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OXYGEN

(A play in 20 scenes)

By Carl Djerassi and Roald Hoffmann

Carl Djerassi

Department of Chemistry
Stanford University
Stanford, CA 94305-5080

Tel. 650-723-2783
Fax: 415-474-1868
e-mail: djerassi@stanford.edu

URL: <http://www.djerassi.com>

1101 Green Street, Apt. 1501
San Francisco, CA 94109-2012
Tel: 415-474-1825; Fax: 415-474-1868

25 Warrington Crescent, Flat 3
London W9 1ED, United Kingdom
Tel. 44-20-7289-3081; Fax: 44-20-7289-5902

Roald Hoffmann

Department of Chemistry
Cornell University
Ithaca, NY 14853-1301

Tel: 607-255-3419;
Fax: 607-255-5707
e-mail: rh34@cornell.edu

Authors' Biographical Sketches

Carl Djerassi

Carl Djerassi, born in Vienna but educated in the US, is a writer and professor of chemistry at Stanford University. Author of over 1200 scientific publications and seven monographs, he is one of the few American scientists to have been awarded both the National Medal of Science (in 1973, for the first synthesis of a steroid oral contraceptive--"the Pill") and the National Medal of Technology (in 1991, for promoting new approaches to insect control). A member of the US National Academy of Sciences and the American Academy of Arts and Sciences as well as many foreign academies, Djerassi has received 19 honorary doctorates together with numerous other honors, such as the first Wolf Prize in Chemistry, the first Award for the Industrial Application of Science from the National Academy of Sciences, and the American Chemical Society's highest award, the Priestley Medal.

For the past 15 years, he has turned to fiction writing, mostly in the genre of "science-in-fiction," whereby he illustrates, in the guise of realistic fiction, the human side of scientists and the personal conflicts faced by scientists in their quest for scientific knowledge, personal recognition, and financial rewards. In addition to novels (*Cantor's Dilemma*; *The Bourbaki Gambit*; *Marx, deceased*; *Menachem's Seed*; *NO*), short stories (*The Futurist and Other Stories*), an autobiography (*The Pill, Pygmy Chimps, and Degas' Horse*) and a collection of memoirs (*This Man's Pill*), he embarked in 1997 on a "science-in-theatre" tetralogy in which the first play, "AN IMMACULATE MISCONCEPTION," focuses on the ethical issues associated with single sperm injection (the ICSI technique). Opening at the 1998 Edinburgh Fringe Festival, it was staged in 1999-2002 as a 2-act play in New York, London, San Francisco, Vermont, Vienna, Cologne, Sundsvall, Stockholm, Sofia, and Geneva and broadcast by the BBC and the West German and Swedish Radio. His third play, "CALCULUS," is currently under development. He is also 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. Over 1200 artists have passed through that program since its inception in 1982.

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

Roald Hoffmann

Roald Hoffmann, born in Zloczow, Poland but educated in the US, is the Frank H. T. Rhodes Professor of Humane Letters at Cornell University. One of America's most distinguished chemists, he was awarded the Nobel Prize in Chemistry. A member of the US National Academy of Sciences and the American Academy of Arts and Sciences as well as many foreign academies, Hoffmann has received 26 honorary doctorates together with numerous other honors such as the National Medal of Science. Hoffmann is the only person ever to receive the American Chemical Society's top awards in three subdisciplines: organic chemistry, inorganic chemistry, and chemical education.

For the past dozen years, Hoffmann has simultaneously pursued a literary career. He is the author of three books of poetry, "The Metamict State" (1987), "Gaps and Verges" (1990), and "Memory Effects" (1999). His three non-fiction books deal with the overall theme of the creative and humanistic sparks of chemistry: An art/science/literature collaboration with artist Vivian Torrence, "Chemistry Imagined" (1993); "The Same and Not the Same" (1995); and "Old Wine, New Flasks: Reflections on Science and Jewish Tradition," in collaboration with Shira Leibowitz Schmidt. Hoffmann is also the presenter of a television course, "The World of Chemistry", which has aired on many PBS stations and abroad.

(Web site: www.roaldhoffmann.com)

Cast of Characters

Stockholm, 1777

ANTOINE LAURENT LAVOISIER, 34 years old. (French chemist, tax collector, economist, and public servant; discovered oxygen).

MARIE ANNE PIERRETTE PAULZE LAVOISIER, 19 years old. (Wife of the above).

JOSEPH PRIESTLEY, 44 years old. (English minister and chemist; discovered oxygen).

MARY PRIESTLEY, 35 years old. (Wife of the above).

CARL WILHELM SCHEELE, 35 years old. (Swedish apothecary; discovered oxygen).

SARA MARGARETHA POHL (FRU POHL), 26 years old. (*Became MRS. SCHEELE three days prior to Carl Wilhelm's death.*)

COURT HERALD (*off-stage male voice*).

Stockholm, 2001

Prof. BENGT HJALMARSSON, member of the Chemistry Nobel Prize Committee of the Royal Swedish Academy of Sciences. (*Same actor as ANTOINE LAVOISIER*).

Prof. SUNE KALLSTENIUS, member of the Chemistry Nobel Prize Committee of the Royal Swedish Academy of Sciences. (*Same actor as CARL WILHELM SCHEELE*).

Prof. ASTRID ROSENQVIST, chair of the Chemistry Nobel Prize Committee of the Royal Swedish Academy of Sciences. (*Same actress as MRS. PRIESTLEY*).

Prof. ULF SVANHOLM, member of the Chemistry Nobel Prize Committee of the Royal Swedish Academy of Sciences. (*Same actor as JOSEPH PRIESTLEY*).

ULLA ZORN, a graduate student in the History of Science and amanuensis to the Chemistry Nobel Prize Committee. (*Same actress as FRU POHL*).

Technical Details

The staging can be sparse (*sauna bench; conference table; laboratory demonstration table*). All audiovisuals, provided by the authors, are to be projected on a large screen, preferably by rearward projection. To provide for rapid alternating costume changes between 1777 and 2001, the 1777 dress code should be distinctive yet simple (e.g. use of wigs, long coats with easily attachable ruffled collars for men; distinctive (buckled) shoes; wigs, mobcaps, scarves, long dresses for women, etc).

Expanded description of 1777 Cast of Characters

ANTOINE LAURENT LAVOISIER, 34 years old. (French chemist, tax collector, economist, public servant, and debunker of mesmerism. Lavoisier was wealthy and self-assured—certain that he was constructing the proper framework for all of chemistry).

MARIE ANNE PIERRETTE PAULZE LAVOISIER, 19 years old. (Born and married into wealth, Mme. Lavoisier was educated to help her husband in his scientific and public endeavors. On one 1794 day she lost her husband and father to the guillotine of the Jacobin terror. She recovered, with effort, his estate, published his science, and in a second, most unhappy marriage was united briefly with an American-British-Bavarian scientist and adventurer, Count Rumford.)

JOSEPH PRIESTLEY, 44 years old. (English minister, political activist, and chemist. Priestley was one of the founders of the Unitarian church, a dissenter in religion and in politics. After teaching at several dissenter academies, he entered the service of Lord Shelburne. Eventually his radical political views led to a mob assault on his home; Priestley fled to the US, where he lived out his life in Northumberland, PA, defending the phlogiston theory to his death. Priestley discovered several gases, including oxygen, nitrous oxide, and carbon monoxide; he also perfected a popular machine for carbonating water.)

MARY PRIESTLEY, 35 years old. (Daughter of the well-know ironmonger John Wilkinson and sister of one of Priestley's students, she married the young minister in 1762 and partook in his academic and religious life. Mary Priestley is said to have written beautiful letters, but none survived the Birmingham fire in which Priestley's laboratory and home were sacked. In 1794 with the help of Benjamin Franklin, the couple and their children settled in America).

CARL WILHELM SCHEELE, 35 years old. (Swedish apothecary, born in a German family in Stralsund, Pomerania, then Swedish. He was early apprenticed to an apothecary, and pursued that calling all his life. A dedicated and skillful experimentalist, he discovered not only oxygen, but chlorine, manganese, hydrofluoric acid, hydrogen sulfide, oxalic and citric acids, and many organic molecules. Scheele also invented a very good green paint containing arsenic that may have contributed to Napoleon's demise. Scheele's dearest wish was to own his own pharmacy and toward the end of his brief life, he achieved that aim in provincial Köping).

SARA MARGARETHA POHL (FRU POHL), 26 years old. (Became MRS. SCHEELE three days prior to Carl Wilhelm's death. Prior to that she had been married to a German pharmacist, Hindrich Pascher Pohl, the father of her only child (who died at 14). The Köping pharmacy eventually was sold to Scheele, and Fru Pohl became his housekeeper. After Scheele's death in 1786, his widow sent some documents to the Royal Swedish Academy of Sciences, among them the draft of Scheele's letter to Lavoisier. She wrote that she gave Scheele the most respectable funeral that Köping had ever seen. She then married a third German pharmacist).

Scene 1. (*Sauna in Stockholm, Sweden, 1777*). The three women sit on a sauna bench or stools, their bodies covered to various extents by bathing towels or appropriate apparel—Mrs. Priestley most decorously and Mme. Lavoisier most daringly. Each is wearing a different, typically 18th century, mobcap to cover her hair or wig.

MME. LAVOISIER

(*Dreamily*)

I have never been beaten before... not like that. *Encore!*

MRS. PRIESTLEY

Madame Lavoisier! In England the birch is used for chastisement.

MME. LAVOISIER

We have a young nobleman in the South of our country, the Marquis de Sade...

FRU POHL

Ladies! The secret of sauna is moderation. In Sweden we use the birch to bring blood to the surface. So much better than leeches.

The towel slips off Mrs. Priestley's shoulder and Mme Lavoisier observes her unease as Mrs. Priestley quickly pulls it up.

MRS. PRIESTLEY

The immodesty of the sauna disquiets me

MME. LAVOISIER

(*Deliberately lowers her towel while addressing Mrs. Priestley*)

Mrs. Priestley... You are among women. (*Aside*)... Now, were there men here...

MRS. PRIESTLEY

You are young, Madame!

MME. LAVOISIER

Nineteen!

FRU POHL

I was twenty before I married.

MRS. PRIESTLEY

So was I. (*Turns to Fru Pohl*). How many children do you have?

FRU POHL

A young son. And you?

MRS. PRIESTLEY

Three sons and a daughter. (*Turns to Mme. Lavoisier*). And you, Madame?

None. MME. LAVOISIER

I presume you married only recently MRS. PRIESTLEY

Six years ago. MME. LAVOISIER

That is young. MRS. PRIESTLEY

And no children? FRU POHL

None! MME. LAVOISIER
(*Firmly*)

After six years? My Sarah, was born when we'd been married but ten months. MRS. PRIESTLEY

Chacun à son goût. MME. LAVOISIER
(*Flat*)

So you think it was a matter of taste, I took it as an obligation when I married. (*A touch of sarcasm*) But then, of course, I was not a child. MRS. PRIESTLEY

Perhaps women mature faster in France...especially in convent schools. MME. LAVOISIER

A convent? MRS. PRIESTLEY

Not to become a nun. I was twelve and even studied chemistry... "Butter of arsenic"... "Sugar of lead"... "Flowers of zinc." "How charming," I thought, "first chemistry in the kitchen, then chemistry in the garden." MME. LAVOISIER

A child of twelve would find it charming. MRS. PRIESTLEY

MME. LAVOISIER

But at thirteen my mother died and I left the convent to serve as my father's hostess. I escaped the attentions of a Count—much older than my father—by marrying Monsieur Lavoisier. He is active in the Tax Collection Agency and also heads the Discount Bank.

MRS. PRIESTLEY

A tax collector? A banker?

MME. LAVOISIER

(Amused)

And a lawyer at twenty-one!

FRU POHL

Yet your husband was invited to Sweden because of his chemical discoveries?

MME. LAVOISIER

So was Mme. Priestley's husband. He is a priest, is he not?

MRS. PRIESTLEY

No priests, if you please! A Minister. We are Unitarians, Madame.

(Suddenly agitated)

The Church of England opposes our beliefs. Our sons cannot go to Oxford or Cambridge. We cannot hold government office. Of course, when you marry a man of God, you know you will find riches greater than money. *(Catches herself)*. I beg your pardon... I was carried away.

MME. LAVOISIER

When I spoke about the chemistry I learned in the convent, my husband told me something very useful. "The product of science is knowledge... but the product of scientists is reputation." *(Pause)*. Reputation is important to him... and when I married him, it also became important to me. *(Pause)*. Especially when he asked me to assist him in his work.

FRU POHL

He asked you that... at age thirteen?

MME. LAVOISIER

Bien sûr.

MRS. PRIESTLEY

It seems so very young.

MME. LAVOISIER

There was chemistry to study... art too.... I took lessons with Jacques-Louis David.... I also learned Latin and English... all to help my husband. (*She muses*). Each day in the laboratory, I make a list of what experiments are to be done. Antoine calls out the numbers, I write them down. I draw the plates for his books... I etch them....

MRS. PRIESTLEY

(*Suddenly compassionate*)

Oh... is that why you have no children?

MME. LAVOISIER

(*Ignores the comment*)

Mrs. Priestley, I translated Dr. Priestley's *Experiments on Different Kinds of Airs*...

MRS. PRIESTLEY

You did?

MME. LAVOISIER

And his writings on phlogiston—

MRS. PRIESTLEY

(*Quickly interrupts*)

The principle of fire... an explanation for all chemistry.

MME. LAVOISIER

His explanation.

MRS. PRIESTLEY

What do you mean?

MME. LAVOISIER

We are not convinced—

MRS. PRIESTLEY

We?

MME. LAVOISIER

My husband is not convinced. Therefore, I am not convinced.

FRU POHL

Herr Scheele is convinced. He says so in his book...

MME. LAVOISIER

(*Shocked*)

What book?

FRU POHL

On the chemistry of air and fire. The only book he has written

MME. LAVOISIER

My husband never mentioned it.

FRU POHL

It will be published soon... perhaps while you are still in Stockholm.

MME. LAVOISIER

(Relieved)

So this is your husband's newest work?

FRU POHL

Apothecary Scheele is not my husband...

(Mme. Lavoisier and Mrs. Priestley exchange surprised glances, which Fru Pohl notices).

Herr Pohl was an apothecary. And the father of my son. But he's dead.

MRS. PRIESTLEY

(Unable to restrain her curiosity)

And Mr. Scheele? A relative?

FRU POHL

He took over my husband's pharmacy... in Köping, a small town some thirty leagues west of Stockholm. *(Defiantly)*. I keep house for him.

MME. LAVOISIER

So you assist Monsieur Scheele?

FRU POHL

Not in the laboratory.

MME. LAVOISIER

Yet you know of his new book?

FRU POHL

When Carl Wilhelm *(catches herself)*... I mean Apothecary Scheele... arrived in our little town three years ago, he related his work on airs to my father and me. He was so excited about it.

MME. LAVOISIER

(Taken aback)

And when was that work done?

FRU POHL

Some years earlier, I'm sure. The book tells it all...

MME. LAVOISIER

Are its contents known to anyone?

FRU POHL

But of course... to your husband. (*Pause*). Did Herr Scheele not send three years ago a letter to Paris describing his experiment with Fire Air?

MME. LAVOISIER

I know of no correspondence between them.

FRU POHL

He did wonder why your husband never thanked him.

MME. LAVOISIER

(*Agitated*)

He had nothing to thank him for!

MRS. PRIESTLEY

Ladies! Perhaps we should cool off.

FRU POHL

You are right. Tomorrow his Majesty will decide who was first.

MME. LAVOISIER

That is not why we came!

MRS. PRIESTLEY

So what did bring you here?

MME. LAVOISIER

To show the world what M.Lavoisier has discovered.

MRS. PRIESTLEY

But it was Dr Priestley who first made that discovery!

MME. LAVOISIER

I'm afraid we shall have to disagree, my dear Madame Priestley.

FRU POHL

(*Rises, stretches out hand to Mme. Lavoisier*)

Come. You have sweated enough. Mrs. Priestley's birch is waiting.

(Mme. Lavoisier angrily refuses Fru Pohl's hand and remains as Mrs. Priestley and Fru Pohl exit)

MME. LAVOISIER

(Mimics Fru Pohl's voice and intonation)

"And no children?"

(Resumes normal voice and accent)

What gives Fru Pohl the right to ask? Not even married to Apothecary Scheele! *(Pause)*. So I helped Antoine in the laboratory as in the salon. Three years ago, I nearly had a child... but lost it. But when Antoine reasoned out how we breathe... how sulfur burns... how to make better gunpowder... children never again entered his mind. Instead he spoke to men. To Monsieur Monge... to Monsieur Laplace... to Monsieur Turgot. But not to me. Yet I helped Antoine in ways he doesn't know about... and never will. *(Pause)* I must be careful with Mme. Priestley... and now, I see, also with Mme. Pohl. We did not come to Stockholm to make mistakes. So... we shall talk women's talk. About our husbands, of course. How good they are. How we help them. *(Pause)*. Wearing the woman's mask... the husband's face on it... smiling politely. *(Pause)*. But will the men go on smiling when their discoveries are disputed? *(Pause)* Will we?

(Collecting herself as if from a daydream, more forcefully).

Mme. Pohl knows of the letter. *(Pause)*. I am afraid.

BLACKOUT

Scene 2. (*Conference room at Royal Swedish Academy of Sciences, Stockholm, summer 2001. Lights focus on two members of Nobel Committee for Chemistry, Professors BENGT HJALMARSSON and SUNE KALLSTENIUS, who are on stage in private conversation. Later on, the third member, Professor ULF SVANHOLM, joins them.*)

SUNE KALLSTENIUS

A Retro-Nobel for work done before 1901. What a way of celebrating the centenary of the Nobel Prizes...

BENGT HJALMARSSON

At least the losers won't be able to hold it against us.

SUNE KALLSTENIUS

It's different I suppose... recognizing dead people.

BENGT HJALMARSSON

It's still too much work.

SUNE KALLSTENIUS

You always complain about the time spent on Nobel Committee business. Most Swedes would be proud to pay the price.

BENGT HJALMARSSON

You pay. I'm tired of paying it. My work suffers.

SUNE KALLSTENIUS

So resign.

BENGT HJALMARSSON

(Grins)

Not a chance. I like the power... and the gossip. But choosing a dead winner? They don't even re-pay favors.

SUNE KALLSTENIUS

You don't mean that?

BENGT HJALMARSSON

I'm just being honest.

SUNE KALLSTENIUS

Honesty has its place... but this isn't it!

(Ulf Svanholm, entering, overhears this)

ULF SVANHOLM

I'm surprised to hear that from you... of all people.

SUNE KALLSTENIUS
(*Sharply*)

You would say that!

BENGT HJALMARSSON
(*Pensive*)

With Astrid as chairman of a Nobel committee... it could be interesting.

ULF SVANHOLM
She prefers to be called "chairperson."

BENGT HJALMARSSON
We've never had a woman before.

ULF SVANHOLM
She deserves it; a damned good theoretician.

SUNE KALLSTENIUS
In my experience theoreticians make lousy chairmen.

BENGT HJALMARSSON
I wouldn't generalize when it comes to Astrid. Besides, she always gets her way.

ULF SVANHOLM
Which you know from personal experience of course.

BENGT HJALMARSSON
That was a lifetime ago. Well... eighteen years. (*Pause*). Here she comes with her shadow... that mysterious Ulla Zorn.

Professor ASTRID ROSENQVIST, chair of the committee, and ULLA ZORN, approach in almost whispered conversation.

ULLA ZORN
Astrid, have you told them about me?

ASTRID ROSENQVIST
Not yet, Ulla.

ULLA ZORN
They must be wondering—

ASTRID ROSENQVIST
I'm sure they are. Nobel Committee secretaries are usually older.

ULLA ZORN

And aren't they expecting a chemist for secretary?

ASTRID ROSENQVIST

That's why you are called an amanuensis.

ULLA ZORN

Why not tell them what I do? It's no secret—

ASTRID ROSENQVIST

All in good time... trust me. Good morning, gentlemen.

(She looks at her watch, approaches men, addresses Bengt Hjalmarsson) You're early—

BENGT HJALMARSSON

No, we're punctual... like all Swedes.

ASTRID ROSENQVIST

(Smiling, but sharp edge)

You haven't changed, Bengt.

BENGT HJALMARSSON

(Mimicking innocence)

No? Just a little, surely.

ASTRID ROSENQVIST

(To rest of group)

You've all met Ulla Zorn? Shall we get to work.

(Committee members sit, with ULLA ZORN, laptop computer in front of her, sitting somewhat separately on one side).

ASTRID ROSENQVIST

We're here to decide on the first retro-Nobel Prize award for work done before 1901. I assume you have all the relevant papers.

SUNE KALLSTENIUS

(Addresses Astrid Rosenqvist)

A procedural question: why are there only four of us? We've never had fewer than five members. You have no deadlocks with an odd-numbered committee.

ULF SVANHOLM

Trust Sune... always complaining.

ASTRID ROSENQVIST

It was my decision. *(Pause)* Any *other* questions?

BENGT HJALMARSSON

So our choices are restricted to the 19th century or earlier!

SUNE KALLSTENIUS

At least we have fewer Americans. In fact, only one: Willard Gibbs. What's chemistry without thermodynamics?

ULF SVANHOLM

Not an American again! Please! (*Pause*). The choice is obvious. (*Slow and forceful*). Dimitri... Ivanovitch... Mendelejev. Can you imagine chemistry without the Periodic Table? It's our Rosetta Stone.

BENGT HJALMARSSON

What about Louis Pasteur?

(*Speaks slowly and pompously*)

"The Prizes should be distributed to those who have conferred the greatest benefit on Mankind."

(*Reverts to ordinary tone*)

That's what it says in Alfred Nobel's Will. (*Pause*). If you stop people on the street with the question, "Who has conferred the greatest benefit on Mankind? Gibbs? Mendelejev? Or Pasteur?" They'll say, "Gibbs? Never heard of him! Mendelejev? Spell it!" Everyone knows Pasteur.

ULF SVANHOLM

But we aren't people on the street!

(*Suddenly notices Ulla Zorn furiously typing on her keyboard*)

Wait a moment!

(*Points to Ulla Zorn*)

Is this part of the formal meeting?

ASTRID ROSENQVIST

We aren't just the usual Nobel committee preparing our recommendation to the Academy on who should win the prize. This time, we're also generating the short list. We need a record to show that it was all above board.

BENGT HJALMARSSON.

I'm still amazed we were asked to do both.

ASTRID ROSENQVIST

(*Taps on the table*)

Back to business. We have Gibbs, Mendelejev, Pasteur. (*Pause*). What other names would you like to throw into the pot?

ULF SVANHOLM

Why not a Swede for the first one? When it came to the regular Nobel Prizes, the Academy waited until 1903 before giving it to Arrhenius.

ASTRID ROSENQVIST

He can't just be Swedish! He also has to deserve it.

BENGT HJALMARSSON

If you want a Swede how about Carl Wilhelm Scheele... for the discovery of oxygen—

ULF SVANHOLM

Start with the 18th century? Why not earlier?

SUNE KALLSTENIUS

(Cynical, pointing to Ulf)

He probably wants to give it to alchemists... maybe even Paracelsus!

BENGT HJALMARSSON

The 18th century may not be a bad idea. People published less... so we have less to read.

ULF SVANHOLM

But if we select Scheele, what about Antoine Laurent Lavoisier?

SUNE KALLSTENIUS

Or Joseph Priestley?

BENGT HJALMARSSON

Right back to the usual Nobel quandary! Too many candidates.

SUNE KALLSTENIUS

How about John Dalton, the father of the atomic theory?

ULF SVANHOLM

Nonsense! Oxygen had to be discovered first. Maybe for the second or third retro Nobel.

ASTRID ROSENQVIST

Ulf has a point. Oxygen started the chemical revolution... from it came a science... quantitative measurements... the real elements in place

SUNE KALLSTENIUS

Absolutely. Everybody else... Dalton, Gibbs, Mendeleev... and all the Nobel Prizes in Chemistry since 1901 followed from that.

BENGT HJALMARSSON

It's amazing to think that before the chemical revolution, people were convinced that when things burned, something was released...

(Turns to ZORN)

It was called phlogiston. *(Pause)*. Do you want me to spell that?

ULLA ZORN

(Quick and dismissive, without looking up while typing quickly)

P...H...L...O...G...I...S...T...O...N.

BENGT HJALMARSSON

(Exaggerated sarcasm)

Very good!

ASTRID ROSENQVIST

Just a minute, Bengt! These days, even many chemists won't have the slightest idea what phlogiston means. You'll have to explain it. Clear and pithy, please.

BENGT HJALMARSSON

"Phlogiston: The essence of fire." How's that?

ASTRID ROSENQVIST

Too pithy.

BENGT HJALMARSSON

You certainly aren't easy to please... today.

ULF SVANHOLM

But why even bother with a discarded theory?

SUNE KALLSTENIUS

It's not as stupid as it sounds. It made sense in its own way that when anything burns, something, phlogiston....leaves—poof—and goes out into the air.

ASTRID ROSENQVIST

Nice theory. But they were dead wrong. To move forward, scientists had to look at it exactly the other way around to arrive at the simple but blinding understanding that during the process something is taken from the air.

BENGT HJALMARSSON

And that something is oxygen. And realizing that it was part of the air... and not all of it... may seem obvious today, but then... in a time of revolutions...it was a revolutionary insight.

ASTRID ROSENQVIST

Yes, but we have to be careful, because Priestley and our Swedish hero Scheele believed in phlogiston till they died.

BENGT HJALMARSSON

So they fell for the chemical Grand Unified theory of the time. But Lavoisier had the sense to pour scorn on phlogiston.

ULF SVANHOLM

Typically French! Pouring scorn is their national sport.

BENGT HJALMARSSON

But this time scorn was justified. Consider what its proponents claimed about phlogiston... that sometimes it had weight; at other times it was weightless. Or (*speeds up*) that the stuff could be caustic or not... transparent or opaque... colored or colorless...in other words, that it could account for anything.

SUNE KALLSTENIUS

And your point is?

BENGT HJALMARSSON

The language of chemistry was a holy mess and the grammar all wrong. Until Lavoisier got it right.

ASTRID ROSENQVIST

We need to be sure about our facts.

SUNE KALLSTENIUS

We may have to turn to historians.

(Ulla Zorn looks up).

I'm joking.

ASTRID ROSENQVIST

Is there anything wrong with history?

SUNE KALLSTENIUS

It's a thing scientists do when they can't do science anymore.

BENGT HJALMARSSON

What would historians know about science? You might as well search the web!

ASTRID ROSENQVIST

(Looks at Ulla Zorn, but decides not to pursue her defense of historians)

I wonder whether Scheele, Lavoisier, and Priestley ever met in one place.

ULLA ZORN

Very unlikely.

BENGT HJALMARSSON

What makes you say that?

ULLA ZORN

Absence of any historical evidence.

BENGT HJALMARSSON

But how would you know—

ASTRID ROSENQVIST
(*Quickly cuts off further question*)

Think of the royal competitions held all over Europe at that time. Scientists of the time needed patronage just as much as we need research grants today. What if they met here, in Stockholm? Gustav the Third was wild about science and the arts.

ULF SVANHOLM
(*Bantering*)

Dream on! And how would they've talked to each other... speaking different languages?

ASTRID ROSENQVIST
(*Returns banter*)

Who worries about language in dreams?

BENGT HJALMARSSON

Herr Professor Doctor Sigmund Freud.

SUNE KALLSTENIUS

Maybe that's why he never got a Nobel Prize.

ULF SVANHOLM

Sune is always worried about missing out on prizes.

SUNE KALLSTENIUS
(*to Ulf*)

You never were even close to one!

ASTRID ROSENQVIST
(*Dismissive*)

Look you two, it's time to bury the hatchet. (*Pause*). Do you think they were as ambitious as their modern successors? I wonder who could have told us?

ULF SVANHOLM

The obvious witnesses: other scientists of their time.

ULLA ZORN

Or their wives.

SUNE KALLSTENIUS

I beg your pardon?

C. Djerassi & R. Hoffmann, "Oxygen (Oxygen-15 version)

ULLA ZORN

Or their wives. (*Pause*). Most men around that time had wives. What did they have to say?

END OF SCENE

Scene 3. *Stockholm, 1777, same day as Scene 1, a few hours later). All the couples are taking a walk (perhaps around the Palace grounds). They are all aware of each other, both wanting to eavesdrop and not to be heard themselves.*

MME. LAVOISIER and LAVOISIER begin speaking first.

Antoine, beware! MME. LAVOISIER

Of what? LAVOISIER

A challenge. MME. LAVOISIER

An experiment? LAVOISIER

A book. MME. LAVOISIER

From Priestley? LAVOISIER

No, Scheele. MME. LAVOISIER

Scheele? LAVOISIER

Indeed. MME. LAVOISIER

He's a good chemist. LAVOISIER

And careful. MME. LAVOISIER

I trust him. LAVOISIER

MR. and MRS. PRIESTLEY.

It's so beautiful here. MRS PRIESTLEY

The Lord has blessed us. PRIESTLEY

But Joseph, take heed! MRS. PRIESTLEY

Of what? PRIESTLEY

An experiment. MRS. PRIESTLEY

Mine works. PRIESTLEY

It may have been done. MRS. PRIESTLEY

By whom? PRIESTLEY

Scheele. MRS. PRIESTLEY

What can he have? PRIESTLEY

Something from the past. MRS. PRIESTLEY

He needs something new. PRIESTLEY

He questions... MRS. PRIESTLEY

I trust him. PRIESTLEY

FRU POHL AND SCHEELE.

I told her. FRU POHL

And? SCHEELE

She denied it. FRU POHL

He withheld it from her. SCHEELE

I doubt it. FRU POHL

Why? SCHEELE

She keeps his correspondence. FRU POHL

I didn't know that. SCHEELE

But she was most curious. FRU POHL

And? SCHEELE

She will tell her husband. FRU POHL

I do not trust him. SCHEELE

BLACKOUT

END OF SCENE

Scene 4. *Stockholm, 2001. Coffee break in the Committee Room. Bengt sits reading a scientific journal. Ulf joins him. The others wander in and out of the room, and relax.*

BENGT HJALMARSSON

"Bury the hatchet." What was Astrid talking about?

ULF SVANHOLM

You don't know? Of course, Sune will deny it.

BENGT HJALMARSSON

(Impatiently)

Deny what?

ULF SVANHOLM

You remember the Stanford group's paper on new catalysts for oxygenated polymers?

BENGT HJALMARSSON

(Dismissive)

Something about it. You had some similar catalysts up your sleeve? Right?

ULF SVANHOLM

Identical. Except that the American paper came out several months earlier... and they won the Gibbs Medal for that work... thanks to *(heavy sarcasm)* our distinguished colleague, Professor Kallstenius! I bet that's why he proposed Willard Gibbs for the retro-Nobel... just to rub it in.

BENGT HJALMARSSON

I don't get it.

ULF SVANHOLM

When I wrote up our work and sent it to the journal, Sune got it for review and he sat on it for two months before refereeing it.

BENGT HJALMARSSON

(Dismissive)

Par for the course.

ULF SVANHOLM

And then he decided I couldn't just publish the synthesis.

BENGT HJALMARSSON

What do you mean?

ULF SVANHOLM

He said... "that's not science, just taking one thing after the other off the shelf and trying it." When no one had made that one before! He said I had to figure out how that catalyst worked... not only that it worked. I wasted another half year on that wild goose chase. Meanwhile he told his Stanford pals in California all about it... and they scooped us.

BENGT HJALMARSSON
(*Turns serious*)

Are you sure?

ULF SVANHOLM

Who else could have told them? He knows them all too well.

BENGT HJALMARSSON

Why couldn't they have found it by themselves? Simultaneous discovery. It happens often enough.

ULF SVANHOLM

Nonsense! He told them.

BENGT HJALMARSSON

Ulf... you're obsessed. Let it go.

ULF SVANHOLM

You know as well as I that—most of the time, we're in a race where being first counts for everything. If you're second, you might as well be last.

BENGT HJALMARSSON

Is that all there is to it?

ULF SVANHOLM

How about all the money they' must've made off the patent?

BENGT HJALMARSSON

I wouldn't blame Sune. He's too honest... you just have to look at his face.

ULF SVANHOLM

We all wear masks.

END OF SCENE

Scene 5. (*Stockholm, 2001; Royal Swedish Academy of Sciences, one week later.*)

ASTRID ROSENQVIST

First to the discovery. No one will question that oxygen confers great benefit on mankind, right?

BENGT HJALMARSSON

Oxygen was good for people before it was "discovered!"

ULF SVANHOLM

But we've got to make it clear to the public that there are plenty of practical reasons why we need pure oxygen.

SUNE KALLSTENIUS

We didn't pick oxygen for its value to mountain climbers or astronauts or sick people.

ULF SVANHOLM

There you go. Anything useful, and the professor says "Who cares!"

ASTRID ROSENQVIST

Please... you two... we have to move on. (*Pause*). We're agreed on oxygen, right?
(*People nod*)

I now propose that each of you take the primary responsibility for digging up the evidence for the claims of one of the candidates. Who is fluent in French?

BENGT HJALMARSSON

Il n'y a pas de doute que c'est moi! I didn't spend two years as a postdoc at the Pasteur Institute speaking Swedish.

SUNE KALLSTENIUS

Try me in Greek or Latin. Or German....

ASTRID ROSENQVIST

(*Addresses Svanholm*)

And you, Ulf?

ULF SVANHOLM

(*Slightly embarrassed*)

Comme ci, comme ça... usual high school French.

SUNE KALLSTENIUS

That's obvious.

ASTRID ROSENQVIST

The Lavoisier archives are mostly in France and, of course, written in French. Lavoisier is your man, Bengt.

(Turns to Kallstenius)

You know Scheele wrote mostly in German... and some peculiar Latin? I suggest you take Scheele...

(Turns to Svanholm)

which leaves you with Priestley. OK?

ULF SVANHOLM

Are you offering me a choice?

ASTRID ROSENQVIST

I'm offering you a candidate. But if you're unhappy, you and Sune can collaborate on both men.

ULF SVANHOLM

Thanks... but no, thanks! I'll take Priestley.

BENGT HJALMARSSON

(Looks at watch and starts to get up)

Is that it for today?

ASTRID ROSENQVIST

No. There's one issue that requires digging into the archives.

SUNE KALLSTENIUS

And what's that?

ASTRID ROSENQVIST

Scheele's letter to Lavoisier... in which he outlined his own experiments with oxygen. What he called *Feuerluft*. We need to establish whether Lavoisier got that letter and if so, when.

ULF SVANHOLM

Back to the Nobel syndrome: who did what first?

ASTRID ROSENQVIST

And did the one who did it first really know what he'd done?

ULF SVANHOLM

Why does it matter?

ASTRID ROSENQVIST

I'm a theoretician. For me it's necessary to understand what one finds. Maybe for you it matters less. (*Pause*). You're an experimentalist... you actually get your hands dirty—

ULF SVANHOLM

Now it's my students' hands.

BENGT HJALMARSSON

So it's dirt we're looking for?

ULF SVANHOLM

I just wonder which kind we'll find... dirt from honest labor or the other sort?

BENGT HJALMARSSON

And where do we look?

ULLA ZORN

(*Looks up from her PC*)

The wives. (*Pause*). That's where I would look. Aren't they usually expected to clean up the dirt?

END OF SCENE

Scene 6: 1777. Daytime. An anteroom in the Palace.

SCHEELE

Monsieur Lavoisier. How gracious of you to travel so far, I've never left Sweden.

LAVOISIER

The invitation came from His Majesty... and his Majesty's curiosity on matters scientific is known to all of us.

SCHEELE

Indeed it is. I hear a "but".

LAVOISIER

(Smiles)

But does it encompass pneumatic chemistry?

SCHEELE

Perhaps.

LAVOISIER

(Sarcastic)

And includes a personal desire to have us verify in public, as the invitation states... "each savant's claims to Fire Air"?

SCHEELE

Perhaps it does.

LAVOISIER

One does not refuse a king. But—

SCHEELE

But, Monsieur?

LAVOISIER

Who is behind this? Who has the King's ear?

SCHEELE

Torbern Bergman. *Primus inter pares* among all Swedish scientists... as well as—

LAVOISIER

... your strongest patron.

SCHEELE

Patronage is surely not a fault?

LAVOISIER

We all have our patrons... and (*pretends to cross himself*) daily pray to God for their long life and continued support.

SCHEELE

Amen to that. What is your question then?

LAVOISIER

Bergman classified all chemical matter into inorganic and organic...

SCHEELE

Only one of his many strokes of genius.

LAVOISIER

Professor Bergman has never concerned himself with airs. Why then has he arranged our meeting? To raise the Swedish flag above all others?

SCHEELE

Because he wants to know whom God first favored among us three—

LAVOISIER

(*Ironic*)

While you do not?

SCHEELE

I already know. But—

LAVOISIER

But, Monsieur?

SCHEELE

But do you? (*Pause*)
(*Priestley enters*).

Or Dr. Priestley?

LAVOISIER

Dr. Priestley we meet again
(*Addresses Priestley*)

The royal invitation, I see demands from each of us an actual experiment...

PRIESTLEY

Yes?

SCHEELE

Which,, His Majesty suggests, another will execute.

PRIESTLEY

I wondered why?

SCHEELE

To confirm each person's claim.

PRIESTLEY

Claim? Can what is fact be claimed?

SCHEELE

Once reproduced by another, claims become facts.

PRIESTLEY

So they do. But does the King doubt my experiments? Or do you?

SCHEELE

No, my dear Doctor. But the world needs proof.

PRIESTLEY

Proof it shall have. Until tomorrow then!

LAVOISIER

(Stops him)

Un moment! Madame Lavoisier and I desiring to divert you and your ladies... and of course His Majesty... have devised an entertainment for your pleasure... *(Pause)* and perhaps enlightenment... A play that we have written and have performed... *(Pause)*... but once. Would you permit us to present this evening a masque on phlogiston and his enemy?

PRIESTLEY

What strange ways of presenting scientific arguments you have in France!

LAVOISIER

But the King of Sweden loves masques!

PRIESTLEY

(Disapproving)

And other pleasures we have heard.

(Scheele shrugs and exits, leaving Lavoisier onstage. He looks at us).

END OF SCENE

Scene 7. *Stockholm, Royal Academy of Sciences. 2001. A corridor.*

ULLA ZORN

I can't just sit there... you've got to tell them.

ASTRID ROSENQVIST

I like to see them off balance Ulla. It doesn't hurt and it's amusing.

ULLA ZORN

If you say so. (*Pause*). May I ask you a question?

ASTRID ROSENQVIST

Certainly.

ULLA ZORN

What do you really get out of this?

ASTRID ROSENQVIST

Wouldn't you like being both judge and jury?

ULLA ZORN

Why are scientists so obsessed with prizes?

ASTRID ROSENQVIST

It's our occupational disease. We don't get paid much for what we do. But we are expected to behave like... gentlemen.

ULLA ZORN

That's not what I heard in there.

ASTRID ROSENQVIST

I mean in print. So all we have is...

ULLA ZORN

... the satisfaction of being first.

ASTRID ROSENQVIST

Yes. And this committee is handing out the biggest pat on the back in science—

ULLA ZORN

Without wanting it yourself?

ASTRID ROSENQVIST

No Swedish woman has ever won it in any science. One will eventually.

ULLA ZORN

How important is that to you... being first?

ASTRID ROSENQVIST

You are beginning to sound like a shrink.

ULLA ZORN

Sorry. I just wanted to know what price you're willing to pay to be successful as a female scientist.

ASTRID ROSENQVIST

I decided not to have any children. Some may consider that a sacrifice, but for me it was a rational decision.

ULLA ZORN

Like for Mme. Lavoisier? (*Pause*). Is the committee your baby?

ASTRID ROSENQVIST

That contentious committee? The best argument for contraception I've ever heard! (*Pause*) Surely you've sensed some of the crosscurrents?

ULLA ZORN

(*Mocking*)

You could say that.

ASTRID ROSENQVIST

You can see how subtle Ulf and Sune are.

ULLA ZORN

Like you and Bengt?

BLACKOUT

Scene 8. 1777. *The gardens at the Palace. Lavoisier is practicing in a low tone (sing-song) some lines from the masque (scene 13). Fru Pohl approaches him.*

FRU POHL

Monsieur Lavoisier! What luck to meet you...

LAVOISIER

Madame will excuse me, but I must prepare for tonight's masque.

FRU POHL

Surely you have time for one simple question?

LAVOISIER

A lady's questions are rarely simple.

FRU POHL

A short question then?

LAVOISIER

Even worse: short questions are never simple.

FRU POHL

Monsieur... I'm not clever with words.

LAVOISIER

But you are disarmingly persistent. Your question then? Your one question?

FRU POHL

Yesterday... in the sauna—

LAVOISIER
(Quickly)

A curious Nordic custom... but one my wife found bracing.

FRU POHL

It was my idea to invite the ladies.

LAVOISIER

Nudity can be disarming.

FRU POHL

Madame Lavoisier was not disarmed.

LAVOISIER

Of course to disarm... one first needs to be armed.

FRU POHL

Your wife was. Isn't discretion a sort of armor?

LAVOISIER

Madame Pohl, you are observant.

FRU POHL

Women from the countryside have to be.

LAVOISIER

(Getting impatient)

Your question then? Your short simple question?

FRU POHL

Why?

LAVOISIER

(Taken aback)

Your question is indeed short... but is it simple? Why what?

FRU POHL

Why did you accept our King's invitation?

LAVOISIER

(Looks at her for a long time)

Surely that must have been obvious to you—

FRU POHL

It was... but it isn't anymore.

LAVOISIER

(Again looks at her for a long time)

You aren't just observant, Madame Pohl. *(Pause)*. *Au revoir*.

(Lavoisier bows and exits)

END OF SCENE

Scene 9. *Stockholm, 1777. The grounds of the Palace. SCHEELE and MME. LAVOISIER meet.*

SCHEELE

Madame!

MME. LAVOISIER

Ah... Monsieur Scheele! I'm looking for my husband. Tonight's masque still requires some work.

SCHEELE

I haven't seen him. I'm sorry. But Madame...

MME. LAVOISIER

Yes?

SCHEELE

I understand you keep your husband's correspondence.

MME. LAVOISIER

How did you come to know that?

SCHEELE

Fru Pohl told me.

MME. LAVOISIER

She tells you everything?

SCHEELE

She's an honest woman. She shares the good... and the bad with me.

MME. LAVOISIER

Like a wife.

SCHEELE

Or a friend. One question then.

MME. LAVOISIER

Yes?

SCHEELE

The letter I dispatched three years ago—

C. Djerassi & R. Hoffmann, "Oxygen (Oxygen-15 version)

MME. LAVOISIER

(Quickly cries out, while pointing offstage, and exiting)

Oh... there goes Antoine. I must catch him.

(Exits)

END OF SCENE

Scene 10. *Stockholm, 2001. Indications of a changing room at a gym. The men are finishing dressing, with their sports bags and squash racquets nearby.*

ULF SVANHOLM

Now what do you think of her?

BENGT HJALMARSSON

Astrid?

ULF SVANHOLM

No, Ulla Zorn.

BENGT HJALMARSSON

As a woman? Deep water... and not still. But as an "amanuensis"?

ULF SVANHOLM

What a precious job description!

BENGT HJALMARSSON

Astrid is showing off. It's just a fancier word for secretary.

ULF SVANHOLM

She's hardly said anything... except for mentioning the wives.

BENGT HJALMARSSON

That's why I'm suspicious.

ULF SVANHOLM

Of Zorn?

BENGT HJALMARSSON

Of Astrid. Springing Zorn on us is part of her private agenda. I can smell it.

ULF SVANHOLM

You keep talking about Astrid... What about the retro-Nobel?

BENGT HJALMARSSON

Too early to tell. And you?

ULF SVANHOLM

Remembering the history of our discipline is... refreshing.

BENGT HJALMARSSON

I think you're getting old.

C. Djerassi & R. Hoffmann, "Oxygen (Oxygen-15 version)

ULF SVANHOLM

What's age got to do with it?

BENGT HJALMARSSON

In science, only the old live in the past.

ULF SVANHOLM

And you?

BENGT HJALMARSSON

I'm interested in my future... Which is why I'm now heading for the lab.

(Exits)

END OF SCENE

Scene 11. *The Grounds of the Palace. PRIESTLEY and MME. LAVOISIER sit on a bench.*

PRIESTLEY

Much has happened since we last met.

MME. LAVOISIER

Three years is a long time...

PRIESTLEY

Only the young would think so...

MME. LAVOISIER

Ah. And you Monsieur, you have the wisdom that comes with age?

PRIESTLEY

I would call it judgment.

MME. LAVOISIER

Did your wife tell you about our meeting?

PRIESTLEY

Even down to the beating with twigs. It seemed to enliven her. She hides nothing from me.

MME. LAVOISIER
(*Sotto voce*)

That I would call poor judgment.

PRIESTLEY

Why?

MME. LAVOISIER

Some things ought to be hidden... even in a sauna.

PRIESTLEY

An opinion... or a judgment?

MME. LAVOISIER

Solely a comment. But no matter. (*Pause*). You seem vexed, Monsieur... I trust I'm not the cause.

PRIESTLEY

Three years ago...

MME. LAVOISIER

You dined at our table... content and eager.

PRIESTLEY

You translated...

MME. LAVOISIER

I tried my best... and you seemed grateful.

PRIESTLEY

I was then.

MME. LAVOISIER

But not now?

PRIESTLEY

I'm not sure you transmitted everything...

MME. LAVOISIER

Perhaps my knowledge of English is wanting...

PRIESTLEY

Madame's English is excellent.

MME. LAVOISIER

A judgment or a compliment?

PRIESTLEY

You failed to convey your husband's enthusiasm—

MME. LAVOISIER

Of course, a translator is also a filter, a sieve...

PRIESTLEY

Whose efficacy depends on the mesh.

MME. LAVOISIER

Indeed it does... and mine is fine.

PRIESTLEY

I am speaking of filtering information... not impurities.

MME. LAVOISIER

But so am I, Monsieur.

END OF SCENE

Scene 12. (*Stockholm, 2001; Royal Swedish Academy of Sciences, two weeks later*).

ASTRID ROSENQVIST

So Scheele on his deathbed marries the widow of the pharmacist who preceded him. Touching, Sune... but how relevant is it?

ULF SVANHOLM

(Irritably)

The retro-Nobel will be given for their work... not their private lives!

SUNE KALLSTENIUS

What if you can't separate the two?

BENGT HJALMARSSON

Lavoisier certainly had a private life! He even got his head chopped off... and that had nothing to do with his chemistry. He was a tax collector... hardly a popular occupation during the French Revolution. (*Pause*). But did your man Scheele and Fru Pohl live together?

ASTRID ROSENQVIST

(Sarcastic, mocking)

A deep question... from our resident expert on sleeping arrangements!

SUNE KALLSTENIUS

It depends on one's definition of "living together." For most of the time, they occupied the same house, which she kept for Scheele. (*Pause*). But did they share the same bedroom? It's been said of Scheele "that he never touched a body without making a discovery."

ASTRID

(Sarcastic)

What a man!

SUNE KALLSTENIUS

But these bodies were chemicals, not women. In my opinion, Scheele was celibate all his life... a chemical monk.

ULLA ZORN

How clever!

SUNE KALLSTENIUS

Ms. Zorn... you sound as if you have an opinion on this topic. After all, you're the one who mentioned wives.

ULLA ZORN
(Quick, but low voice)

Yes.

SUNE KALLSTENIUS
Yes... you have special knowledge... or yes, they did do it?

ULLA ZORN
"Yes" to the former... and "perhaps" to the latter.
(Rises and wraps herself in large, old-fashioned shawl)
It's so cold.

(Rosenqvist, Hjalmarsson and Svanholm semi-freeze, but watch the scene unfolding in front of them. Ulla Zorn and Sune Kallstenius change costumes on stage and move into the action).

Scene 12A.

LIGHTS FADE on the committee. LIGHTS UP on Scheele and Fru Pohl, who crosses over to a sideboard and mimes the grinding of coffee. It is cold (sound of blowing wind).

FRU POHL
Carl Wilhelm... it's time you came in from the shed.. Stopped work for the night.

SCHEELE
Soon...I'm at a critical stage.

FRU POHL
It's so very cold out there. If only you could afford a proper laboratory.

SCHEELE
I'm almost finished.

FRU POHL
There is warm food on the stove for you. And I've nearly finished grinding the coffee.

SCHEELE
It took time to dissolve the ore Bergman sent me. There may be a new metal in it.

FRU POHL
There's a letter from the printer in Uppsala

SCHEELE
No book?

FRU POHL

He promises it.

SCHEELE
(*Exasperated*)

But when? I finished it last year. He sat on it for months. I complained. Now three more months have passed, and my experiments on fire air gather dust in that damned printer's shop.

FRU POHL

Others know of your work.

SCHEELE

A few friends... in Sweden. The book will go far beyond our borders.

FRU POHL

I would help you, Carl Wilhelm. If only I were not so ignorant...

SCHEELE

You help me in many ways. But before I eat I must write that letter.

FRU POHL

To whom?

SCHEELE

Monsieur Lavoisier, the French chemist. He has burning lenses, Sara, that are as big as our house. With them, he can make chemical reactions go as no one else. In my letter I will ask him to repeat my experiments making fire air.

FRU POHL

Why ask him?

SCHEELE

Because my air is new. Because if he repeats my work, everyone will know of it... and of me.

FRU POHL
(*Hesitatingly*)

Forgive me Carl Wilhelm.... but is that what you desire most? That the world knows of you?

SCHEELE
(*Taken aback*)

No one has asked me that before. (*Reflects*). Respect is important—

FRU POHL

You have it from the citizens of Köping.

SCHEELE

And I want to earn enough money... to support you and your son—

FRU POHL

We manage.

SCHEELE

Because you're frugal.

FRU POHL

I've never complained.

SCHEELE

I also want to earn enough to buy a more powerful burning lens—

FRU POHL

And to heat your laboratory! Carl Wilhelm... I worry about your health.

SCHEELE

(Moved, takes her hand, pauses to inspect his hand and then hers)

Look! The coffee sticking to your hand! Is it some form of magnetism?

LIGHTS CHANGING as Scheele and Fru Pohl change costumes on stage and then rejoin other committee members.

ULLA ZORN

You see? He did touch part of her body. And made a discovery. *(Pause)*. That could have been personal magnetism.

BENGT HJALMARSSON

(Astonished)

Where did you dig that up?

ULLA ZORN

Scheele mentioned the incident in a letter to Johan Carl Wilcke, the secretary of the Royal Swedish Academy of Sciences.

SUNE KALLSTENIUS

But how did you come across that letter? Most chemistry students barely know who Scheele was.

ULLA ZORN

A reflection on the professors rather than the students.

BENGT HJALMARRSON

So, how did you discover those nuggets of information?

ASTRID ROSENQVIST

Later.

BENGT HJALMARRSON

No Astrid. Now!

ULLA ZORN

I am finishing my PhD in History at Lund University.

BENGT HJALMARRSON

And how did you find the references to coffee and the girlfriend... or whatever she was.

ULLA ZORN

Her name was Sara Margaretha Pohl. And I found the story the same way you would have: research!

BENGT HJALMARSSON

(Ironic)

I see. *(Shifts to ordinary tone)*. In that case... let me tell you about my research.... Everyone knows Lavoisier, the chemist. But he was also a banker and economist... who did everything from debunking mesmerism to shipping gunpowder to the Americans. Now listen to some goodies about Madame Lavoisier.

ULLA ZORN

My, my! I never thought my comments about wives would have such an effect on this committee.

BENGT HJALMARSSON

Don't flatter yourself, Ms. Zorn. I always throw a wide net in my research.

ASTRID ROSENQVIST

Especially when it comes to women! *(Laughs)*. Sorry about that... Go ahead, Bengt... tell us what you caught in your net.

BENGT HJALMARSSON

First of all, Madame Lavoisier wasn't just his wife...

(Mockingly to Ulla Zorn)

she was also his amanuensis.... Of course not full time.

ULLA ZORN

(Coldly)

It's not a very attractive full time position for an ambitious woman.

ASTRID ROSENQVIST

Everything is possible for an ambitious woman...

BENGT HJALMARSSON

She even helped in the lab. Yet she was barely in her teens when she married Lavoisier... her first husband.

ULF SVANHOLM

First husband? How many men were there?

BENGT HJALMARSSON

Her second husband, Count Rumford, I think she would have liked to forget... even though he was almost as famous as Lavoisier. But men? Probably a fair number... even by present day standards. Benjamin Franklin was quite smitten by her. But Pierre Samuel Du Pont...

SUNE KALLSTENIUS

The American Du Pont? The millionaire chemist?

BENGT HJALMARSSON

His French father. Now that was a different story, a love story.

(Picks up a paper while walking slowly toward ASTRID)

Du Pont wrote her a letter four years after Lavoisier's death... after... I quote from his letter... "twenty-two years of acquaintance and seventeen of intimacy."

(Pause).

In other words, they had been "intimate"... for at least thirteen years while the Lavoisiers were still married.

ASTRID ROSENQVIST

A modern couple...

BENGT HJALMARSSON

(Continues reading, but now in intimate tone while facing quite closely Rosenqvist as if words were meant for her).

"If you could have continued to love me, I would have patiently accepted that destiny..."

(Looks up from letter, short pause before addressing Rosenqvist)

That's Du Pont speaking... not me.

(Again picks up letter and continues to read)

"because a single evening with you around the fire... would have been compensation for both my eyes and heart... I belonged to you, my dear young lady...." The young lady was then forty-one!

(The ringing of a cellular phone is heard. The committee members, startled and then increasingly irritated, look around, perhaps also toward the theatre audience as if the phone might come from there).

ULLA ZORN

(Flustered, rummages through handbag, while the phone keeps ringing, perhaps with an annoying musical tone. She finally retrieves phone and whispers audibly)
Yes? *(Brief pause)*. To Ithaca. *(Brief pause)*. New York... *(Brief pause)*. Cheapest Economy! *(Brief pause)*. Three days only... maximum four. *(Brief pause)*. Call later... I can't talk now.

(Puts down phone. Looks unapologetic)

Sorry... I didn't know it was on.

LIGHTS CHANGE.

(Bengt and Ulf move to one side of stage, Astrid and Ulla to other. Sune remains in his seat.)

BENGT HJALMARSSON

That telephone call.

ULF SVANHOLM

I won't touch those damn things

BENGT HJALMARSSON

Another sign you're getting old. *(Laughs)*. Why is she flying to Ithaca?

ULF SVANHOLM

Probably a boyfriend... at Cornell University.

BENGT HJALMARSSON

I doubt it.

LIGHTS CHANGE.

ULLA ZORN

(to Astrid)

You aren't angry, are you?

ASTRID ROSENQVIST

Just amused. But you're showing off too much.

ULLA ZORN

Bengt Hjalmarsson irritates me.

ASTRID ROSENQVIST

Bengt is a complicated man.

ULLA ZORN

I suppose that's a compliment.

ASTRID ROSENQVIST

In this instance it's just an experimental observation. And think of the incentive a theoretician requires before doing an experiment.

ULLA ZORN

So you also got your hands dirty?

LIGHTS FADE, RISE ON COMMITTEE, as Astrid turns to talk to the men.

ASTRID ROSENQVIST

Ulf... what did you dig up on Priestley? Or, did you spend your time on Mrs. Priestley?

ULF SVANHOLM

I did not! Priestley lived at the right time in the right country: England... the 18th century hot house of pneumatic chemistry. In the case of Priestley, the self-taught chemist just happened to be a minister. He published 50 works on theology, 13 on education, 18 on political, social, and metaphysical subjects.

BENGT HJALMARSSON

A preacher dabbling in chemistry...

ULF SVANHOLM

(Raises hand)

... and fifty papers and no less than twelve books on science! You wouldn't call that dabbling, would you?

SUNE KALLSTENIUS

But what's in those books and papers? We must deal with content... with quality... not authorial diarrhea!

ULF SVANHOLM

Now, now! Just because Scheele completed only one book ... just because your man was constipated...

ASTRID ROSENQVIST

(Admonishingly)

Enough! What about the chemistry?

BENGT HJALMARSSON

Did Priestley realize what he was doing?

ULF SVANHOLM

He subjected air to all kinds of chemical processes...

BENGT HJALMARSSON

In an utterly haphazard manner.

ULF SVANHOLM

(Beginning to show irritation)

He was learning as he went along. When Lavoisier made his "vital air" he used Priestley's method, didn't he? It's the results that count. And—in contrast to Scheele—Priestley was ambitious enough to let people know what he found.

SUNE KALLSTENIUS

Maybe that ambition clouded his judgment.

ULF SVANHOLM

What's wrong with ambition? Look at it as the blemish in a Persian carpet that makes it valuable.

SUNE KALLSTENIUS

Does that mean that a carpet without blemishes cannot be as valuable... or even more so?

ULF SVANHOLM

I'm beginning to regret having mentioned ambition... or carpets. Let's forget about both! Anyway... Priestley loved to talk of his work... probably even to his wife.

(Ironic tone)

Or does that surprise you, Ms. Zorn?

ULLA ZORN

Why should it? Mrs. Priestley was educated... she wrote beautiful letters...

LIGHTS FADE on committee.

(Hjalmarsson, Zorn and Kallstenius semi-freeze, while Astrid Rosenqvist and Ulf Svanholm change costumes on stage and move downstage and across)

Scene 12B

LIGHTS UP on Priestley and Mrs. Priestley.

MRS PRIESTLEY

And what did you do in Paris?

PRIESTLEY

I visited Versailles with Lord Shelburne.

MRS PRIESTLEY
(Affectionately)

And dined well, no doubt.

PRIESTLEY
So I did... including one night at the table of Monsieur and Madame Lavoisier. Most of the natural philosophers of the city were there. I told them of my new air, in which a candle burned much better than in common air.

MRS. PRIESTLEY
I wish you had taken me, Joseph.

PRIESTLEY
I wish you had been there. It was difficult, Mary.

MRS. PRIESTLEY
They didn't believe you?

PRIESTLEY
Who knows? I knew the French common words, but not the scientific terms.

MRS. PRIESTLEY
I would have translated for you.

PRIESTLEY
I know. You're a clever woman, Mary... but who would care for the children? No matter... Mme. Lavoisier asked how I made the air.

MRS. PRIESTLEY
(Concerned)
And you told her?

PRIESTLEY
Of course. Mme. Lavoisier understood. She explained it to her husband.

MRS. PRIESTLEY
I understand she assists him in the laboratory.

PRIESTLEY
Indeed. After dinner, she displayed drawings of their chemical equipment...

MRS PRIESTLEY
I envy her.

PRIESTLEY

So much better equipment than mine... which, I hope, will persuade Lord Shelburne to loosen his purse some more. But her drawings were skillful....

MRS. PRIESTLEY

I once learned how to draw.

PRIESTLEY

You help in so many ways... you take care of house and family...

MRS. PRIESTLEY

And money. But I worry about its source. You're dependent on his Lordship's favors, which could be withdrawn without notice.

(She pauses, pointing to a newspaper)

Joseph... have you heard what Edmund Burke says of you? "The wild gas, the fixed air is plainly broke loose."

PRIESTLEY

(Laughs)

At least he's got one of my airs right!

MRS. PRIESTLEY

I wish you'd be more cautious. Politics are dangerous for you. There are plenty in Birmingham would attack you for what you say on liberty and God.

PRIESTLEY

Change will come.... Men will be liberated from the variety of fetters by which they have hitherto been held. Why be afraid? And of whom? Of these arse-lickers of kings?

MRS. PRIESTLEY

I know what you preach, Joseph. But what about your laboratory... your work.... our children? People stir against us.

PRIESTLEY

Let them!

LIGHTS CHANGE as Priestley and Mrs. Priestley change costumes on stage and then rejoin other committee members.

ULF SVANHOLM

Isn't it ironic? Priestley—a chemical conservative... just think of his undying defense of phlogiston—was such a political and religious revolutionary that a mob burned his house in Birmingham. *(Pause)*. Three years later, he fled to America... with Benjamin Franklin's help.

BENGT HJALMARSSON

While Lavoisier, the chemical revolutionary, was a political conservative.

ASTRID ROSENQVIST

Can we finally turn to Scheele's letter? Did Lavoisier get it? Did he read it?

BENGT HJALMARSSON

There is no hint on Lavoisier's side—no letters, no hearsay, absolutely nothing to indicate that he had ever received a written communication from Scheele. Yet the answer is (*pause*)... yes, he did.

ASTRID ROSENQVIST

Yes to both questions?

BENGT HJALMARSSON

To both.

ULLA ZORN

And the evidence?

BENGT HJALMARSSON

Grimaux's finding.

ULLA ZORN

(*Amused*)

My goodness! Is that a leopard changing his spots?

BENGT HJALMARSSON

Would you care to elaborate on that zoological bon mot?

ULLA ZORN

Perhaps I should have chosen a chemical metaphor: quicksilver turning into gold or in this instance, the reverse. After all, Grimaux was a French chemist turned historian. I thought none of you had use for such turncoats.

BENGT HJALMARSSON

Since he found Scheele's letter in 1890, I was prepared to make an exception. Anyway... there was the letter... hidden among Lavoisier's papers for over one hundred years.

ASTRID ROSENQVIST

And you saw it?

BENGT HJALMARSSON

(Starts rummaging in his briefcase)

Yes. It's now in the archives at the French Academy of Sciences. (*Triumphant*). And I brought some slides to prove it. Listen to this:

*(Projects **slide 19** and then walks up to the screen to point to relevant sentence. Reads it quickly in French).*

"Je ne desire rien avec tant d'ardeur que de vous pouvoir faire montrer ma reconnaissance.

SUNE KALLSTENIUS

Stop showing off and translate.

BENGT HJALMARSSON

"There is nothing I desire more eagerly than to be able to show you my discovery."

SUNE KALLSTENIUS

(Grins)

Well, well! So you're moving to the Scheele camp!

ULLA ZORN

Professor Hjalmarsson... I hope you won't mind a minor correction.

BENGT HJALMARSSON

What correction?

ULLA ZORN

"*Reconnaissance*" means "gratitude," not "discovery." Scheele is just thanking Lavoisier for a book he had sent him earlier.

BENGT HJALMARSSON

(Flustered and irritated, but recovers quickly)

Of course! How stupid of me.

BENGT HJALMARSSON

Thank you Ms Zorn. But back to the letter. Here is the second slide. And note (*sarcastic tone*) Mademoiselle Zorn, here he actually describes the experiment:

*(Projects **slide 21**)*

SUNE KALLSTENIUS

(Jumps up, goes to screen and points to bottom lines)

Look at the date, September 30, 1774. And Scheele's signature.

ULLA ZORN

C. Djerassi & R. Hoffmann, "Oxygen (Oxygen-15 version)

(Mimics Hjalmarsson's sarcasm)

But Monsieur Hjalmarsson, that doesn't prove that Lavoisier had actually read the letter.
(All look at her, startled)

END OF SCENE

Scene 13. 1777. A theatre, with a theatrical curtain. Sitting with their back to audience are Dr. and Mrs. Priestley, Scheele and Fru Pohl. There is a suggestion of a Royal Box, occupied. M. and Mme. Lavoisier enter.

LAVOISIER AND MME. LAVOISIER
(Deep bow, curtsy)

Your Majesties!

LAVOISIER

Dr. and Mrs. Priestley!

MME. LAVOISIER

Apothecary Scheele, Fru Pohl...

LAVOISIER

Welcome!

MME. LAVOISIER

Knowing of your love for the stage and opera, Your Majesty...

LAVOISIER

In this, your magnificent court theatre at Drottningholm...

MME. LAVOISIER

In the tradition of the court of our King Louis the Sixteenth...

LAVOISIER

We bring you a small entertainment, a masque, of...

MME. LAVOISIER

The Victory of Vital Air...

LAVOISIER

Over Phlogiston!

(Music rings out majestically. The Lavoisier's put on masks, and then present a dance, whereupon Mme Lavoisier goes to a harpsichord and begins playing, whilst Lavoisier begins performing the masque, singing in recitative. The music drops off to a low level as the actual masque begins)

LAVOISIER (playing PHLOGISTON)

(Broad comedy in order throughout the masque. He declaims, in recitative)

*I am the vital fire of chemistry,
The element that sets the others free.*

*The Greek philosophers were unaware
Of how I act on water, earth and air.
Without me, Phlogiston, the world would be
Quite unillumin'd, rudimentary.
'Tis in my gift, the elements to bind,
Transforming them to everything we find*

(PRIESTLEY and SCHEELE couples nod approvingly, mime applause)

MME. LAVOISIER (playing OXYGEN)
(Wearing the mask of oxygen)

*Monsieur, you are most glittering and sure
Of what the world is made of. Tell me more!
You say there's a terra this, a terra that,
Pray show me how these elements react.*

LAVOISIER

*A just enquiry, Madam, first, take fire.
All things that burn release me to the air.
Take charcoal, fat, they're full of Phlogiston
And when their blazing ceases, I am gone*

MME. LAVOISIER

You have an end?

LAVOISIER

*No! Listen carefully!
Air can only hold just so much of me.
There can be other ways I also may appear:
When pure metal rusts, off I fly, my dear!*

MME. LAVOISIER

Your miracles are endless! Tell me more!

LAVOISIER

*'Tis I that wins the metal from the ore.
My role in such extraction will astound,
Remember that in charcoal I am found,
And from the coal the ores just suck me out!*

MME. LAVOISIER

*A marvel, Sir, yet you leave much to doubt—
Your theory is hopelessly behind!
We now know air to be of different kinds:
Inflammable, nitrous, vital and fixed.
And water's not an element, but mixed.
As mon mari will most ably demonstrate!*

(Priestley becomes very agitated at this point)

LAVOISIER

A revelation, I'll accommodate!

MME. LAVOISIER

*You boast that Phlogiston's the key to fire
And rust, but why not credit vital air?
Could it not feed the flames or lead to rust?
Combined with carbon, say, or iron, it must!
You claim that metal needs you but what for,
When charcoal coaxes Oxygen from ore?
Another point I feign cannot be true
Is your idea of rust. Surely, you knew
That metal grows in weight when thus decayed.
Yet you insist that nothing new is made!*

LAVOISIER

(Embarrassed)

*My dear, (Pause)... Phlogiston might just be so light
That it is weightless. Could he still be right?*

(Tentatively, dances with large balloon to gain elevation)

MME. LAVOISIER

*Mon cher monsieur, you're speaking like an ass!
You know there's no such thing – negative mass!
A revolution is about to dawn
In chemistry, as Oxygen is born.
Phlogiston is a notion of the past,
Disproved and set aside, indeed, surpassed.*

*(Priestleys, Scheele, and Fru Pohl grow more agitated from here on to
end of scene)*

MME. LAVOISIER (Cont'd)

*In chemical reaction, this remains:
Matter is neither lost nor gained.
In this new chemistry, let us rejoice
And thank our sovereign patrons in one voice:
Our Louis, George, and gallant King Gustaf,
In whose light we gather to finish off
Vain Phlogiston. Now join to celebrate
How vital air triumphed in this debate!*

(Phlogiston and Vital Air struggle to the concluding music. Mme. Lavoisier pricks balloon with hatpin, whereupon it explodes. Phlogiston sinks to the ground. The Priestleys, Scheele and Fru Pohl overturn their chairs and rush off stage)

(LAVOISIER and MME. LAVOISIER drop their masks on the floor)

LAVOISIER

They weren't amused! Perhaps we went too far.

MME. LAVOISIER

We planted a seed... their doubt will grow.

LAVOISIER

I worry.

END OF SCENE

END OF ACT I

ACT 2.

Scene 14. *Stockholm 1777. Suggestion of a palace setting. At center is a demonstration table. Stage right is a lectern. Upstage right is a free-standing screen, which could be used for shadow play. Actual and simulated experiments will be done at this table; projections may be shown on the side screens. Left stage are three chairs for the women.*

COURT HERALD'S VOICE

(Forceful, somewhat pompous voice)

Your Majesties, esteemed guests! Throughout Europe, pneumatic chemistry is in the air. A dispute has arisen: Who, among these great savants, discovered the vital air supporting life? *(Pause)*. A golden medal... with the likeness of our King Gustavus III... will be struck in honor of the true discoverer. And our King is famed for his munificence in other ways.

PRIESTLEY

(Aside)

As he squanders the people's money...
(Trumpets)

COURT HERALD'S VOICE

Let the Judgment of Stockholm begin! And let the three savants be their own judges! Vital air! *(Pause)*. Who made it first?

SCHEELE

(Quietly, but quickly, beating the other men to the draw)

I did. And called it *eldsluft*... a good Swedish word for fire air.

PRIESTLEY

But is that not air deprived of all phlogiston? The air that inflames all things? That is why I named it "dephlogisticated air." *(Pause)*. But dear Scheele... where should we have learned of your discovery?

SCHEELE

In my book, about to appear...

PRIESTLEY

I made that air by heating *mercurius calcinatus* in 1774 and...
(Raises voice for emphasis, while addressing Scheele)
communicated that discovery in the same year!

LAVOISIER

(Smiling)

Mes amis! He who starts the hare, does not always catch it.

SCHEELE

There is no hare to catch if someone does not start the hunt!

LAVOISIER

It is we who must decide who first captured the essence of that vital air....

PRIESTLEY

(Sarcastic)

And what does that mean?

SCHEELE

It is essential to know who made the air first...

PRIESTLEY

... for it is the invention that will be remembered by posterity, not its ephemeral interpretation...

LAVOISIER

(Shifting the subject)

Let us do the experiments we judge vital in this matter. Whose experiment will come first?

SCHEELE

Monsieur Lavoisier, do me the honor of performing the experiment I brought to your attention some three years ago in my letter—

LAVOISIER

I know of no letter—

SCHEELE

(Gets letter from Fru Pohl)

Let me read it for you.

(LIGHTS DIM; spots on two men. This is the first of three experimental scenes. The stage is darkened, except for spots on the bench and on the man who performs the experiment, as well as the one who directs him.)

Dissolve silver in acid of nitre and precipitate it with alkali of tartar. Wash the precipitate, dry it, and reduce it by means of the burning lens in your apparatus..

LAVOISIER

But I brought no burning lens!

SCHEELE

My apologies. With the burning lens at hand, Monsieur. When I first wrote, I thought of your celebrated giant lens, which was so much superior to what was available in my pharmacy. No matter. A mixture of two airs will be emitted. And pure silver left behind.

LAVOISIER

And then?

(Light DOWN on men, who continue their experiment, possibly in mime. Light UP on women stage left.)

FRU POHL

Apothecary Scheele once invited me into his shed. To show me an experiment he had done earlier in Uppsala. He was bubbling the newly formed fire air through a kind of water.

MME. LAVOISIER

It must have been limewater.

MRS. PRIESTLEY

It turned cloudy, didn't it?

FRU POHL

How do you know?

MRS. PRIESTLEY

I've listened to Joseph's lectures on fixed air.

MME. LAVOISIER

The same air we expire... the one we remove by passage through limewater.

FRU POHL

In the remaining air, he bid me thrust a splint that had blown out. Just a glow of a coal at its end. It was toward evening.

MRS. PRIESTLEY

And it flared in brightest flame... and kept burning!

(The flaring up of the splint in the men's experiment coincides with its mention by Mrs. Priestley. Lights OUT on women, UP on men)

SCHEELE

I did that experiment in 1771, three years before your experiment, Dr. Priestley, in a pharmacy in Uppsala... with equipment much more modest than now put at our disposal by your Majesty.

PRIESTLEY

Yet you did not report it?

SCHEELE

I told Professor Bergman... I thought he would tell others. I had to earn my wages. I wanted to experiment. I had but little time to write of my observations.

(Waves page)

PRIESTLEY

Your experiment was with a silver salt.

SCHEELE

I obtained the air over the next three years in many different ways. Including red *mercurius calcinatus*, as you did.

LAVOISIER

That red mercury compound—it is also how we... Dr. Priestley and I... made that air.

PRIESTLEY

We? *(Pause)*. We were not in the same laboratory, Monsieur Lavoisier! Pray speak clearly of who did what and when. *(More heated)*. More than once, my experiments in pneumatic chemistry were cited by you—

LAVOISIER

Is that a reason to complain?

PRIESTLEY

Only to be then diluted... if not evaporated.

LAVOISIER

How did I do so?

PRIESTLEY

You write

PRIESTLEY (Cont'd)

(Heavy sarcasm)

"We did this... and we found that." Your royal "we", sir, makes my contributions disappear... poof... into thin air! *(Pause)*. When I publish, I say, "[did...] found...] observed." I do not hide behind a "we."

LAVOISIER

Enough of word plays. *(Louder)*. What now?

PRIESTLEY

I made that air first... and did so alone. And I will now show you how I accomplished that. Mr. Scheele, will you perform the experiment?

SCHEELE

It will be an honor to do so.

(Both men step to demonstration table; LIGHTS DIM)

PRIESTLEY

In August of 1774, I exposed *mercurius calcinatus*... the red crust that forms as mercury is heated in air... in my laboratory to the light of my burning lens. As the red solid is heated, an air will be emitted, while dark mercury globules will condense on the walls of the vessel. You will collect the air by bubbling it through water. As soon as the gas appears, be careful, Mr. Scheele, to catch it under water.

LAVOISIER

But where is your balance, Dr. Priestley? Shall the gas not be weighed?

PRIESTLEY

A timepiece is sufficient. We have here two chambers... one with ordinary air... the other with my new dephlogisticated one. Mr. Scheele, now take a mouse...

(Lights DOWN on the men, who continue the experiment with two jars and two mechanical mice in a small cage. Lights UP on women)

MRS. PRIESTLEY

I asked him—why mice?

FRU POHL

And?

MRS. PRIESTLEY

And he said: Mice live as we do. Would you use English children?

MME. LAVOISIER

They live on a part of ordinary air.

MRS. PRIESTLEY

Then he placed one mouse in a jar of plain air.

(In the darkness, SCHEELE can pretend allowing the mechanical mouse to escape and then retrieving it by its tail).

FRU POHL

Where it died in time.

MRS. PRIESTLEY

How do you know that?

FRU POHL

Apothecary Scheele showed me.

MME. LAVOISIER

It is a well-known fact, described also by other savants.

MRS. PRIESTLEY

And then he placed the other one in—

(SCHEELE mimics this experiment with the second mouse)

FRU POHL

Fire air...

MRS. PRIESTLEY

My Joseph's dephlogisticated air...

MME. LAVOISIER

And it lived much longer, did it not? This is why we call that new air "eminently respirable" or vital air.

FRU POHL

(Laughs)

With living things, Carl Wilhelm can be clumsy. He often dropped them! But we know mice in the country. If I didn't catch them, the cats did.

MRS. PRIESTLEY

I detest mice.

(Lights OUT on the women, UP on the men)

LAVOISIER

There is no doubt that Dr. Priestley's method produces vital air. But—

PRIESTLEY

But, Monsieur?

LAVOISIER

Now is my turn. May I proceed?

SCHEELE, PRIESTLEY

Of course.

LAVOISIER

We just observed a mouse living longer in the vital air we have all made. Yet in the end that mouse also dies, as the air is depleted. However, in my own work... I have moved far, far beyond watching mice die. Your Majesty, gentlemen! This air... that I propose we henceforth call *oxygène*—

PRIESTLEY

(Interrupts)

I object, sir! It's easy to call something by a new name... when you don't know what you have! Be descriptive, sir! Why not dephlogisticated—

LAVOISIER

I know the air as well as you do, Monsieur. "Oxy" is Greek... for acid. And since I believe our air to be associated with all acids, I am being descriptive...

PRIESTLEY

Descriptive? Bah! You, sir, are being acid... but our dephlogisticated air is not.

LAVOISIER

Allow me the courtesy to continue. This air is at the heart of all chemistry. I have shown that when we breathe, the wondrous machinery of the body transforms a given weight of *oxygène*... into other gases and water.

PRIESTLEY

But that is obvious!

LAVOISIER

Not until you weigh it! For that... (*confronts Priestley*)... a timepiece is not sufficient... Since nothing is gained... nor lost in this world... be it in the economy of a country or a chemical reaction... the balance sheet of life's chemistry must be determined.

PRIESTLEY

(Dismissive)

The *banquier* still counting his money

LAVOISIER

(Ignores Priestley's comment)

I have brought from Paris a suit of rubber I have devised. It catches all the effluents of the body... to show us that the equation balances. (*Pause*). Dr. Priestley, are you prepared to perform the experiment?

PRIESTLEY

Indeed I am... even weighing things on your balances.

LAVOISIER

My experiments are quite complex technically. Perhaps Mr. Scheele will help you?

(Scheele joins Priestley)

PRIESTLEY

It appears we require a volunteer for the experiment... to wear your modern suit of armor.

(Looks around, turns to his wife)

Mary?

MRS. PRIESTLEY

(Most reluctant)

I would help you, Joseph, but I fear for my life in that French contraption.

PRIESTLEY

Don't be afraid. It's only science.

MME. LAVOISIER

I will do it!

(Mme. Lavoisier marches up, with determination. She picks up "rubber suit", not unlike old-fashioned diving or scuba suit. Scheele and Priestley help her put it on, behind the screen. Projection of one of her drawings of the experiment may appear).

LAVOISIER

Not only must you weigh my spouse ... you must also weigh her suit. The measurements will take several hours.

MRS. PRIESTLEY

(Shocked)

Poor Madame!

LAVOISIER

Quantitative experiment is a hard mistress.

(Lights dim on men, remain on Mme. Lavoisier in suit, and up on Mrs. Priestley and Fru Pohl).

MRS. PRIESTLEY

She sketched her husband's experiment.

Projection of one of Mme. Lavoisier's drawings of the experiment appears on screen for remainder of their conversation.

FRU POHL

But why? For her pleasure?

MRS. PRIESTLEY

As a record, I suppose.

FRU POHL

But why should a "record" be needed?

MRS. PRIESTLEY

To give others evidence of what was done, of course.

FRU POHL

And when it was done, I should think.

(Lights dim on women)

LAVOISIER

(Addresses Priestley)

I trust you took care... for the margin of error must not be more than 18 grains in 125 pounds. What do you find?

PRIESTLEY

Mme. Lavoisier has lost some weight...

(Mme. Lavoisier seems weak, but smiles)

but when we take into account the water and fixed air breathed out, there's indeed a rough balance.

LAVOISIER

Now we have verified each other's experiments. Now that we see that nothing is created—

PRIESTLEY

Except by God.

LAVOISIER

Nor lost.

SCHEELE

Except by Man.

MME. LAVOISIER

Or woman. Especially when she is the subject of an experiment.

LAVOISIER

(Driving his point home, and refusing to enter the banter)

Gentlemen! That crucial mass balance (*with emphasis*)... punctures phlogiston's balloon.

PRIESTLEY

Not in my view, sir!

(Addresses Lavoisier)

The experiment you so laboriously had us do, with balances, and the patient suffering of your wife, did demonstrate... I readily confess ... one function of your (*assumes sarcastic tone*) "eminently breathable air." (*Pause*). But, Monsieur, you did not show us how you made that air.

LAVOISIER

I knew my air was there in ordinary air.... Did I not see metals combine with it... with sulfur... or with phosphorus?

PRIESTLEY

That does not tell us how you produced the dephlogisticated air...

LAVOISIER

Pray stop calling it "dephlogisticated," Dr. Priestley. The name derives from a theory that is *passé*.

PRIESTLEY

Not for me.

SCHEELE

Nor for me.

LAVOISIER

Why not a new name for the air, to avoid this argument?

PRIESTLEY

Call it (*dismissively overemphasizes French pronunciation*) *oxygène*? And yield to the tyranny of a nomenclature, invented by you?

LAVOISIER

(Angry)

When a new structure is needed for a science... when, indeed, there must be a revolution, new names are also required.

PRIESTLEY

But you did not know what that gas was!

LAVOISIER

I saw the need for one air explaining rusting, burning, and respiration!

PRIESTLEY

(Heatedly)

But until that October dinner in Paris when I informed you of my observations... you did not know the nature of that air...

SCHEELE

(Atypically forceful)

And until that October day when you got my letter which told you how to make fire air....

(They argue simultaneously to the end of the scene)

LAVOISIER

I had begun my experiments with mercurius calcinatus...

PRIESTLEY

Only after you heard of what I discovered...

SCHEELE

You did not know how to make that air...

COURT HERALD' VOICE

(Sound of tapping staff)

Order! Order! Gentlemen... his Majesty is vexed. *(Pause)*. Royal displeasure is the only judgment you will receive today!

END OF SCENE

d

Scene 15. *Stockholm 2001. A small bar at Swedish Academy. Astrid is at a table down left with Ulla. Astrid leaves to go to the ladies' toilet.*

BENGT HJALMARSSON
(Walks over to Zorn to confront her)

What did you say your Ph.D. thesis was on?

ULLA ZORN

You never asked me.

BENGT HJALMARSSON

I am asking now.

ULLA ZORN

"Women in the lives of some 18th century chemists."

BENGT HJALMARSSON

I hope you won't mind a comment.

ULLA ZORN

I had little choice before. So another won't hurt.

BENGT HJALMARSSON

So Astrid felt she had to smuggle you in? Don't you feel used?

ULLA ZORN

With you I might have. But not with Professor Rosenqvist.

BENGT HJALMARSSON

"Professor Rosenqvist"! Why don't you call her Astrid?

ULLA ZORN

I do, usually.

BENGT HJALMARSSON

Why not now?

ULLA ZORN

Out of respect for her. I didn't like the way you questioned her about my presence.

BENGT HJALMARSSON

I was irritated. I am irritated. I don't enjoy surprises.

ULLA ZORN

You made it very clear what you thought of history and historians.

BENGT HJALMARSSON

How could we have known that a historian was in the room?

ULLA ZORN

You wouldn't have acted differently.

BENGT HJALMARSSON

(Laughs)

Probably not.

ULLA ZORN

(Musingly).

Actually, I have a feeling something has changed.

BENGT HJALMARSSON

Yes?

ULLA ZORN

Now you all think you're experts in my field. When I see all of you... sniping at each other... worrying about who published... who didn't... That wasn't my idea of science and scientists.

BENGT HJALMARSSON

You think we arrange beetles in a museum case?

ULLA ZORN

I thought at the heart of science was sheer curiosity. I see that in Scheele... maybe also in Priestley. I start having troubles with Lavoisier.

BENGT HJALMARSSON

So Lavoisier is too meticulous for you. Is his interest in precise weights any different from yours in exact dates and documents?

ULLA ZORN

I'm also talking about each of you...

BENGT HJALMARSSON

You're confusing science with scientists.

ULLA ZORN

Am I?

BENGT HJALMARSSON

Science is a system... a search driven by curiosity, all the time touching what's real... That system works...

ULLA ZORN

No matter what motivates the people who do it?

BENGT HJALMARSSON

Scientists might be after priority... power... money.... As long as they publish, Ulla, someone will check their work.

ULLA ZORN

And how often does that happen?

BENGT HJALMARSSON

The more interesting the discovery, the more closely it will be checked...

ULLA ZORN

To prove the other person wrong? What a noble reason!

(Astrid has joined them and is close to Bengt).

BENGT HJALMARSSON

It still keeps us honest... most of the time. It doesn't matter whether angels or devils uncover how the world works. It doesn't even matter if they give proper credit to others...

ULLA ZORN

You're pretty cynical.

ASTRID

Maybe we all are Ulla. A little.

BENGT HJALMARSSON

(Glances at Astrid)

Maybe Astrid. Maybe. But another part of me also knows that science is not always about power... or control... or even progress. The world can be a playground, full of secrets. Where it's just plain fun for me to find out why one molecule is bent, another linear.

(Hjalmarsson imitates the bending of a molecule with his hands)

ULLA ZORN

(Slightly ironic, yet touched)

In other words, scientists can also play?

ASTRID ROSENQVIST

Like historians?

BENGT HJALMARSSON

Who knows about historians? (*He smiles at Ulla*). See you later. I've got to get back to the lab.

(*Exits*)

ASTRID ROSENQVIST

Well, Ulla... what do you think now of Bengt?

ULLA ZORN

(*Flustered*)

As you said earlier... an interesting man.

ASTRID ROSENQVIST

I think I said "complicated."

(*Looks pensively at Ulla Zorn*)

I'll tell you a story about him. You know he was at the Pasteur Institute. He met a young French biologist there. She came back with him to Sweden.

ULLA ZORN

(*Intensely curious*)

Now that is interesting!

ASTRID ROSENQVIST

They lived together, but she couldn't take our November nights. So she went back to France. Since then he's been in the lab all the time. But at night he plays the cello.

ULLA ZORN

So you like Bengt?

ASTRID ROSENQVIST

I think you do too... don't you?

END OF SCENE

Scene 16A. *Evening 1777, following Stockholm Challenge. Probably an interior of the Lavoisier boudoir.*

MME. LAVOISIER

You will meet them both?

LAVOISIER

His Majesty insisted.

MME. LAVOISIER

Antoine, that dinner in Paris with Priestley... I worry.

LAVOISIER

So do I. There were witnesses.

MME. LAVOISIER

And the letter?

LAVOISIER

What letter?

MME. LAVOISIER

Scheele's. I saw it...

LAVOISIER
(Taken aback)

You saw it?

MME. LAVOISIER

It's complicated... but I couldn't tell you.

LAVOISIER
(Furious)

Why do it now?

MME. LAVOISIER

I feel guilty.

LAVOISIER
(Even angrier)

And I must share your guilt?

MME. LAVOISIER

You are my husband.

Where is the letter?
LAVOISIER

Hidden.
MME. LAVOISIER

You have not destroyed it?
LAVOISIER
(*Taken aback*)

You look so angry. Why?
MME. LAVOISIER

I do not wish to discuss it.
LAVOISIER

You cannot tell your wife?
MME. LAVOISIER

I can tell no one.
LAVOISIER

But why?
MME. LAVOISIER

Once voiced, I'd have to deny that thought... or condemn it.
LAVOISIER

So you disapprove of what I did?
MME. LAVOISIER

You're still young.
LAVOISIER

Why blame youth?
MME. LAVOISIER

Subtlety only comes with maturity.
LAVOISIER

You taught me chemistry... now teach me subtlety.
MME. LAVOISIER

Subtlety cannot be taught.
LAVOISIER

MME. LAVOISIER

Nor explained?

LAVOISIER

If I'd known he'd choose a personal letter—not a scientific article—to establish his priority, I would have wished that letter away.

MME. LAVOISIER

Of course! That's why—

LAVOISIER

Wait! But not wished to know how it disappeared.

MME. LAVOISIER

If that is subtlety... I do not understand it.

LAVOISIER

A stray thought becomes iniquity when spoken.

MME. LAVOISIER

It's the lawyer in you... a role I never liked.

LAVOISIER

The law is never likeable... especially when dealing with guilt.

MME. LAVOISIER

I'm the guilty one... I admitted it... and only to you.

LAVOISIER

Tainted by knowledge of the deed, how can I approve of my wife's action?

MME. LAVOISIER

Even when done as a token of love... for you?

LAVOISIER

Especially if done for love... for then I must reject your love as well.

Scene 16B. *Evening 1777, following Stockholm Challenge. Mrs. Priestley is shaving her husband, who is sitting in a chair, face lathered.*

MRS. PRIESTLEY

Why face him?

PRIESTLEY

It's complicated... but I must.

To prove you told him? MRS. PRIESTLEY

To show I was first. PRIESTLEY

And Scheele? MRS. PRIESTLEY

I trust him. PRIESTLEY

He claims priority. MRS. PRIESTLEY

He did not publish. PRIESTLEY

Yet wasn't he first? MRS. PRIESTLEY

Perhaps. PRIESTLEY

But that would make you second. MRS. PRIESTLEY

It would make Lavoisier third. PRIESTLEY

Is that the point? That he was last. MRS. PRIESTLEY

Indeed. PRIESTLEY

Why? MRS. PRIESTLEY

Have the world bow to him? (*Pause*). When I preceded him? PRIESTLEY

If you were King Gustav— MRS. PRIESTLEY

PRIESTLEY

God forbid!

MRS. PRIESTLEY

(Persists)

Still... if you were King... whom would you pick?

PRIESTLEY

I'd ask... whom would the world choose?

MRS. PRIESTLEY

Joseph! Answer me... as my husband... not as a clever minister.

PRIESTLEY

You've always wanted black and white answers.

MRS. PRIESTLEY

This question deserves it.

PRIESTLEY

Deserving something does not always lead to getting it.

MRS. PRIESTLEY

You're not in a pulpit.

PRIESTLEY

(Tired)

I published first... which makes me first in the world's eyes.

MRS. PRIESTLEY

I meant the heart... not the eyes.

PRIESTLEY

The world has no heart.

MRS. PRIESTLEY

But you do... you've often opened it to me.

PRIESTLEY

You're a clever woman, Mary.

MRS. PRIESTLEY

No... this is your loving wife asking.

PRIESTLEY

Before we came to Stockholm, I was convinced... in my heart and mind... that I was first. (*Pause*). But now?

MRS. PRIESTLEY

I understand, Joseph.

Scene 16C. *Evening 1777, following Stockholm Challenge. FRU POHL and SCHEELE speak in low voices. Dark except for single candle held by Fru Pohl.*

SCHEELE

We will all go home with empty hands, Sara Margaretha. We quarreled...

FRU POHL

Men!

SCHEELE

The King dismissed us. He couldn't offend the French and British; they are strong at court.

FRU POHL

And Bergman?

SCHEELE

He should have reminded Lavoisier of my letter! In public!

FRU POHL

(Bitter)

So much for friendship. But... I think the King was foolish.

SCHEELE

You must not say that.

FRU POHL

Others do it... even at court. But to please you I shall call him "unwise."

SCHEELE

In what way?

FRU POHL

To think that three natural philosophers could agree!

SCHEELE

It happens... sometimes.

FRU POHL

When it's a question of who is first?

SCHEELE

We've missed our chance.

FRU POHL

C. Djerassi & R. Hoffmann, "Oxygen (Oxygen-15 version)

So it will remain a mystery?

SCHEELE

Oh no. The world likes it simple.

FRU POHL

Carl Wilhelm... who will speak for you?

SCHEELE

The facts.

FRU POHL

But when?

END OF SCENE

Scene 17. *Stockholm, 2001. Royal Academy of Sciences, a few minutes after last committee room scene. A break in the proceedings. ASTRID ROSENQVIST sits, checking notes. Hjalmarsson enters.*

BENGT HJALMARSSON
I like the skirt, Astrid.

ASTRID ROSENQVIST
I thought you might.

BENGT HJALMARSSON
You're still a damned good-looking woman...

ASTRID ROSENQVIST
That's exactly what you said the first time we met.

BENGT HJALMARSSON
The chemistry was right... then.

ASTRID ROSENQVIST
We were on fire, Bengt... then.

BENGT HJALMARSSON
And released something...

ASTRID ROSENQVIST
... like Priestley's and Scheele's phlogiston?

BENGT HJALMARSSON
More or less. *(Pause)*. But...

ASTRID ROSENQVIST
"But?" ... a dangerous word for lovers.

BENGT HJALMARSSON
"Ex," Astrid. Ex-lovers.

ASTRID ROSENQVIST
We were wrong... all intent on release.

BENGT HJALMARSSON
As Priestley and Scheele were....

ASTRID ROSENQVIST
When lovers burn, something is also gained...

BENGT HJALMARSSON

So Lavoisier said. But what did we acquire?

ASTRID ROSENQVIST

I'd say it was knowledge...

BENGT HJALMARSSON

How biblical!

ASTRID ROSENQVIST

I meant of each other. No snake led us astray. But an ambitious man always has problems...

BENGT HJALMARSSON

With an ambitious woman.

ASTRID ROSENQVIST

What else is new? We were clever. So clever. We even wanted to do something "for the benefit of mankind."

BENGT HJALMARSSON

And we wanted the world to know it.

ASTRID ROSENQVIST

Somehow, I was hoping that the retro-Nobel for the dead would be... purer.

BENGT HJALMARSSON

You were wrong.

ASTRID ROSENQVIST

At least the Retro-Nobel got us into the same room...

BENGT HJALMARSSON

As chairperson... you could've asked for someone else.

ASTRID ROSENQVIST

You could've refused. Why didn't you?

BENGT HJALMARSSON

For the same reason that you didn't pick a substitute.

ASTRID ROSENQVIST

Then... why are you so prickly during our meetings?

BENGT HJALMARSSON

And why are you so bossy?

ASTRID ROSENQVIST

We should learn to compromise...

BENGT HJALMARSSON

Something neither one of us was good at.

(Begins to exit, but as he passes her, he displays some paternal, non-erotic gesture—perhaps kissing her on her head and exits).

Astrid Rosenqvist slowly walks off, shaking her head. ULF SVANHOLM enters, sits down. *KALLSTENIUS enters. SVANHOLM gets up and moves to leave the room. KALLSTENIUS sits down and calls to SVANHOLM.*

SUNE KALLSTENIUS

That was a pretty good paper you published the other day.

ULF SVANHOLM

(Suspicious)

Pretty good?

SUNE KALLSTENIUS

All right... damned good.

ULF SVANHOLM

Why the compliment?

SUNE KALLSTENIUS

It wasn't meant as a compliment... it's a factual observation.

ULF SVANHOLM

(Pleased)

You mean that? *(Brief pause)* Why tell me now?

SUNE KALLSTENIUS

Astrid was right... "bury the hatchet."

ULF SVANHOLM

Hmm.

SUNE KALLSTENIUS

Ulf... you're carrying a grudge too far.

ULF SVANHOLM

I?

SUNE KALLSTENIUS

Okay... okay. We. You've always blamed me for holding up your paper. I was only doing my job.

ULF SVANHOLM

You did nothing but nit-pick! That I discovered a great new catalyst for a reaction that no one could make go before—that wasn't enough for you!

SUNE KALLSTENIUS

I wanted you to do better.

ULF SVANHOLM

(Sarcastic)

Decent of you!

SUNE KALLSTENIUS

I wanted you to understand how it worked. On the atomic level.

ULF SVANHOLM

And while I was trying to figure that out, you let your pals at Stanford scoop us.

SUNE KALLSTENIUS

I knew nothing about the Stanford work.

(Conciliatory)

Ulf, I didn't talk to them. You can't go on blaming me. *(Pause)* But maybe...

ULF SVANHOLM

Yes?

SUNE KALLSTENIUS

I just didn't realize how important that catalyst was.

ULF SVANHOLM

I might as well confess something.

SUNE KALLSTENIUS

A confession isn't necessary.

ULF SVANHOLM

I told Bengt about it.

SUNE

And?

ULF

He took your side... he thought you looked too honest.

SUNE KALLSTENIUS
(Pleased)

And what did you say to that?

ULF SVANHOLM

That all scientists wear masks.

SUNE KALLSTENIUS
(nods)

In that case for a change, why don't you take off yours... now?

ULF SVANHOLM

That's asking for too much too soon.

SUNE KALLSTENIUS

Okay, well, how about shaking hands?
(Stretches out hand)

(Astrid Rosenqvist enters and is surprised to see them shaking hands).

ASTRID ROSENQVIST

I didn't think I'd live to see the day—

(Both men, embarrassed, drop their hands).

SUNE KALLSTENIUS

He came to his senses.

ULF SVANHOLM

And he, for a change, liked some work I did.

ASTRID ROSENQVIST

If you two really made up, I don't need to know why. Just do me a favor, both of you: agree on one candidate

SUNE KALLSTENIUS

You aren't trying to maneuver the committee by any chance... are you?

ASTRID ROSENQVIST

Me... an innocent theoretical chemist?

SUNE KALLSTENIUS

Yes... you. You're pushing for a consensus, when we should be making a tough choice: one winner only. The Literature Nobel is hardly ever shared!

ASTRID ROSENQVIST

But that's preposterous! It's comparing melons with... (*searches for the right word, finally finds it*)... mangoes!

ULF SVANHOLM

I suppose literature is the mango? It certainly has more taste.

SUNE KALLSTENIUS

(*Infuriated*)

I'm dead serious.

ULF SVANHOLM

But so am I. The literati don't worry about priority... and if they'd had a Retro in Literature, it would've gone to Shakespeare or Dante or Cervantes... or whoever... but not to all three. If Shakespeare had never lived, "King Lear" could never have been written. Without Dante, there would be no "Divine Comedy." Without Cervantes—

SUNE KALLSTENIUS

So what's your point?

ULF SVANHOLM

Simple! Consider Oxygen. If Scheele or Priestley or Lavoisier had never lived, somebody would have discovered Oxygen. The same with Newton and gravity, with Mendel and genetics—

SUNE KALLSTENIUS

So why give a Nobel at all in your melon patch? If it would happen anyway, why worry who is first?

ULF SVANHOLM

Because science is done by scientists... not machines... and scientists just crave recognition.

SUNE KALLSTENIUS

But we still haven't agreed what "being first" means: is it the initial discovery... the first publication... or full understanding?

(Bengt Hjalmarsson and Ulla Zorn wander in during the preceding exchange. As they do Astrid sees them together and sits dejectedly, angrily.)

BENGT HJALMARSSON

(Ironic)

A very insightful question. *(Pause)*. Now let's see, where exactly was it that Columbus thought he was sailing?

ULF SVANHOLM

(Snaps at Hjalmarsson)

Who cares? Our Vikings got there first...

ULLA ZORN

Yes. And they found people who'd already come thousands of years earlier.

END OF SCENE

Scene 18. *Funereal darkness except for spotlight on Mme. LAVOISIER downstage, quill pen in hand about to write a letter, and M. LAVOISIER downstage. Each in apparent soliloquy*

LAVOISIER

My dear wife... In the solitude of a cell... I do not just reflect on my sudden fall from grace, but on our life together.

MME. LAVOISIER

My dear husband ... like my father, you recognized a young girl's talent... you did not snuff it out. You were not bored when I played the harpsichord for you in my father's house...

LAVOISIER

You were not bored when I spoke to you of chemistry, of geology, of astronomy...

MME. LAVOISIER

Remember when we played the "Game of Good Fortune?"... I wondered where the arrow would stop. At which word: "Wisdom"...? "Convent"...? "Marriage"...

LAVOISIER

When we played the Game of Good Fortune, I hid from you a magnet's power whereby I moved the arrow to (*Pause*)... love. A word I had not used before. And then I married you...

MME LAVOISIER

And I became your trusted partner. But "love" I never heard you say again.

LAVOISIER

I had no time for idle pastimes... even for children. I thought you understood...

MME. LAVOISIER

(Softly)

Science and public service were your *métier*. Still...

LAVOISIER

I always felt you were satisfied, yet for you there were other men.

MME. LAVOISIER

Love is what I missed.

LAVOISIER

I offered you more. True partnership. (*Pause*). No other man could do the same....

MME. LAVOISIER

Pierre Du Pont offered love... for seventeen years. No matter... *(Pause)* I did not dare explain to you what I had done. Now, before it is too late, I must write of it.

LAVOISIER

In prison I now understand what I had neglected in my careful weighing: Ambition without love is cold.

MME. LAVOISIER

I've never loved another man.

BLACKOUT

Scene 19. (*Stockholm, 2001; Royal Academy of Sciences, two weeks after last scene. Ulla Zorn is fiddling with her laptop for a computer-controlled power-point presentation, which none of the others properly notice. ASTRID looks around the table. She has their attention*).

ASTRID ROSENQVIST

You know, there's a simple solution to our problem: give this first Retro-Nobel Prize for Chemistry jointly to all three. And cite them for the chemical revolution rather than the discovery of oxygen.

There is a silence around the table as they absorb her remark.

BENGT HJALMARSSON
(Dismissive)

A cop-out.

ULF SVANHOLM

Including Lavoisier? Who failed to credit the work explicitly reported to him by Priestley and confided to him in Scheele's letter?

ULLA ZORN
(Turning to them from the projector)

Which Lavoisier had never seen.

SUNE KALLSTENIUS

What did you say Ms Zorn?

ULF SVANHOLM

How can you be so sure?

ULLA ZORN

I was intrigued. So I made a quick flight to America. To the library of Cornell University.

BENGT HJALMARSSON

You wasted your time. I know all about the Cornell collection of Lavoisier papers. It would also have saved you some money.

ASTRID ROSENQVIST

The money came from one of my research grants.

BENGT HJALMARSSON

You were always loose with money. (To ULLA). And what did you find there?

ULLA ZORN

A book.

BENGT HJALMARSSON

(Sarcastic)

A book... in a library? What a surprise!

ULLA ZORN

The book was called "*Histoire de Théâtre.*"

SUNE KALLSTENIUS

How is a book going to help us? A book about theatre at that.

ULLA ZORN

I'd like to show you some slides.

(She presses a couple of keys on her keyboard)

The object I found there only looks like a book.

(Slide 311 appears on the screen, the first picture of the nécessaire, closed, in the hands of a woman, causing general consternation among the committee members except Astrid, who is smiling)

It's Madame Lavoisier's *nécessaire*... a travel chest, disguised as a book. To my knowledge, historians had not mentioned it before. But I saw it in the catalog of the 1956 "*Souvenirs de Lavoisier*" sale held in Paris. And then found out that the Cornell Library had purchased it in 1963. *(Pause)*. So I decided to take a look—

ULF SVANHOLM

Intuition?

ULLA ZORN

(Sharply)

Why not call it hands-on research by a historian?

(They all continue to gaze at the slides)

Here it is opened

(Slide 28)

Look at all the compartments,

(Uses laser pointer to identify the various items)

... with thread, needles, combs, pens, and bottles for perfumes and ink...

(Slide 25)

Even a ruler, crammed in a slit, like a Swiss Army knife.

ULF SVANHOLM

I'll be damned!

ULLA ZORN
(*Pleased and excited*)

When you lift the tray out,
(**Slide 26**)

there is place for stationery. I checked the watermarks. The paper is actually after Mme. Lavoisier's times... her heirs must have used the *nécessaire*. The broken mirror in the lid intrigued me...

(**Slide 27**)

There was a space behind the mirror. I poked gently around it. I found a paper. This one...

(*Waves paper in the air*)

SUNE KALLSTENIUS

What is it?

ULLA ZORN

A letter... this is a photocopy, of course... a letter apparently never sent. (*Pause*). From Madame Lavoisier... to her husband.

BENGT HJALMARSSON
(*Impatiently*)

What does it say?

ULLA ZORN

She writes...

(*At this point the lights dim on the frozen committee, except for Ulla Zorn. Lights rise on Mme. Lavoisier, upstage*)

MME. LAVOISIER

My dear husband. In these difficult times, in the separation forced upon us by the Revolution, I reflect on the past. I return time and time again to Apothecary Scheele's 1774 letter...

ULLA ZORN

Apparently she intercepted Scheele's famous letter... remember she handled most of Lavoisier's correspondence.

MME. LAVOISIER

Now that the brilliance and accuracy of your studies have convinced the world of the central role of oxygen in chemistry, now that phlogiston lies in the graveyard of discarded theories... I will not speak of the diehards such as Dr. Priestley who continue to preach it. (*Pause*). I ask you now to forgive me. I could not show Apothecary Scheele's letter to you, my dear husband. It would have taken the wind out of your sails, you, who were so close.... Our priority rested on my hiding it. Forgive me, but I could not destroy it.

(Lights fade on Mme. Lavoisier)

ULLA ZORN

Note! She didn't say "your priority"... but "our." She filed the letter, without showing it to him. Or actually hid it, which may be one of the reasons why it surfaced only over 100 years later when Grimaux found it.

BENGT HJALMARSSON

And you waited until now to tell us?

ASTRID ROSENQVIST

She told me—

BENGT HJALMARSSON

(Outraged)

And why not me... or the rest of us?

ASTRID ROSENQVIST

I thought Ulla was entitled to announce her discovery herself. If anyone is to blame... blame me.

BENGT HJALMARSSON

The question was not addressed to you!

(Faces Ulla Zorn)

Why? To show how clever you are? *(Softer)*. I would have told you that if you'd had the courtesy to inform me first. Lavoisier is my man.

ULLA ZORN

I meant to help...

BENGT HJALMARSSON

(Warmer tone)

Why was her letter in that *nécessaire*? Why was it never sent?

ULLA ZORN

I asked myself the same question.

BENGT HJALMARSSON

And?

ULLA ZORN

I didn't tell you yet the date of Mme. Lavoisier's letter. It was just before Christmas, 1793, when Lavoisier is in jail, a few months before his execution.

BENGT HJALMARSSON

(Gently)

Nineteen years after Scheele's letter came.

ULLA ZORN

During the worst of times, with her husband in prison... she wrote to him... returning to what she had done years earlier. But when she did, it was no longer safe to send that letter.

(Ulla Zorn sits back. The committee is pensive).

BENGT HJALMARSSON

One letter she could not send... another she could not burn.

END SCENE

Scene 20. *Stockholm. Committee room. One week later. BENGT stands up and prowls away from the table heading for ULLA ZORN. She looks up at BENGT who is looking down at her.*

BENGT HJALMARSSON

(Low voice)

I owe you an apology about Mme. Lavoisier's letter. I was boorish...

ULLA ZORN

(Pleased)

I would have used another word... but... *(pause)* thanks...

BENGT HJALMARSSON

May I pay you a compliment?

ULLA ZORN

(Playfully)

Do you think I'll be able to handle it?

BENGT HJALMARSSON

(Seriously)

I wish I'd found that travel chest...

ULLA ZORN

(Pleased)

That is a compliment!

BENGT HJALMARSSON

Ulla. *(Hesitates, drops voice)*. May I invite you—

ASTRID ROSENQVIST

(Sharply)

Bengt! First things first! Would you please join us?

BENGT HJALMARSSON

(Touch of irony)

"First" in the chair's eyes or mine?

(Rosenqvist waits until Hjalmarsson sits down)

ASTRID ROSENQVIST

I want to finish the business today, gentlemen. So it's time for a formal motion. *(Looks around)*. Bengt... do you want to start?

BENGT HJALMARSSON
(*With exaggerated formality*)

I propose that the Royal Swedish Academy of Sciences select Antoine Laurent Lavoisier, the architect of the chemical revolution, for the first retro-Nobel Prize in Chemistry.

(*Reverts to ordinary tone*).

I hope that's formal enough.

SUNE KALLSTENIUS

Mine is less formal, but direct: I propose Carl Wilhelm Scheele for first discovering oxygen. (*Pause*). A humble man too, who didn't indulge in hype or self-promotion, despite holding the record for discovering at least five elements... including chlorine and manganese.

ULF SVANHOLM

If Sune wants to bring in other inventions, what about my Priestley's discovery of laughing gas, carbon monoxide, and nitrogen? Or carbonated water and pencil erasers? Alfred Nobel would have been pleased by Priestley's sense for the practical.

ASTRID ROSENQVIST

Your nomination, please!

ULF SVANHOLM

What are a few months between friendly competitors? Clearly, we have a case of simultaneous discovery. I propose Scheele and Priestley. Full stop! Lavoisier? He may deserve it—but not for the discovery of oxygen.

BENGT HJALMARSSON

I nominated him as the Father of the Chemical Revolution... that happened to have come from oxygen! Lavoisier's failings are clear, yes... but he brought about true change.

ULF SVANHOLM

Ignore moral lapses?

BENGT HJALMARSSON

It's happened more than once with our regular Nobel Prizes.

(*Bantering*)

Only innate delicacy prevents me from naming some examples.

ASTRID ROSENQVIST

(*Laughs*)

Delicacy, Bengt, is not something I would have listed among your many virtues!

BENGT HJALMARSSON

In that case, let me be blunt: Good or poor ethics simply can't be weighed on the same scale with good or poor science!

ULF SVANHOLM

But what a precedent for the first Retro-Nobel!

ASTRID ROSENQVIST

Please! We've had it with the arguments for and against. Now we need to make a decision. There are seven combinations of the three names that one might imagine: the three men alone... three pairs... and all three together. (*To Bengt*) I admit I am relieved that Lavoisier never saw Scheele's letter.

ULF SVANHOLM

Does it change the facts? We all know Lavoisier was not the first to discover oxygen!

ASTRID ROSENQVIST

You still have to understand what you discover. Do you realize that as late as 1800 your man Priestley still wrote a book entitled "The Doctrine of Phlogiston Established and that of the Composition of Water Refuted"? (*Pause*). In other words, "down with H₂O" but "onwards with mumbo jumbo."

ULF SVANHOLM

You're too hard on my experimentalist.

ASTRID ROSENQVIST

The world needs physical chemists, like Lavoisier... or even better... theoreticians.

ULF SVANHOLM

Like you?

ASTRID ROSENQVIST

They could have done worse... but we all know what role women played in chemistry at that time. Madame Lavoisier got about as close as was realistic. Now. Decisions.

(*Taps table with pen*).

We have four committee members... and four proposals: Lavoisier alone... Scheele alone... Priestley plus Scheele... and finally all three together. I presume that each of you would still vote for his original recommendation?

(*Everyone nods assent*).

Even if I change my vote, and pick one of your choices?

(*The men all shake their heads*).

That won't get us far. (*Pause*). Here is a way to resolve our problem: We all vote for a pair of candidates.

ULF SVANHOLM

Three options only? Lavoisier-Scheele, Lavoisier-Priestley and Priestley-Scheele?

SUNE KALLSTENIUS

(Disdainfully)

Brilliant! But why waste time going through your exercise of voting for pairs?

ASTRID ROSENQVIST

Simple. It forces everyone to think about another candidate... while still holding on to their favorite.

BENGT HJALMARSSON

But what if we don't have second choices?

ASTRID ROSENQVIST

(Sharply)

You... more than anyone else in this room... should know that in life, we mostly end up with second choices.

BENGT HJALMARSSON

(Mockingly miming her tone)

You... more than anyone else in this room... should know that I can't be forced into a decision.

ASTRID ROSENQVIST

(Equally mocking tone)

Which will never stop me from trying to persuade you... all of you... to arrive at a consensus. *(Looks around)*. Do I have your agreement?

(Kallstenius and Svanholm look at Rosenqvist. One shrugs, one nods).

ASTRID ROSENQVIST

Bengt?

(Hjalmarsson looks at her but says nothing, whereupon Rosenqvist rises and walks to him. Continues in low voice)

We both know what Lavoisier did.

BENGT HJALMARSSON

So?

ASTRID ROSENQVIST

Do we really dilute Lavoisier's credit by adding one other man? Earlier on, you said neither one of us was good at compromise. How about demonstrating that you were wrong?

(Hjalmarsson shrugs, followed by reluctant nod, then turns to look away. Svanholm approaches Kallstenius .)

SVANHOLM
(Whispers)

Did you hear what she said?

SUNE KALLSTENIUS

I sure did.

ULF SVANHOLM

Out of the question! If Lavoisier gets the nod, then only Scheele or Priestley can share it.

SUNE KALLSTENIUS

I could live with that... if Scheele is the other.

ULF SVANHOLM

But what if he is not? What if I vote for Lavoisier and Priestley and so do they?

SUNE KALLSTENIUS

I'd scream!

ULF SVANHOLM

Before or after the vote has been counted? A lot of good that will do you.

SUNE KALLSTENIUS

So what's your proposal?

ULF SVANHOLM

Let's both vote for your man... and my Priestley.

SUNE KALLSTENIUS

I'll have to think about it.

ULF SVANHOLM

You better do it fast...

ASTRID ROSENQVIST
(To Zorn)

Ulla... would you distribute the ballots?

(After giving ballots to Kallstenius and Svanholm, Zorn heads for Hjalmarsson, but Rosenqvist intercepts her. Takes ballot and hands it personally to Hjalmarsson. Very gently)

Please, Bengt... please. Two names. Do Madame Lavoisier that favor.

(Hjalmarsson looks at her, then takes the paper, freezes).

(In the silence, the shadowy figure of MME. LAVOISIER appears, approaching Hjalmarsson until she practically touches him)

(Hjalmarsson starts scribbling on his ballot as do the others. Ulla collects the votes; Astrid grabs them from her, quickly counts them and then quietly wags her head approvingly)

SUNE KALSTENIUS

So what's the vote?

ULF SVANHOLM

Come on, Astrid, tell us. This isn't Florida... with Bush versus Gore.

(Hjalmarsson walks over to Rosenqvist and without asking her permission takes the ballots out of her hand. He scans them quickly and then drops them in front of her)

BENGT HJALMARSSON

(Wags his head, more or less satisfied)

It could have been worse.

LIGHTS DIM

MME. LAVOISIER

(Reflective, mature tone throughout)

Nothing is created, nothing is lost

(Pause)

Yet nothing is simple. Surely not a world that guillotined my father

(Her voice breaks)

and my husband in one day.

(Pause)

Not even the burning of a candle or the breathing of a mouse.

(Her voice gains strength)

My husband understood that... and posterity will recognize him for it!

(Pause)

Of course... some will ask: What good is such recognition?

(Smiles to herself)

Oh, much good will come from our oxygen... kings will surely tax it.

(Pause, then turns serious)

But after death? Other savants will carry on where the gauche apothecary... and the priestly chemist... and my husband stopped.

C. Djerassi & R. Hoffmann, "Oxygen (Oxygen-15 version)

(Pause).

Imagine what it means to understand what gives a leaf its color! And how it turns red.
What makes a fever fall, a flame burn.

(Pause)

Imagine!

END OF PLAY