeding to have deteriorated? Long enough for my brains to have desiccated? Is that it?

BONET: No...

LADY BRASENOSE: Then why not let me into your confidence? Do you intend to sign?

BONET (*Facing her, firmer*): My lady is not a Fellow.

LADY BRASENOSE: You will not tell me because I'm not a Fellow? The Royal Society does not believe it needs women—

BONET: Of course we need women...
(*Sexual tension between them.*)

LADY BRASENOSE: Do you?

BONET: That's why I always accepted your invitations.

LADY BRASENOSE: That had nothing to do with the Royal Society.

BONET: Being part of your circle surely helped me become a Fellow. Everyone seeks your invitations.

(She gets closer to him and with her fan touches his heart.)

LADY BRASENOSE: Then do not sign that paper...

(He breaks away from her.)

BONET: A man of God must not be swayed by temptation.

LADY BRASENOSE *(Disappointed, she changes tack):* You have changed Mr. Bonet. Discreet temptation used to tempt you. But morality... not temptation... should persuade a man of God not to sign that paper.

(At this point CIBBER interrupts the action and it freezes.)

CIBBER: Morality! What the plague! Is there to be no romance, no dallying, between these two?

VANBRUGH: No, Colley.

CIBBER: Sir John, I think you will find it will be missed.

VANBRUGH: Be that as it may—

CIBBER: Allow me to compose a passionate scene for you—

VANBRUGH: Colley!

CIBBER: I know, I know. He is a man of God, that's his character. It's deuced inconvenient of him.

VANBRUGH: The critics damned me for licentiousness, Colley. This time, I will not give them the satisfaction.

CIBBER: Nor give the public theirs, it seems. Very well, let's carry on, and see if our Lady Brasenose may find another... altogether more refined... form of persuasion.

(Back to the scene)

LADY BRASENOSE: I suspect Dr. Arbuthnot will refuse—

BONET: That may be a mistake.

LADY BRASENOSE: He is a Fellow. Did not Newton himself select him for the Committee?

BONET: Sir Isaac may yet regret it.

LADY BRASENOSE: Is that what counts? Newton's regrets?

BONET: Yes... that is important. But you would not understand.

LADY BRASENOSE: I beg to differ, Monsieur Bonet... I beg to differ quite firmly. But let us consider Sir Isaac Newton. He's 69 and single... I know of no women in his life... not one... and I know why—

BONET (*Interrupts*): But that is true of many other men. I'm not married.

LADY BRASENOSE: You are almost 30 years younger. You will marry some day... and of course produce children.

BONET: Why "of course"? Your ladyship is married... yet you have no children.

LADY BRASENOSE: Men produce children... women bear them. (*Pause*). I chose not to bear that load.

BONET: Few women have that choice.

LADY BRASENOSE: Because most men won't grant them that privilege. But I am privileged—

BONET: In more ways than one, my lady.

LADY BRASENOSE: As you especially should know. Now... you are cautious... but you will marry. You do not dislike women... as I, especially, should know.

(A moment as he considers the meaning of this.)

BONET: Sir Isaac dislikes women?

LADY BRASENOSE: Even worse... he fears them. He will never marry.

BONET: He took you into his confidence?

LADY BRASENOSE: Once...(*beat*)

BONET: That I can believe. I've often heard your salon called London's confessional.

LADY BRASENOSE: I would hardly consider that a tribute... coming from so Protestant a mouth as yours.

BONET: My Lady, accept it as praise, since I... a confirmed Protestant... have visited you so often out of my own free will.

LADY BRASENOSE: Spare me your compliments. But as I said, I know why Newton has remained single.

BONET (*Intensely curious*): That I find intriguing! Could you divulge your source's identity?

LADY BRASENOSE: If I did, my salon would turn into a confessional of ill repute if confidentiality were not honored. But my dear Bonet, how well do you... a diplomat... know Sir Isaac?

BONET (*Hesitates*): Not well.

LADY BRASENOSE: But you have met him?

BONET: But once.

LADY BRASENOSE: In private?

BONET: At the Royal Society when I signed the book as a new Fellow.

LADY BRASENOSE: I conclude then that you do not know him at all! Yet you should not only be aware of his qualities—

BONET (*Interrupts*): His merits are well known—

LADY BRASENOSE (*Interrupts in turn*): But also his foibles, quirks... and more. For instance take his fondness for anagrams.

BONET: Anagrams? Is that of relevance?

LADY BRASENOSE: I have heard it said that when Newton first thought of his method of fluxions, he wrote it down in his notebook—

BONET: Surely that is not unusual. Where else should he have written it?

LADY BRASENOSE: But disguise it in secret anagrams? Or have anagrams now become the mode in scholarly writings? (*Waves her hand in dismissal*). No

matter. Newton has gone beyond mathematics in that regard. He once showed me the words *Jeova sanctus unus*. Of course, he would deny it now.

BONET: Why deny it? Surely the Latin words for "God's holy one" are not sacrilegious?

LADY BRASENOSE: Consider that in Latin the letters J and I are used interchangeably.

BONET (*Annoyed*): I fail to see the relevance.

LADY BRASENOSE: You would if you rearranged the letters in *Jeova sanctus unus* and then arrived at "Isaacus Neotonus."

BONET: Sir Isaac's Latin names?

LADY BRASENOSE: Indeed. And should the President of the Royal Society consider himself "God's holy one"? Because he was born on Christmas Day with no father alive? Daubing himself the divine messenger possessed with the confidence of a holy son to construct a picture of God's design for nature?

BONET: He may have diverted himself with anagrams. No one means all he says!

LADY BRASENOSE: That may be true of diplomats... like you. But those who know him, will tell you that Newton says all he means. (*Pause*). You claim to be a man of God now. Will you sign your name in support of such a low, heretical... if not also perverted—

BONET (*Interrupts angrily*): I refuse to be questioned in this fashion! Even by you, Lady Brasenose. In time you shall learn the answer. (*Pause*). If not from me, then surely from some one less restrained.

LADY BRASENOSE: A temptation I shall not resist... even if it requires loosening tighter lips than yours.

(*He leaves.*)

END OF SCENE 4

Scene 5. *Vanburgh reads directions: "London, 1712, later that same day. Dr. Arbuthnot and Mrs. Arbuthnot in heated discussion".*

ARBUTHNOT: Why? Why? Why? (*Longer pause, then with increasing intensity*). Margaret! Why don't you answer me?

MRS. ARBUTHNOT: I cannot.

ARBUTHNOT: But why? After I gave strict instructions that no one associated with the committee should be admitted.

MRS. ARBUTHNOT: I did not invite him, John. He arrived wishing to speak with you. What could I do?

ARBUTHNOT: What did you do?

MRS ARBUTHNOT: I offered him refreshment. We exchanged pleasantries.

ARBUTHNOT: You didn't talk?

MRS. ARBUTHNOT: We did not sit there... struck deaf and dumb.

ARBUTHNOT: Margaret, do not trifle with me. Did you discuss the Committee?

MRS ARBUTHNOT: How could I? What do I know of that, since you won't tell me anything of substance?

ARBUTHNOT: I did tell you ... too much, in fact. And now regret it. What else transpired?

MRS ARBUTHNOT: Nothing. He left... disappointed that you would not talk to him.

ARBUTHNOT: Very well, we will let it lie. (*beat*) You're absolutely certain you didn't say a word?

MRS ARBUTHNOT: No... nothing. John... will you not favor your wife with your confidence, now that the Committee has met and its business is finished?

ARBUTHNOT: The business is not finished.

MRS ARBUTHNOT: What do you mean... it is not finished?
(*Pause as he considers telling her.*)

Who was there?

ARBUTHNOT: All eleven.

MRS. ARBUTHNOT: No one else?

ARBUTHNOT: Newton.

MRS. ARBUTHNOT: Of course Newton... but who else?

ARBUTHNOT: No one. Newton is clever... but also cautious. Why invite unnecessary witnesses? The Committee is already inundated with Newton's toadies.

MRS. ARBUTHNOT: Would it not have been politic of Newton to include some Fellows less beholden?

ARBUTHNOT: There were a few.

MRS. ARBUTHNOT: Mr. Bonet?

ARBUTHNOT: He's one.

MRS. ARBUTHNOT: And you.

ARBUTHNOT (*Tired nod*): And I.

MRS. ARBUTHNOT (*Impatient*): Oh John! Tell me what happened.

ARBUTHNOT: I wanted to be honest.

MRS. ARBUTHNOT: Was that not ill-judged?

ARBUTHNOT (*Nods*): Yet, does truth not bear the same relation to understanding as music does to the ear or beauty to the eye?

MRS. ARBUTHNOT: Newton is concerned with understanding the universe. That truth concerns him... but no other music reaches his ear. What did he say?

ARBUTHNOT: Nothing.

MRS. ARBUTHNOT: Nothing at all?

ARBUTHNOT: Absolutely nothing

MRS. ARBUTHNOT (*More exasperated*): John! I've never had to push you like this. Do you not trust me?

ARBUTHNOT: It's a matter of shame... not trust.

MRS. ARBUTHNOT (*Warmer*): Then confide in me... I'm your wife.

ARBUTHNOT: I thought of Flamsteed, our Astronomer Royal. He once sent me a note that said, "*Those that have begun to do ill things, never blush to do worse to secure themselves.*" I thought he was talking about Newton at the time, and now I am sure of it.

MRS ARBUTHNOT: What do you mean?

ARBUTHNOT: We were presented with the finished report before the Committee had properly met. And worse was to come! Newton's conceit exceeds perversity.

MRS. ARBUTHNOT (*Impatient*): How could it be worse? John! You must tell me!

ARBUTHNOT: Newton alone had written it—

MRS. ARBUTHNOT (*Shocked*): That I cannot believe! Not even Newton could be that brazen.

ARBUTHNOT: He was... and cunningly termed the report, "An exchange of letters between Collins and others."

MRS. ARBUTHNOT: John Collins?

ARBUTHNOT: Aye.

MRS. ARBUTHNOT: But he's dead!

ARBUTHNOT: Aye... letters written to the late John Collins and other deceased correspondents by Leibniz and Newton... and now selected by Newton... to bolster his case in his own words without contradiction by the dead.

MRS. ARBUTHNOT: That is barefaced. And you were expected to sign... without further debate?

ARBUTHNOT: All of us were.

MRS. ARBUTHNOT: And you did? I would not want you to suffer the wrath of Sir Isaac. We both know his unparalleled cunning. You did sign, didn't you?

ARBUTHNOT: No pen was set to paper!

MRS. ARBUTHNOT: Oh!

ARBUTHNOT: The committee is reconvening tomorrow. By then we must decide.

MRS ARBUTHNOT: So there is still time. (*Pause*). John... I'm afraid.

ARBUTHNOT: Of me... your husband?

MRS. ARBUTHNOT: Not of you... but for you! I'm afraid of the consequences if you don't sign.

ARBUTHNOT: Margaret, I'm a Fellow of the Royal Society—

MRS. ARBUTHNOT: But he's the president.

ARBUTHNOT: He'll understand when I explain—

MRS. ARBUTHNOT: He may understand... but he will never forgive you.

ARBUTHNOT: Nonsense!

MRS. ARBUTHNOT: John... you're being foolhardy.

ARBUTHNOT: I promise to be diplomatic... but honest. An untruth is best contradicted by truth... not another untruth.

MRS. ARBUTHNOT: Have you not been listening to me, John? That will never work with him. Diplomacy? Perhaps. But honesty?

ARBUTHNOT: That is an unwarranted conclusion!

MRS. ARBUTHNOT: However diplomatically delivered, Newton will never accept an honest explanation that criticizes him...

ARBUTHNOT: I shall not criticize him.

MRS. ARBUTHNOT: He will consider your refusal to sign public criticism.

ARBUTHNOT: I shall explain in private.

MRS. ARBUTHNOT: Your name's absence from that document alone will be sufficient insult.

ARBUTHNOT: I shall prove you wrong

MRS. ARBUTHNOT: John! Sign. You cannot afford the risk. He will spit on you...
(*beat*) and then convince you it's raining.

ARBUTHNOT: Margaret!

MRS. ARBUTHNOT: Have you forgotten his cruelty? As Master of the Mint, Newton applauds the flaying and hanging of many a man who crosses his path.

ARBUTHNOT: It is the duty of the Master of the Mint to ensure the soundness and safety of our country's coinage. Forgers must be punished!

MRS. ARBUTHNOT: But attend in person the execution of every forger and clipper... and do so for years? Hardly a requirement for an occupant of so high an office. (*beat*) John, you must sign that report! For my sake if not your own.

ARBUTHNOT: Why will you not support my decision?

MRS ARBUTHNOT: Sign. Or he will flay and hang you!

ARBUTHNOT: Margaret, he is no monster!

MRS ARBUTHNOT: John, for pity's sake. Sign!

ARBUTHNOT: Everywhere I turn, I am surrounded by... moral... turpitude! And now you, my own wife—

MRS ARBUTHNOT: Do it! Please!

ARBUTHNOT: No, madam, I will not sign away my reputation! Do you not know your own husband? Let them hang me from Tyburn as a traitor to my country, but I will... not... sign that foul document!

(He storms out. She goes after)

(CIBBER turns to VANBRUGH.)

CIBBER: If I were you, Sir John, I'd place an interval right here.

VANBRUGH: Sound advice. In any case, I need a piss.

(They exit.)

END OF SCENE FIVE

END OF ACT 1

Scene 6. *Cibber: "London 1712. Mr. Newton waits in the shadows of an antechamber at the Royal Society. Dr. Arbuthnot enters carrying the report. Mr. Newton gestures for him to sit down while he remains towering over him".*

ARBUTHNOT: Sir Isaac: I deduce that not a word is to be altered in this report?

(Newton is silent.)

ARBUTHNOT: And thus be published unamended... even if some members demur?

(Somewhat threatening silence from Newton.)

ARBUTHNOT: I see... yes... of course. *(Long pause)*. Such protest would be apostasy in your eyes?

(Faint nod by Newton)

ARBUTHNOT: Unacceptable to the President of the Royal Society?

NEWTON *(Threatening tone)*: Second inventors have no rights, Dr Arbuthnot. None!

ARBUTHNOT: Indeed not... none whatsoever. Yet for myself, Sir Isaac... and I speak solely for myself... I hold open disputes in distaste.

NEWTON: But so do I, Dr. Arbuthnot. No open disputes.

ARBUTHNOT: If I may make a proposal, Sir Isaac?

(Newton is silent.)

ARBUTHNOT: What is needed here is a published... unanimous report-

NEWTON *(Raises index finger—or other gesture—for emphasis)*: Unanimous! All eleven!

ARBUTHNOT: Naturally. No exception. None! *(Pause)*. But for that the identity of the Committee could remain undisclosed.

NEWTON *(Nods)*: A "Numerous Committee of Gentlemen of several Nations".

ARBUTHNOT: Precisely. But once granted that, would logical reasoning then not support my request *(questioning, perhaps even pleading look at Newton)*...

(Silence from Newton.)

ARBUTHNOT: ... that unanimity by vote of an anonymous Committee... need not further be confirmed by signature?

(Silence from Newton.)

ARBUTHNOT: Publication should suffice. *(beat)*. Surely it does, Sir Isaac... does it not?

(Silence from Newton.)

ARBUTHNOT: And further, may I venture to assert that ...under such conditions unanimity might be assured... Sir Isaac? By all eleven!

(A brief pause. Newton rises. Arbuthnot rises. Giving nothing away, Newton leaves.)

END OF SCENE 6

Scene 7. *Cibber: "London, 1712, The Arbuthnot home. Mrs. Arbuthnot paces impatiently. Looks up as her husband enters".*

MRS ARBUTHNOT: John—

ARBUTHNOT: It's over. And there is nothing more to say!

(He storms across the stage and out. Then returns. Sits down. She waits.

ARBUTHNOT: I started out on the wrong foot.

MRS. ARBUTHNOT: You mean with honesty? *(Seeing him nod wearily, she continues more gently).* John, I had warned you. *(Reaches over to pat his hand or other gesture of affection).* What did you say?

ARBUTHNOT: I thought of Francis Bacon: "There is little friendship in the world... and least of all between equals." I wanted to ask, "Why not prove Bacon wrong?"...

MRS. ARBUTHNOT: And did you?

ARBUTHNOT: No, the Committee's concern is with superiority... of British science. Friendship is irrelevant. If it was proper for Germans to pin on Leibniz another's garland, it was the duty of the committee to restore to Newton what is really his own.

MRS. ARBUTHNOT: And that's what you told Newton?

ARBUTHNOT: We hardly had to... We're all toadies now...

MRS ARBUTHNOT: At least the sordid business is over.

ARBUTHNOT: Is it?

MRS ARBUTHNOT *(Worried):* John, please tell me you signed.

ARBUTHNOT: I did not sign, madam.

MRS ARBUTHNOT: Oh, God!

ARBUTHNOT: None of us signed because the report is to be published anyway. With our "anonymous" approval. That was my proposition and Newton is satisfied with it. And I hope, madam, that you're satisfied as well. *(He makes to leave.)*

MRS ARBUTHNOT: John... that is unjust. My concern was the protection of my husband and my children. We both know what he would have done if you had crossed him.

ARBUTHNOT: "Those that have begun to do ill things, never blush to do worse to secure themselves." I thought Flamsteed's words referred to Newton. Now, I am not so certain. *(beat)* I am off to my study... to compose my thoughts. I would be grateful if you left me in peace.

(He's gone.)

LIGHTS ON CIBBER AND VANBRUGH, while Mrs. Arbuthnot fades in darkness.

CIBBER: A pithy scene.

VANBRUGH: Pithiness has its place... even on the stage.

CIBBER: Granted... in this case. But as for Newton, I fear your public needs to learn more.

VANBRUGH: Hm.

CIBBER: Everyone knows why he became President of the Royal Society... the greatest natural philosopher and mathematician of our time, and so on. But...we need more scandal!

They think for a bit. Cibber pours a drink for them both.

VANBRUGH: Of course, some asked why he left Cambridge to accept his Majesty's appointment as Master of the Mint.

CIBBER: That is obvious: a great deal of money—

VANBRUGH: "The love of money is the root of all evil." 1 Timothy 6.10.

CIBBER: Quoting the New Testament is hardly scandalous, John.

VANBRUGH: Excessive love of money might be...

CIBBER: Well then we should use it!

VANBRUGH: Well...

CIBBER: Yes, out with it, man!

VANBRUGH: There was his South Sea Company speculation... but *(brusquely)*: I prefer not to raise that painful subject. It showed we did not learn from the Dutch tulip mania.

CIBBER: You also bought shares?

VANBRUGH: And lost them all!

CIBBER (*Thinking*): Any other character in the play suffer the same fate by any chance?

VANBRUGH: I believe Arbuthnot. (*beat*). And also Alexander Pope. "'Tis ignominious not to venture," he wrote to his broker.

CIBBER: Hm....But Sir Isaac?

VANBRUGH: He had made an 100% profit on his investment as the stock rose. Further evidence of his genius with numbers...

CIBBER: Hardly a point worth emphasizing in the play. But, continue.

VANBRUGH: The stock kept rising... and rising...

CIBBER: A familiar story even today.

VANBRUGH: Until even the great Newton... by then Master of the Mint... speculated again.

CIBBER: And lost?

VANBRUGH: Twenty thousand pounds.

CIBBER (*Shocked, yet gleeful*): Twenty thousand! Shall we use it?

VANBRUGH (*Wags his head in doubt*): It's tempting... yet all too common... especially today. It will dilute the point I wish to make.

(They have another drink and another think.)

CIBBER: Very well, we must have something else equally scandalous.

VANBRUGH: Alchemy?

CIBBER: Alchemy sounds promising.

VANBRUGH: Newton wasn't just interested in alchemy... he was obsessed by it. But unfortunately... for us... he was after the philosopher's stone... the unity of nature... not after gold. But Sir Isaac was careful! He never wrote or spoke in public on the subject. Furthermore, it's not relevant to the dispute at issue, which deals with mathematics.

CIBBER (*Annoyed and impatient*): Oh, mathematics! The public would hardly stomach more mathematics! (*beat*). Of course if you suggest that sex is in some way akin to mathematics?

VANBRUGH (*Sarcastic*): I must admit that such resemblance has escaped me... so far. I know of your competence in one endeavor... but both?

CIBBER: If competence in mathematics is required for a playwright, no plays will ever be written about mathematicians.

VANBRUGH (*Amused*): In that case, enlighten me about the kinship between sex and mathematics.

CIBBER: Both can produce practical results... even unexpected ones... but that is not foremost in the practitioners' minds when they indulge in it. (*beat*). Most often it is pleasure.

VANBRUGH: Not curiosity?

CIBBER: Satisfying one's curiosity often leads to pleasure.

VANBRUGH: Colley, I fear this is getting us nowhere.

(They drink – a hiatus in the conversation.)

CIBBER: Well, so much for Newton and scandal.

VANBRUGH: Colley, as I said before—

CIBBER: Yes, yes, the minions... those damned minions! But, for heaven's sake, why bring in the King of Prussia's Minister to England... hardly a scandalous occupation?

VANBRUGH: None of my characters have scandalous occupations... least of all Bonet. It's their scandalous behavior I wish to unmask.

CIBBER: Germans are never scandalous. Learned? Yes... Hard working? Always... Dull? Often... Cruel? Perhaps... But scandalous?

VANBRUGH: Our Bonet is not German. Some would call him Swiss—

CIBBER: Swiss? Good heavens, John! Even worse than German! For the Swiss... what is not prohibited is proscribed. I advise eliminating him from the play.

VANBRUGH: This Bonet is from Geneva.

CIBBER: Why didn't you say so? That is a mitigating fact... possibly even promising. French scandals are the best... and Geneva is right at the border.

VANBRUGH: He studied medicine in Leyden at age 15.

CIBBER: I would never mention that in the play!

VANBRUGH: Because Leyden is in Holland?

CIBBER: I am referring to his age. Precocity is never appreciated on the stage. No, no, we can't have any of this in the play. It won't do, John, and that's my final word on the subject.

VANBRUGH: I see. You will join me as my collaborator no further than your whimsy allows.

CIBBER: My whimsy? Or the public's appetite for amusement?

(Stalemate. Vanbrugh impishly suggests:)

VANBRUGH: Would you allow me to refer to the fact that in London Bonet first joined the Society for the Propagation of the Gospel and four years later the Society for the Promotion of Christian Knowledge?

CIBBER: What the plague! I am beginning to dislike the man—

VANBRUGH: But why?

CIBBER: I cannot stomach pious proselytisers. Besides they do not care for the theatre.

VANBRUGH: That may be so... but his religion is relevant to our play as I will now demonstrate.

CIBBER: Indeed...well this had better be good!

END OF SCENE 7

Scene 8. *Vanbrugh: "London, 1712. At Lady Brasenose's salon. Lady Brasenose, Dr. Arbuthnot and Bonet in animated... even contentious conversation".*

LADY BRASENOSE: Now tell me: did Sir Isaac get his way?

ARBUTHNOT: Why ask us?

LADY BRASENOSE: Because you were there!

ARBUTHNOT: But so were nine others.

LADY BRASENOSE: I had more confidence in you... both of you.

BONET: My Lady uses the past tense. You have no confidence now?

LADY BRASENOSE (*Sharp, yet smiling*): You listen to nuances...

BONET: In diplomacy, precision in language leads to imprecision in meaning.

LADY BRASENOSE (*Laughs outright*): I am tempted to pursue this line of conversation... it does suit a salon. But I shall resist. So out with it! The report is at the printers. Was your Committee's decision unanimous?

BONET: It was.

LADY BRASENOSE: Without giving notice to Leibniz? Without inviting him to offer documents in his defense?

ARBUTHNOT: Without such actions.

LADY BRASENOSE: Yet you all signed? Shame on you!

BONET: You're overlooking the nuances, Lady Brasenose! I said the decision was unanimous—

ARBUTHNOT: But we did not sign.

LADY BRASENOSE (*Taken aback*): How did the two of you accomplish that?

BONET: None signed!

LADY BRASENOSE: Sir Isaac is more malleable than I thought.

ARBUTHNOT: Not more malleable... just more subtle.

LADY BRASENOSE: Or more devious? (*Makes dismissive gesture*). No matter. What caused his change of mind?

BONET (*Points to Arbuthnot*): Our doctor's diplomacy.

LADY BRASENOSE: If our physicians now turn into diplomats, what happens to our diplomats?

ARBUTHNOT: I'm afraid my Lady's question is not applicable to the case at hand. Both the physician (*points to himself*) and the diplomat (*points to Bonet*) chose prevarication.

BONET: Dr. Arbuthnot... you're too severe.

ARBUTHNOT (*Turns to Bonet*): Am I? What is a prevaricator in your eyes?

BONET: A quibbler... or equivocator.

LADY BRASENOSE: In other words... a diplomat.

ARBUTHNOT (*Quietly*): We were cowards...

LADY BRASENOSE: Cowardice and diplomacy are not mutually exclusive! But Dr. Arbuthnot! I've never before seen you wear a hair-shirt... at least not in my house. It's time you discarded it. Enlighten me... both of you! I have always thought of you as men of principle.

BONET: Principles exist to be broken... at least at times.

LADY BRASENOSE: Is that the diplomat speaking...?

BONET: Or the churchman. "*Thou shalt not kill*" has never prevented religious wars.

LADY BRASENOSE (*Impatient*): I want to hear about the prevarication... not its rationalization.

BONET: The identity of the Committee will remain undisclosed. (*Points to Arbuthnot*). The good doctor can explain... as it was his initiative.

ARBUTHNOT: Unanimity by a "*Numerous Committee of Gentlemen of several Nations*" doesn't need to be confirmed by signature. Publication suffices.

LADY BRASENOSE: Like the death warrant for Charles I?

ARBUTHNOT: An apt comparison. Killing a scholar's reputation is also murder.

BONET: (*Pause*). Dr. Arbuthnot's proposal was carried unanimously.

LADY BRASENOSE (*Admiringly*): I never realized prevarication could be so effectual.

ARBUTHNOT: Lady Brasenose... and Mr. Bonet. Forgive me, but I must take my leave. A patient waits who must not be kept waiting.

(*Exits*)

LADY BRASENOSE (*Turns to Bonet*): But you could have been the honorable exception to unanimity. You have the least to fear of Newton. His wrath will not follow you to Geneva. But now that we are alone, I trust you will answer honestly.

BONET: I did not vote for Newton... I voted against Leibniz.

LADY BRASENOSE: You proclaimed Leibniz a plagiarizer?

BONET: I am not qualified to pass judgment in mathematics.

LADY BRASENOSE: But that was the issue!

BONET: To me it was a question of higher truth... not subject to adjustments, however infinitesimal. In a religious calculus, adjustments cannot be tolerated. Leibniz's latest writings justify theodicy, which I find unacceptable. (*Pause*). And so does Newton.

LADY BRASENOSE: The "Odyssee"? How does Homer enter the argument?

BONET (*Impatiently*): Not the Odyssey. (*Spells it, loud and slowly using French alphabet*). T H E O D I C Y.

LADY BRASENOSE (*Laughs*): Oh, Theodicy! And I take it Newton shares your views on religion?

BONET (*Quick*): We both abhor reunification of Protestantism and Popery. Yet Leibniz, though claiming to be Lutheran, moves easily in Catholic circles... and wishes more of us to do so. (*Vehement*). That crypto-Catholic! And on theodicy, Newton and I see eye to eye.

LADY BRASENOSE: On theodicy, I'd take Leibniz's side. Does not theodicy argue that an omnipotent God would allow evil to exist, because sin is unavoidable? That sin is not the agency of God but arises out of the necessary limitation of Man?

BONET (*Shocked*): Argument? It's idle speculation of the worst kind. True heresy!

LADY BRASENOSE: Speculating about the existence of evil in a world created by a good God does not seem idle to me. Theodicy would claim that as Man cannot be absolutely perfect, Man's knowledge and power is limited. Thus we are not only liable to wrong action, but it is unavoidable or we would have absolutely perfect action from a less than absolutely perfect creature. How otherwise explain that God allowed Newton's manipulations? (*Pause*). Or do you attribute absolute perfection to Sir Isaac?

BONET: Lady Brasenose... now you are toying with me.

LADY BRASENOSE: Did you truly support Newton in an argument about the mathematical calculus by invoking religious reckoning... whatever that may be? There must be more.

BONET (*Losing his temper*): There is more. The Royal Society honored me... a foreigner... by election to its illustrious fellowship. But my own King's academy has not! Which academy's president would you support?

LADY BRASENOSE: Supporting Newton is unlikely to garner you election in Leibniz's academy.

BONET: But voting against Leibniz will.

LADY BRASENOSE: You have now piqued my curiosity.

BONET: You will hold this in confidence?

LADY BRASENOSE: If it merits such treatment.

BONET: It does.

LADY BRASENOSE: Very well.

BONET: Election to the theology class of our Academy is my desire. Its director, Daniel Ernst Jablonski, who also preaches at the King's Court, supports me. He founded the Academy with Leibniz. Whereas Leibniz as President receives a salary for life from the King, Jablonski and his colleagues receive nothing.

LADY BRASENOSE: Whereupon envy raised its ugly head!

BONET: Perhaps... but Leibniz's attention has since wandered far from the Academy.

LADY BRASENOSE: So that a stipend for life is not further justified?

BONET: Putting it at the disposal of Jablonski... who labors night and day for the King's Academy... seems only just.

LADY BRASENOSE: And if you report Newton's victory to your King, Leibniz's merits will diminish?

BONET (*Admiringly*): My lady's acumen has not been blunted in six years.

LADY BRASENOSE: On the contrary, it has sharpened. (*Pause*). So as Minister, it will be your duty to report the Royal Society's conclusions to your court?

BONET: I shall dispatch a copy of the *Commercium Epistolicum* to Berlin. No commentary on my side will be necessary. It is damning enough.

LADY BRASENOSE: Because Newton wrote it.

BONET: No outsider is privy to that information.

LADY BRASENOSE: And your participation in the Committee?

BONET: Why disclose it when the Royal Society itself will not?

LADY BRASENOSE (*Ironic*): My dear Bonet. You have just provided unimpeachable evidence in favor of theodicy...

(He is about to protest when Moivre enters.)

MOIVRE: Lady Brasenose, I kiss your hand. Monsieur Bonet, your servant.
(Looks around, addresses Bonet but is overheard by Lady Brasenose).

It appears I arrived too tardily for refreshments.

BRASENOSE: Have you no shame, sir? *(He looks at her.)*

MOIVRE: Your Ladyship is already informed of the Committee's decision, I take it?

(She smiles coldly. Pause. He smiles benignly.)

MOIVRE: I am moved by your Ladyship's concern for the moral welfare of our Committee, although I do not fathom the reason.

LADY BRASENOSE: Is that not obvious?

MOIVRE: Obvious? Perhaps... *(He smiles again.)* But are you aware that at age 20, I was incarcerated for refusing to convert to Catholicism? I fled to England and have lived here ever since... yet they still call me French. *(Bitter)*. As a Huguenot émigré, I eke out a living from tutoring listless students... from solving problems of chance in coffee houses... even from calculating odds for gamblers...

LADY BRASENOSE: I find that shocking.

MOIVRE: And so do I, my dear lady... though probably for other reasons. I have still to find a true patron to open the door to a position of merit... in this country or the Continent.

LADY BRASENOSE *(Following his train of thought)*: But now?

MOIVRE: Precisely! For the first time... the burden has turned into an advantage... that I shall use to the fullest. Because you see, the President needed foreigners.

LADY BRASENOSE *(Coldly)*. I congratulate you for not having been born in England.

MOIVRE: I am not in the habit of refusing congratulations... especially not if offered by your Ladyship. *(beat)* Whatever the reasons may be.

(Bonet looks at Lady Brasenose. She remains quiet.)

(All rise. Moivre kisses Lady Brasenose's hand.)

MOIVRE: My lady... your most humble and obedient servant.

(Moivre goes to the door and waits.)

BONET: *(Kissing her hand)* Lady Brasenose, it is time I also took my leave.

LADY BRASENOSE: As you wish. But you are always welcome in my salon.

(A moment between them. He offers a smile but she rejects him with a look away. Bonet parts from Lady Brasenose and the two men leave.)

(She is left alone in deep thoughts. Then ARBUTHNOT returns.)

LADY BRASENOSE: Oh, Dr. Arbuthnot... you startled me. I thought you were long gone.

ARBUTHNOT: No, I waited... I realised I'd forgotten something.

LADY BRASENOSE: And what was that?

ARBUTHNOT: A confession... and a request.

LADY BRASENOSE (*Highly curious*): In that case, please, be seated.
(*They sit. A silence. Then.*)

ARBUTHNOT: Has your Ladyship ever met Flamsteed, the Astronomer Royal?

LADY BRASENOSE: More than once... in this very house.

ARBUTHNOT: You know of his enmity with Newton?

LADY BRASENOSE (*Nodding*): Newton hates Flamsteed, in spite of his position as Astronomer Royal.

ARBUTHNOT: Or because of it. Though hardly a justification to have the Astronomer Royal ejected from Fellowship of the Royal Society for late payment of fees. (*Pause*) And did you know that I demanded of Flamsteed that he deliver up his life's work... his lunar tables... to Newton?

LADY BRASENOSE: At her Majesty's command, no doubt...

ARBUTHNOT: After furious prompting by Newton.

LADY BRASENOSE: He used you.

ARBUTHNOT: As so many others. My wife is afraid of Newton's wrath... even at the cost of abandoning my honour.

LADY BRASENOSE: Your wife's concerns are colored by affection and practicality. Mine by morality and...curiosity.

ARBUTHNOT: Mere curiosity?

LADY BRASENOSE: Is that not sufficient... a lady's curiosity.

ARBUTHNOT: My lady, you're so much more than just a lady. Why did this matter concern you so deeply.

LADY BRASENOSE: (*A beat*) Do I have your confidence, Dr. Arbuthnot?

ARBUTHNOT: You may be sure of it Lady Brasenose.

LADY BRASENOSE (*Pause*): Newton wounded me once and ever since, I must confess, I have... disliked him... intensely.

ARBUTHNOT: I see.

LADY BRASENOSE: And you? After all, most men can deal with conflict... but the real test is how authority is deployed when all can see it.

ARBUTHNOT: Indeed.

LADY BRASENOSE: For Newton, your Committee was nothing but a collection of barkless watchdogs.

(Arbuthnot is silent.)

LADY BRASENOSE: But such dogs expect to be fed. And not all canines have the same appetite. For instance, Moivre is thankful for some scraps.

(Pause.)

Whereas.... you?

ARBUTHNOT (*After a moment's thought*): Whereas I think... this would be a fine subject for a morality play...

LADY BRASENOSE: You write for the theatre, Dr. Arbuthnot?

ARBUTHNOT: Not yet. But with the right partner?

(A moment of bonding between them.)

*(CIBBER enters the scene reading the last page of the script.
VANBRUGH follows.)*

CIBBER (*Reading*): "...But with the right partner?" (*Pause*). A puzzling last line.

VANBRUGH: Some day you'll understand.

CIBBER: If you say so. In any event, that's where I'd end the play. "CURTAIN. THE END."

(A pause.)

VANBRUGH: Well?

CIBBER: I have a question.

VANBRUGH: Certainly.

CIBBER: Who is the source for all of this?

VANBRUGH: I cannot say.

CIBBER: Ah. 'Tis a pity. Then I fear it will not be possible to produce this play at Drury Lane.

VANBRUGH: Oh?

CIBBER: Libel, John... the danger of libel. I shall need to know.

VANBRUGH: My source does not wish to be revealed.

CIBBER (*Beat, impishly*): Lady Brasenose, perhaps?

VANBRUGH: What makes you say that?

CIBBER: So it is Lady Brasenose. She appears in the play... a very mysterious creature... and privy to every false step or nefarious motive. A fascinating woman! May I meet her?

VANBRUGH: I have promised to protect the reputation of my source—

CIBBER: Yes, yes, of course. As you wish. Still, it's a shame. (*beat*). Well, with some tinkering here and there, we may yet have ourselves a play.

VANBRUGH: Good. Excellent. Thank you, Colley.

CIBBER: For what?

VANBRUGH: For taking a gamble.

CIBBER: Not at all. I'm a theatre manager. Gambling is my life. And what is life without risk?

VANBRUGH: So, I shall await your further instructions?

CIBBER: Yes... yes, leave it with me. As soon as I judge the time to be right, I will set the wheels in motion. Leave it with me.

VANBRUGH: Excellent.

CIBBER: Welcome back to the theatre, John. But...

VANBRUGH: Yes?

CIBBER: We cannot use your name.

VANBRUGH: True...

CIBBER: An anagram, perhaps?

VANBRUGH: You have one for "Vanbrugh"?

CIBBER: I do. *(He takes a deep bow).* "H... Van... Grub."

VANBRUGH: Sounds Dutch, Colley... but why not? *(Mock bow).* Your servant.
Mr. Cibber.

CIBBER: And I, Mr. Van Grub, am yours.

(Vanbrugh leaves. Cibber takes a drink. Leaves. We hear the sound of an audience in the theatre, perhaps mixed with a few lines from a play. Then it's over. Applause.)

END OF SCENE 8

Scene 9. *London 1731. Applause as CIBBER (offstage) gets into Newton's wig etc. The lights change – footlights and the curtain come down. CIBBER comes on and takes a deep bow to the applause. Then he hushes the audience for his epilogue speech.*

CIBBER: Thus have you seen the sorry consequence
When principles desert our men of sense.
And yet, our moral critics here will find
No greater vice than scandal - of the mind.
Since Lust is locked away in dusty attics,
While foppish wits brush up their mathematics;
When Lady Brasenose finds her salon dull;
And Sin, it seems, grows intellectual.
But pray you, gallants, think no wrong of us
For making sport with Newton's Calculus.
He stood on giant's shoulders; if I may,
I'll dare to stand up for our humble play;
And if, while we were striving for your pleasure,
Sir Isaac frowned – we shall repent at leisure.
Besides, in conscience, nothing should be said
Against the play, because the writer's dead.
Though H. Van Grub in life was known by few,
His immortality now rests with you.

He bows again to applause. With a theatrical sweep upstage he exits behind the curtain. A moment of applause. The quality of the sound changes to become muffled, and the lights change to Cibber's study. He reappears through the door in his costume. Closes the door. He gets a bottle from his desk and has a drink. Then he pulls back the curtain to reveal a portrait of Newton that has been placed on the wall behind the curtain. He offers a toast to the portrait.

CIBBER: To us... in fame... and infamy. Long may it—

He is interrupted by a knock at the door. He answers. At the door is a young actress in Lady Brasenose's dress from Scene 8. She is breathlessly excited.

ACTRESS: Colley!

CIBBER: My pet!

She rushes in, leaving the door open. They embrace. Clearly they're having an affair.

CIBBER: Quite promising a performance! (*Attempts a kiss, which she deflects, whereupon he continues*). In fact... rather good!

ACTRESS: Rather? (*beat*). Not very good? (*Quickly kisses him*).

CIBBER: Flirting with your fan with Monsieur Bonet in the salon scene...

He demonstrates what she did in the salon scene 4 to Bonet. She laughs.

ACTRESS: It wasn't too much?

CIBBER: No, no! Quite subtle!

ACTRESS: Oh, Colley—

They embrace. He throws his wig off with:

CIBBER: Wigs get in the way!

ACTRESS: Colley... I want more...

CIBBER: Then my pet, you shall have more!

He makes to unlace her dress.

ACTRESS (*Stops him*): More dialogue, Colley... more scenes... more in line with my talent—

CIBBER: I'm sure that can be arranged....

Proceeds to unlace her.

ACTRESS: You promise?

CIBBER: With a little persuasion...

ACTRESS: Oh, Colley!

She drops to her knees and starts loosening his breeches.

CIBBER: Lock the door, for God's sake...

ACTRESS (*Excited, ignoring that last remark*): Oh, Colley!

Too late. Cibber notices Arbuthnot standing in the open doorway. Seeing him, Cibber changes tack at once.

CIBBER: Hussey! Don't you know I'm married? Out! At once!

ACTRESS (*Taken aback*). Colley! But why?

CIBBER: Out I say, strumpet!

Cibber bundles the actress out of the door past Arbuthnot.

CIBBER (*Dismissive*): Those pressing actors! Please come in, sir.

Dr John Arbuthnot (now age 64, in poor health, suffering from gout and kidney stones from which he will die within 4 years) enters slowly and laboriously with the aid of a cane, while Cibber shuts the door on the actress.

CIBBER: A silly creature... she will not leave me alone.

ARBUTHNOT: Evidently.

CIBBER: And whom do I have the honor of—

ARBUTHNOT: My name is Arbuthnot, sir.

Cibber's expression drops.

CIBBER: Dr. Arbuthnot? I am, sir, your most humble, most obedient...

ARBUTHNOT: Never mind that, Mr Cibber. Why? Why? Why? (*beat*) Why?

CIBBER: Why what?

ARBUTHNOT: Why did I have to wait 6 years to witness this perversion—

(He indicates the portrait of Newton on the wall).

CIBBER (*Interrupts*): I take it you mean my performance?

ARBUTHNOT: Your performance was the least of it!

CIBBER: Thank you. So you saw it just now?

ARBUTHNOT: I did.

CIBBER: The sixth performance...and still a full house.

ARBUTHNOT: A mob flocking into the theatre sheds little light on a play's quality... or veracity.

CIBBER: Since when is veracity on stage judged a virtue?

ARBUTHNOT: When it is not used to hide distortion.

CIBBER: Ours was applauded... your play *Three Hours after Marriage* was hissed. Yours was virtually stillborn in 1717 and did not make it past the second performance. I know of no revival.

ARBUTHNOT: That is hitting below the belt.

CIBBER: Whose belt? John Gay's, Alexander Pope's or yours? (*Scornfully*). Requiring three cooks for a thin theatrical pudding... meant to contain wit but in the end not tasting of wit at all. (*Short sarcastic laugh*). Asking the actors to do a good job while burdened with a bad script... meaning they had to be good at being bad!

ARBUTHNOT: Much too clever... and thus not worth recapture. You're more likely to be remembered for your sharper pen than for your tongue.

CIBBER (*Prickly*): How so?

ARBUTHNOT: You had the audacity... some even called it impertinence... to adapt *Richard III*, but you added a line... "Off with his head... so much for Buckingham"... that I wager will be remembered longer than all the words you ever spoke on stage.

CIBBER: Is that a compliment or an affront?

ARBUTHNOT: The choice is yours! It is your play *Calculus* I wish to address... a true affront. Is a stage the place to wash dirty linen in public?

CIBBER: Where else do such laundry? The stage is the only place where nothing need be hidden.

ARBUTHNOT: You put Sir Isaac upon the stage and called him by his real name. A country requires heroes... unsullied ones. What purpose is served by showing that England's greatest natural philosopher is flawed... like other mortals?

CIBBER: Why not take him for what he was: a tainted hero. Inventor of the calculus? Yes! But also corruptor of a moral calculus. What about Leibniz... does he not deserve some defense?

ARBUTHNOT: Let that be the concern of the Germans.

CIBBER: Our Newton rests in Westminster Abbey under a hero's monument. But whatever their tomb, both continue to rot.

ARBUTHNOT: A medical or another moral judgment?

CIBBER (*Conciliatory*): As you are a doctor, let it be medical. We've wrangled enough.

ARBUTHNOT: And what was your hand in this?

CIBBER: Sir John created the setting, he chose the characters, he dug up the dirt and he spread it around. I only helped with broom and shovel... except for the very end. On his deathbed, Sir John asked me to complete the play... even offering me the epigraph: frango ut patefaciam.

ARBUTHNOT: "I break in order to reveal."

CIBBER: Your Latin is faultless. I acceded... with some reservation to finish the play.

ARBUTHNOT: You did not just finish the play, you played in it!

CIBBER: I'm an actor as well as writer.

ARBUTHNOT: A better actor than an author.

CIBBER (*Aside*): A judgment I've heard before. The play was meant as revenge... though revenge, like love, is rarely consummated by surrogates. Yet directing retribution at the arbiters of our mores suited me. Was I not also the object of their derision? (*Pause*) Kindness is not a virtue in a play... nor are playwrights kind.

ARBUTHNOT: What about fairness? This is England... we have laws about fairness. (*Pause*). Consider libel.

CIBBER: I did. When Sir John died, Newton was 84 and ailing. I thought I'd wait—

ARBUTHNOT: For Newton to die?

CIBBER: The dead cannot be libeled... even if illuminating human frailty were considered a ground for libel.

ARBUTHNOT: A legal opinion?

CIBBER: A logical one... in a country where the best laws often protect its worst people.... Vanburgh was right: deepest corruption... and thus vilest scandal... is intellectual... not sexual.

ARBUTHNOT: Yet the mirror you use in your play was our committee.

CIBBER: Well put, Dr. Arbuthnot!

ARBUTHNOT: And since I was on the Committee—

CIBBER: You were also in our play.

ARBUTHNOT: Hardly as a minor character! Are actors not supposed to show rather than tell? There were eleven members of that committee, but I'm the one you have doing most of the talking.

CIBBER: Is this a cause for complaint?

ARBUTHNOT: A major one... considering how you depict me. (*Angrily*). I'm still alive!

CIBBER: And brimful of vigor as you just demonstrated.

ARBUTHNOT: I'm in terrible health! I suffer deeply from mysterious fevers and a great stone in my right kidney... And now the gout! (*Grimacing, points to his foot with his cane*). I have buried six of my children and recently my wife.... and now find my reputation buried as well!

CIBBER (*Uncomfortable*): Please accept my condolences-

ARBUTHNOT: From you... who lashed me with a whip?

CIBBER: A moral whip... gently at that... and only in a play

ARBUTHNOT: And therefore worse... with exposure all too public and thus with pain that much greater. But was it justified? You think you've been so clever Mr. Cibber, but where did you learn the facts you purport to describe?

CIBBER: From Vanbrugh.

ARBUTHNOT: Aha! And he?

CIBBER: I suspect from Lady Brasenose. What we learn all leads to her...even the infamous anagram.

ARBUTHNOT (*Dismissive*): Oh yes... anagrams! (*Affected tone*). As in "Calculus: a Morality Play by H. Van Grub and Colley Cibber." (*Dismissive*). How utterly transparent!

CIBBER: Sir John had planned to use an alias, and I proposed he choose "H. Van Grub"... I thought it clever. After all, to "grub" is to dig... usually for dirt.

ARBUTHNOT: I'm all too familiar with that meaning, Mr Cibber. And where do you suppose Lady Brasenose got her information?

CIBBER: From various sources... for instance Bonet.

ARBUTHNOT: How do you know that Lady Brasenose had met Bonet?

CIBBER: Because...

ARBUTHNOT: Yes?

CIBBER: Because... (*Pause*)... because she said so.

ARBUTHNOT: You heard her say so?

CIBBER: Our paths have never crossed. She told Sir John.

ARBUTHNOT: He said so?

CIBBER: I assumed... because he so implied.

(*Pause.*)

CIBBER: Was my assumption wrong?

(*Arbuthnot gives nothing away.*)

CIBBER: Are you saying all Lady Brasenose knew about Bonet she learned from someone else?

ARBUTHNOT: Heavens, man! Are you obtuse as well as dissipated?

CIBBER: If I knew what you meant... I might be. But how then does Moivre fit into all this?

ARBUTHNOT (*Sarcastic*): What do we learn from him... in *Calculus*? That he was poor? Every Fellow of the Royal Society knew of his poverty... and those that could have helped him overcome it... didn't... not to this day.

CIBBER (*Even more defensive*): He spoke about fluxions... and calculus... and—

ARBUTHNOT (*Short sardonic laugh*): Mathematics? There is precious little about that in your *Calculus*... other than eating an apple. But why should there be? It is about two giants in their field.

CIBBER: And their moral calculus. By showing how even small incremental changes over time... call them fluxions in our behavior... lead to measurable conflicts between their minions: The traders of flattery... begetters of lies... spreaders of gossip... the toadies of this world... the Rosencrantz and Guildenstern characters... whom we actors know all too well... and find again in this play. When Sir John spoke of revenge... he meant revenge by shedding light upon such men and a society that fosters them.

ARBUTHNOT: I did not favor any of their conflicts. I prefer to resolve discord...

CIBBER: Even at great personal cost, it would seem.

ARBUTHNOT: Sometimes. I have come here to ask ... no, to insist... that you cancel all future performances of my play—

CIBBER (*Interrupts sharply*): I beg you to repeat your last remark.

ARBUTHNOT: I said... I insist on you canceling all future performances of—

CIBBER: "My play."

ARBUTHNOT: Indeed.

CIBBER: You said "my play."

ARBUTHNOT (*Irritably*): Yes, yes... your play.

CIBBER: You did not say "your play,"... meaning me. You said, "my play"... meaning you.

ARBUTHNOT: A slip of the tongue.

CIBBER: Was it?

ARBUTHNOT: What are you driving at, Mr. Cibber?

CIBBER: It was you! Wasn't it?

ARBUTHNOT: What was?

CIBBER: You provided Lady Brasenose with the clues, didn't you?

ARBUTHNOT: Why would I do that?

CIBBER: Revenge, perhaps?

ARBUTHNOT: No... certainly not revenge.

CIBBER: But it was you, wasn't it? (*Pause*). Or can you persuade me otherwise?

ARBUTHNOT: No one could have told anything to Lady Brasenose... because she never existed.

CIBBER (*Totally taken aback*): I beg your pardon?

ARBUTHNOT: Lady Brasenose is the product of pure invention.

CIBBER: What the plague? You mean Sir John created her?

ARBUTHNOT: He did... at my suggestion.

CIBBER: Yet never told me? Impossible! Sir John was a man of honor.

ARBUTHNOT: Of course. He gave me his word to protect my identity... and evidently stuck to his promise.

CIBBER: And thus lied to me?

ARBUTHNOT: He did not lie. He chose not to volunteer unasked information. Perhaps a sin of omission... but surely not commission of a lie.

CIBBER: But why did you approach Vanbrugh in the first place?

ARBUTHNOT: I once belonged to a writing club with such wits as Pope, Swift and Gay. We often ridiculed pretentious erudition and scholarly jargon. But Newton's and Leibniz's erudition was neither pretense nor their scholarly dispute jargon. Much of it was poison that demeaned them both. Ridicule was not a cure. I tried compromise and reason... yet in the end failed. And since all parties die at last of swallowing their own lies...

CIBBER: I seem to have read that somewhere.

ARBUTHNOT: It's from *The Art of Political Lying*... a book I wrote myself.

CIBBER: Self-quotation does not guarantee veracity.

ARBUTHNOT: Nor exclude it. I felt a serious message was indicated... a form of moral revenge. Why not a play... a morality play... but suitably disguised and libel-proof... to teach a lesson? I even chose the title. After all, everyone was calculating in one way or another... even the ones who knew no calculus.

CIBBER: But if you disapproved, why did you not write the play yourself?

ARBUTHNOT(*Sarcastic*): As Newton preached, though never practiced, "no man is a witness to his own cause." But was not Vanbrugh skilled in writing plays about real persons well disguised? I turned to him with a proposition: I would provide him ... step-by-step... with information... which he would then plot well... but also discreetly... into a play to teach a lesson... a moral lesson... not the libelous assault you produced.

CIBBER: And Sir John agreed?

ARBUTHNOT: With one condition. I would not see the text until the first performance.

CIBBER: And you agreed to that?

ARBUTHNOT: I did... I trusted his discretion as a gentleman and his good judgment as a playwright. Though I now regret having acceded to his demand for untrammelled authorship.

CIBBER: And my role in all this?

ARBUTHNOT: Unknown to me... until tonight.

CIBBER: I am dumbfounded.

ARBUTHNOT: And so was I... tonight when I sat in the audience. I expected a play that even Newton could have seen. Of course, not liked... but seen... because the author's subtlety would have prevented open accusations.

CIBBER: I thought, it was to teach a lesson.

ARBUTHNOT: Yes but morality plays should teach a lesson the accused can witness. I wanted to wound Newton without leaving a mark. But with your *Calculus*... to besmirch him permanently... you had to wait for his burial.

CIBBER: Sir John insisted on naming Newton.

ARBUTHNOT: Oh... Sir John insisted, did he? When I'd specifically asked that he not do so?

CIBBER (*Backtracks*): Well... perhaps not insist... but he did not object.

ARBUTHNOT: In spite of my insistence that Newton not appear in the play?

CIBBER: He never told me not to... because he never told me that you told him not to tell me—

ARBUTHNOT: Because I never knew of your participation—

CIBBER: Nor I of your involvement.
(*Silence.*)

CIBBER: He never told me how he wanted to end the play... and then he died.

ARBUTHNOT: And how did you expect it to end, Mr. Cibber? With the triumph of truth and justice over moral turpitude? I wanted somebody to write a play about the cost of destroying reputations... whereas (*sarcastic*)... "H. Van Grub" and you simply chose to destroy reputations... whatever the cost incurred. You could have changed it, Mr. Cibber. It was within your power. You could have changed everything.

CIBBER: I only wrote some of the words to fit the information openly disclosed to me. But if you dislike the role you played, you could have cast yourself as the hero.

ARBUTHNOT: There are no heroes in this play.

CIBBER (*Surprisingly kind voice*): Nor are you the villain. But none of us cast you as such. Not even you. The true fault rested elsewhere.

ARBUTHNOT: My wife went to her grave with the knowledge that her husband was not the man of unshakeable principle she took him for. Is that not enough for me to bear, without the public knowing it too?

CIBBER: Perhaps we all miscalculated.

ARBUTHNOT: Perhaps we did, Mr. Cibber... perhaps we did

CIBBER: Your servant, sir.

(*Arbuthnot painfully rises, leaning heavily on his cane and starts hobbling away*).

END OF PLAY

CARL DJERASSI, novelist, playwright and professor of chemistry emeritus at Stanford University, is one of the few American scientists to have been awarded both the National Medal of Science (for the first synthesis of an oral contraceptive) and the National Medal of Technology (for promoting new approaches to insect control). He has published short stories (*The Futurist and Other Stories*), poetry (*The Clock runs backward*) and five novels (*Cantor's Dilemma; The Bourbaki Gambit; Marx, deceased; Menachem's Seed; NO*)—that illustrate as "science-in-fiction" the human side of science and the personal conflicts faced by scientists—as well as an autobiography (*The Pill, Pygmy Chimps and Degas' Horse*) and a memoir (*THIS MAN'S PILL: Reflections on the 50th birthday of the Pill*).

During the past seven years he has focused on writing "science-in-theatre" plays. The first, *AN IMMACULATE MISCONCEPTION*, premiered at the 1998 Edinburgh Fringe Festival and was subsequently staged in London (New End Theatre in 1999 and Bridewell Theatre in 2002), San Francisco (Eureka), New York (Primary Stages), Vienna (Jugendstiltheater), Cologne (Theater am Tanzbrunnen), Munich (Deutsches Museum), Berlin (Gorki Theater), Sundsvall (Teater Västernorrland), Stockholm (Dramaten), Sofia (Satire Theatre), Geneva (Theatre du Grütli), Tokyo (Bunkyo Civic Hall Theatre), Seoul, Los Angeles (L.A. Theatre Works), and Lisbon (Teatro da Trindade) with a Singapore production (Singapore Repertory Theatre) scheduled for November 2004. The play has been translated into 10 languages and also published in book form in English, German, Spanish and Swedish. It was broadcast by BBC World Service in 2000 as "play of the week" and by the West German (WDR) and Swedish Radio in 2001 and NPR in the USA in May 2004.

His second play, *OXYGEN*, co-authored with Roald Hoffmann, premiered in April 2001 at the San Diego Repertory Theatre, at the Mainfranken Theater in Würzburg in September 2001 through April 2002 (with guest performances in 2001/2002 in Munich, Leverkusen and Halle), at the Riverside Studios in London in November 2001, and subsequently in New Zealand (Circa Theatre, Wellington), Korea (Pohang and Seoul), Tokyo (Setagaya Tram Theatre), Toronto, Madison, WI, Columbus, OH, Ottawa, Bologna (Italy), Bulgaria (Sofia Satire Theatre) as well as many other German and American venues. Both the BBC and the WDR broadcast the play in December 2001 around the centenary of the Nobel Prize—one of that play's main themes. It has so far been translated into 10 languages and has already appeared in book form in English, German, Spanish, Italian, French, Portuguese, Chinese, and Korean.

His third play, *CALCULUS*, dealing with the infamous Newton-Leibniz priority struggle, has had staged rehearsed readings in Berkeley (Aurora Theatre), London (Royal Institution), Vienna (Museum Quartier), Munich (Deutsches Museum), Berlin (Brandenburg Academy), Dresden (Semper Oper) and Oxford (Oxford Playhouse). A full production opened in San Francisco (Performing Arts Library and Museum) in April 2003, with a London premiere opening in the New End Theatre in July 2004. A music version (composed by Werner Schulze) will open in Zurich in May 2005. It has already appeared in book form in English as well as German. His first "non-scientific" play, "*EGO*," premiered at the 2003 Edinburgh Festival Fringe; its themes are further explored in "*THREE ON A COUCH*," which opened in London (King's Head Theatre) in March 2004. A German translation has already appeared in book form and has been broadcast by the WDR in June 2004.

Djerassi is the founder of the Djerassi Resident Artists Program near Woodside, California, which provides residencies and studio space for artists in the visual arts, literature, choreography and performing arts, and music. Nearly 1400 artists have passed through that program since its inception in 1982. Djerassi and his wife, the biographer Diane Middlebrook, live in San Francisco and London.

(There is a Web site about Carl Djerassi's writing at <http://www.djerassi.com>)