

Elements of a new thermodynamics

(Preface, 1930) Marcel Pagnol

When you have made a decision, you are very happy, very light: but it is difficult, to make your choice, and to control your own life. For me, now it's done.

Topaze, Marius and Fanny are written, and edited to the best of my ability: I'm leaving the stage, because I've had something to do for a long time, and never had the time to do it. I want to tell the reader, and give him my reasons.

I received an education, literary, I did my "humanities", like everyone else. That is, at twenty-five I had a number of university degrees, I could read Homer, Virgil, Goethe and Shakespeare in the text. But I believed, in good faith, that the square of three was six.

I had, of course, taken mathematics and science courses in high school: but they were courses for the use of "literals", truncated, summary courses, and which slipped on reasoning to arrive at formulas, because we were unable to follow the reasoning, and that moreover we did not have time, in two hours a week, to learn all the geometry, the algebra, the arithmetic, the physics, the chemistry and astronomy. Our good teacher, who was called Mr Cros, and who sold us (at a loss) mimeographed lessons, had for us a lot of tenderness and a lot of contempt. When he was explaining some nice formula to us, he would say to us: "I cannot explain to you how it is done, you wouldn't understand; but try to remember it by heart. I assure you that it is correct, and that it has a solid foundation. In short, this was not a science class: it was a scientific religion class, it was a continual revelation of "mysteries."

This is why, ten years later, I one day opened a book on physics; that's why I read it in its entirety.

Sometimes when a student asked him a question, Mr Cros would try an explanation; but quick, light, twisted: without getting to the heart of the matter, and like a well-bred man who is forced to tell an obscene story in front of ladies. He was "gassing".

Among the formulas he gave us, some were lovely. He declaimed from the top of his platform:

"The circumference is proud
To be equal to $2\pi R$,
And the circle is all happy
To be equal to πR^2 ."

And he was smiling. As if to say: "Since you are "literary", I am giving you poetry."

After such a poem, he looked at us, joyful and delighted, as if to say: "Huh? You didn't know him, that one?" And the whole class, astonished by the pride of the Circumference, and won over by the complete joy of the Circle, expressed their admiration with long bellowsings.

Mr Cros would then strike his pulpit with an enormous wooden compass, and say: "Come, Gentlemen, do not despise the Muse, when she comes to the aid of Science."

He also said: "The volume of the sphere,
Whatever we can do
Is equal to $(4/3)\pi R^3$,"

It was taking a time twenty seconds.

He watched the class, from Yves Bourde to Averinos. Then, in a low voice, forefinger raised, eye half closed, he added:

"Even if the sphere was made of wood."

He gave great importance to this final verse; and he hurled it with a sort of triumphant severity. But he was no longer speaking to us: he was speaking to the Sphere Itself. He warned her, he warned her; of whatever subterfuge she used, and however great her bad faith; whatever matter it changed, like Proteus; whether solid, hollow, heavy or light, of steel or graphite, chalk, manganese, copper, plaster or tinned zinc; and even (supreme refuge) "were it of wood", it would not escape the implacable formula in which geometry had locked it: it was taken, measured, defeted, just by pressing the trigger of this terrible weapon.: $(4/3)\pi R^3$. Even if it was made of wood.

She, round and plump, you laid her corpse on a flat page, just by pressing the trigger of this nickel-plated weapon: $(4/3)\pi R^3$, EVEN IF IT WAS MADE OF WOOD.

After this triumph, Mr Cros took another time. His face relaxed; then, debonair, conciliatory, generous, and rolling the "r" with less ferocity, he added:

- We can also say: "Even if it would be made of wood." [there is no "r" in English]

And he pronounced: "boa". ["wood" is the translation of "bois" which is pronounced "bwa"]

The physics and chemistry lessons were given by M. Oneto.

He had a little black goatee, he looked like Mephistopheles, but much younger; he had great authority, and great kindness.

Like Mr Cros, he rolled the r; like Mr Cros, he had a kind of affectionate contempt for us.

A perfectly imbecile program demanded that he should teach, in 150 lessons, all of Physics and all of Chemistry, to fellows who did not know how to solve a first degree equation, and who came to him straight from the course of Philosophy: that is to say completely skimmed by Beckerley, Fichte-grain-de-sable, the categorical imperative, Pragmatism, Auguste Comte and Baralippton.

So, with a lot of patience, and to amuse the great idiots that we were, he was experimenting. When I think of these science classes I see a piece of wire burning in a jar of oxygen; a mercury lamp that turns the bard, yet so black, of M. Oneto green; a test tube which he shakes, saying: "You will see: it will turn blue" (and it will turn the brightest red); finally, I see - the apotheosis of my physics classes - a panic-stricken piece of sodium which shoots lightning broads on the surface of a sort of chamber pot, and which throws sudden flashes, with irritated spitting, within an underwater fire.

The epic poems of Mr Cros and the sparkling conjuring of Mr Oneto allowed me to pass my baccalaureate, without understanding anything in mathematics or physics. But these two good masters had taught me, without my knowledge, the only thing they could teach me that was crucial: they had taught me the desire to learn.