
ALCHEMIST

14 KARAT LEAD

Alchemist: medieval magician, searching for immortality, searching for the way to turn base metals into gold.

Of course, we are far, far away from the old white-bearded alchemist in his damp and dusty cellar, surrounded by bubbling cauldrons and human skulls. But, whether we like to admit it or not, he is the ancestor of every chemist alive today. He worked with the elements of the earth, and tried to create something better out of what he had. He has given us the tradition of searching -- and isn't searching what Chemistry is, after all?

Maybe we are too afraid, nowadays, to be a little like our alchemist-father. If we have a procedure to follow in a laboratory, we often attack the problem far too dispassionately. The word "passion" may sound out of place in a lab...then call it "enthusiasm" or "excitement;" the meaning is the same, and it should not be out of place. If we have something to learn, we often go about it with a feeling of drudgery, if not dread. If only we could feel as the alchemist felt, even though he was doing an impossible task. He had what too many of us in chemistry lack -- a sense of wonder. If only we were capable again of marvelling at the wonder of what we do, at the power a scientist can possess. A way must be found to rekindle the fire of the alchemist -- to take our iron actions and leaden thoughts and turn them into gold -- to see them again as something beautiful.

--Teresa Amabile

THE IDEA THAT RANG THE HEARTS OF THE LOVING AND THE BEWILDERED

The banner was waved, the drums were beat, and inward, each had a cry for help. The turmoil grew and made those who were divided one.

One can call this the unifying spirit of man but that poor soul across in a different land sits beneath a tree with tears upon his eyes from his bleeding soul.

He believed he would work in America; do the best, learn the best and produce the best for he was one of dedication. His heart still strives for this but now the bullets are flying and he has lost his sight

for that which he loved and played with he now has to kill. He's now in a battle; the person from the other side bewildered by his fighting force wonders why the gun and why the hate.

They see one another, their rifles drop and their love is shared in a unified hug.

--D.J.B.

Integrated Labs
A Possibility?

In the present Chemistry Curriculum, the student's laboratory work is associated with the particular course that he is taking at that time. The freshman takes a General Chem Lab while the sophomore Organic student takes an organic lab, and so on. In this system a student may come to feel that the different branches of chemistry (such as Physical, Organic etc.) are not related and dependent upon one another.

This summer I was offered a position to do organic research under Dr. Frank Dinan. (The prospects for student research grants for summer research will be detailed in a later issue.) In the progress of the research it was necessary to determine the kinetic aspects of the reaction I was working on. The concepts of kinetic theory (in Physical Chemistry) were therefore used as a necessary and natural part of my organic research. To see the fields of organic and physical chemistry blending naturally in my research allowed me to understand the unnatural distinctions I had been making between the fields. Consciously or not, I had considered them as two different, non-complementary sciences.

I was fortunate in having the opportunity to experience the overlap between the different fields of chemistry. It allowed me to see that they complement one another and are dependent on one another if meaningful and complete studies are to be done.

There is a possibility that labs based upon these same principles could be conducted, in the undergraduate courses. Lab experiments could be devised to include aspects of many of the fields of chemistry, instead of concentrating upon one field, as is done now. A simple example of this: run an organic reaction while studying temperature effects on the rate of the reaction (a combination of organic and physical chemistry). Labs of this type would give the student a better appreciation of the value of chemistry and how the different fields of chemistry are related.

The Alchemist calls for students to voice their opinions on this idea. If you desire this type of integrated lab, or if you prefer the present system, or if you have any further ideas, we would like to know. Please submit your written opinions to the Alchemist mailbox on the 2nd floor of the Science Building or contact me personally at any time.

-- Mark Kramer

MOVE INTO THE VISIBLE RANGE OF THE SPECTRUM:
JOIN THE ALCHEMIST STAFF!

YESTERDAY, A FAMILIAR FACE...

The other day a familiar face walked into my class. He discussed a problem that is prevalent on campus -- one which, I am sorry to say, I have taken a major hand in formulating. This is the lack of communication between the upperclassmen and underclassmen.

How many students do you know who are in chemistry and are not in your graduating class? This was the problem that I was confronted with and it is one of great concern in the Chemistry department.

The core curriculum is so designed that it is nearly impossible for Sophomores to take courses with any other class but Sophomores. Or Juniors with anybody but Juniors. The problem is created by the over-emphasis placed upon the prerequisites for each subject.

If the core curriculum were reduced and the Chemistry majors allowed to select more of their own subjects, there might be more interaction between the classes.

As a transfer student I can tell you what the school thinks of the prerequisites. After transfering from E.C.T.I. to Canisius, Canisius transfered several of my subjects. Analytical Chemistry and Physical Chemistry are the ones which I am concerned with. Canisius accepted my credits for these subjects but failed to give me credit for Organic Chemistry and Second Semester math; each are prerequisites for the subjects mentioned.

If the Chemistry department could reduce the number of prerequisites required for newly formed electives, perhaps the students in Chemistry would be a much tighter unit. Not only in the freshman class and sophomore class, or junior or senior, but a unit of all chemistry students. In short it would give a familiar face a name that you could call upon when in trouble.

LEONASE CATALYZES STUDENT CREATIVITY -- CH 237

(Ed. note -- If you don't understand this article after reading it once, read it again. I think it will be worth your while.)

In excuse for this inept attempt at evaluating a certain chemistry course, the author offers the tepid response of those students engaged in the course. Enthusiasm bordering on the indifferent, apparent even in the cases of potentially better auditors, necessitated the move from a relatively safe, inactive student to a budding critic. This was in order to stabilize the increased regard proffered by an educator for his students so that this trend might not revert to its labile form and become subject to breakdown.

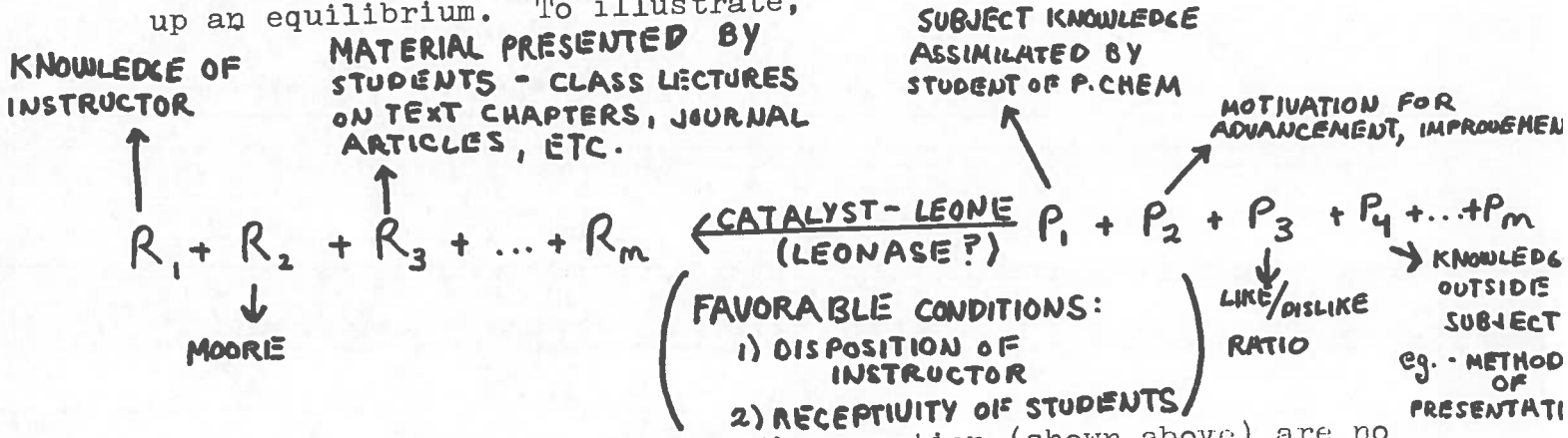
The course in question -- catalogue identification, unavoidable due to the number of sad groups described -- is Ch 237, Physical Chemistry, taught by Dr. Jim Leone.

Learning is a process whereby information is transmuted into knowledge and can be graphically represented as such. That is,

let R=information
P=knowledge
(the let is significant here in that people think a choice is being made)

$$R \longrightarrow P$$

The types of information involved may be the available knowledge of the teacher and/or class notes, and the written text(s). The knowledge produced, in order for the reaction to be termed a moderate success by prevalent criteria, must be knowledge of the subject assimilated by the student. Discounting disintegration of product with time into unrelated or unknown reactants by a different mechanism, the reaction is usually recognized as irreversible due to the possible basic nature of a course, the instructor's theories on education, the compliance of the students, or a combination of these factors. At a point in its history the Chemistry department was not excluded from the population patronizing this process. In contrast, Dr. Leone recognizes the reversible nature of the educational process and attempts to set up an equilibrium. To illustrate,



The secondary products of the reaction (shown above) are no longer negligible but are of significant value. It can be understood that an increase in P_2 may contribute to an increased production of P_1, but, in addition to this and contrary to accepted rules, an increase in secondary products $P_3 \longrightarrow P_n$ may effect a better yield of P_1. (Explanation -- this is not a generally accepted situation).

A simplistic view of the course may be presented here but it adequately explains the innovative expansion sponsored by Leone.

As yet, this writer feel that a dynamic equilibrium has not been established because of less than optimum conditions -- specifically the receptivity of the students and the communication of their opinions. If anything kills this course, student apathy will be the main factor. Granted that some students have already participated in the guest lecture series and may have done well or else blurbed. However, an a posteriori error analysis of both systematic and random errors would be the most valid

evaluation thus far.
Lacking this type of an evaluation, the present piece of work will have to suffice.

--Suzy Jackowski

TYRANT REIGNS IN STAGNATING SWAMP

Dr. F. J. Dinan, chairman of the Chem Department, has cut our throats. He has bound and gagged the Chemistry Department into submission. We, the students, cannot have what we need to meet and conquer the intellectual challenges presented by the world of Chemistry. Why does he act in this manner? Can't he see that we are stagnating in a swamp of superficial learning? Why is he doing this to us?

He can act in no other manner. As administrative chairman of the Chemistry department he must look upon the lack of student initiative and support (from all the classes) for new ideas as a student mandate for support of the status quo, a stagnating swamp. As a man, he realizes that students desire reform and revision in the Chemistry Department but acting as department chairman he cannot initiate new ideas unless he receives support from the student body. Students do not approach him with new ideas. Students do not voice their dissatisfaction with the present system to him. If dissatisfaction is voiced the reasons are usually personal.

We, as students, must take the initiative for change. Change is needed. If we want it we must be ready to work and work hard for it.

--Mark Kramer

ASH-GRAY RAINDROPS

Ash-gray raindrops
Rust my doors,
Seep through my ceiling,
Tickle my floors.

Year after year
All these feet plod the halls
Or dash down my staircases,
Scuff at my walls

I bear their explosions,
Put up with the fumes,
Watch them laugh in my corridors
And curse in my rooms

Don't they see with their living
How weak I have grown
Why can't they be happy
And leave me alone?

I'm taken for granted and not trusted, I'm told
(Signed, Horan-O'Donnell, over 30 years old.)

FEARFUL FOR HIS MARK

I, along with many fellow students in the Organic Chemistry class, am concerned with the related lab and feel in view of the fact that this lab (with which we are concerned) is being conducted in a college, wish it to be conducted on that level. We wish to be judged on the quality of our work and not on the time at which this work is done. We do see the necessity of pre-lab talks and safety regulations and do intend to respect them. We do wish, however, to be able to do the lab at the time most constructive for the individual.

--Fearful for my mark

THE INVISIBLE KNIFE

My eyes water in a futile attempt to ward it off. My lungs tighten. Each breath is a painful chore. I can sense the molecules hacking their way through the lung tissue toward the capillaries. I can count every one of the pores in my nose as they fire from the painful fumes. The nasal guards wither before their onslaught.

I glance quickly as I hear an agonizing shriek. Arms flailing for support, he rasps, "I'm blacking out!" But we go on. The throat dries and cracks. The lungs turn ever more numb. The nasal fire rages on. The head throbs as the blood stream carries the lethal poison to the brain.

Where am I? I've lost track. I can't remember. I'm lost in the vaporous cloud of my mind and can't open my eyes. I must have been working in the coke furnaces. The mine, it must have been a gas pocket we hit. No, it must have been San Francisco during the pollution alert. Someone turned the gas on. I've got it! Nerve gas. It was a plot to wipe us out. In our group were some of the most brilliant minds of science and medicine.

No!! Not gas. Something more subtle. I know now. How do I warn the living of this plan to sabotage our future brain power? A consciousness without form. I know, yet cannot convey. How can I tell them?

It was standard procedure for all of us to go through this. But THEY must have gotten hold of textbook manufacturing ... arranged each procedure so that it produces poisonous gases which maim our flesh and minds forever.

Week after week we suffered, inhaled , absorbed the death. No one, not one of us complained! We could have refused to go. But no one did. Suicide? Murder? Stupidity?

I can not stop you, I can not warn the others of you. Thus, I congratulate you. You, Dr. Deutchnin; you, Dr. Vaughreth.

I thought you were on our side. And you, you whose name be it sin to mention! But perhaps you did not know. I am sorry. Maybe no one knows. I apologize for accusing you all, all honest men. How could you know?

Perpetual sinus congestion? Open your noses! Read the lab books! Look at the chemicals used and by-products formed. Ah, yes. Harmless! Harmless, so are they all, all harmless chemicals. We are nauseated, indeed sick during and after laboratories. It must be because we....., well, because..... maybe we.....

Hoods! Hoods! "Everybody oughta have a hood" instead of a body to absorb the poisonous fumes of our experiments.

We are idiots to walk, walk willfully into the death chambers without a fight.

RIGHT ON BABY

DEATH TO THE STUDENT PIGS

NO ONE SEES THE INVISIBLE KNIFE

Presentation of Crowdle Award

On Wednesday, September 23, 1970, a new tradition was begun in the Chemistry Department. The first presentation of the James Crowdle Memorial Award was made to Dr. Paul Gassman, an organic chemist at Ohio State University.

The award, named for an esteemed member of our Chemistry department , was initiated last year in conjunction with the

Canisius College centenniel. Recipients, chosen every three or five years, are Canisius alumni who have distinguished themselves in the field of chemistry. The decision is made by a volunteer board of faculty and students, and is based on the alumni's publications, positions, and citations.

This year's presentation was made at a dinner attended by student officers, faculty, and various guests. Dr. Gassman was presented with a silver engraved cup, and a plaque bearing the names of recipients is to be hung in the science building.

--T.A.

Chemistry Liberation Front News

For too many years science and scientists have been used by bourgeoisie industrialists, the military, and other imperialistic forces to exploit and oppress the peoples of the world.

To create a unified organization to combat this exploitation and to liberate both science and all the people, a group of us Chemistry, Biochemistry, and Pre-Med students at Canisius have formed the Chemistry Liberation Front. To coordinate our efforts, we have established the CLF 12-point Program for Action.

1. We shall create our revolutionary chemistry everywhere.
   We shall make use of technology in such a way as to expand everyone's free time and to begin to eliminate stupid, alienating work altogether. We must defy reactionary restrictions upon inventive experiments. We will practice, we will experiment, we will discover, and we will create a new society. Power to the imagination!
2. We will fight military and capitalist imperialist abuses of science to kill, oppress and exploit the world's peoples.

   Out of the libraries
   Stride the slaughterers.
   The mothers stand
   Clutching their children, and
   Stare searching the skies numbly
   For the inventions of scholars. -B. Brecht

   We will refuse to cooperate with the military-industrial complex imperialists who seek to organize production for the profit of a few rather than satisfy the needs of all. We will deny the war machine the chemistry it needs to feed and maintain the war effort. Death to the death science! Life to the life science!
3. We support the struggle of biology, physics, and other science people against capitalist and military exploitation of their knowledge.
   We will work together for our communal liberation.

4. We will struggle for the full liberation of women in science as a necessary part of the scientific revolution.
   Economic oppression of women must cease. Women are half of humanity. We will have our full equality! We seek to develop whole human beings and to bring together the most free and beautiful aspects of women and men.
5. We shall resist the destruction of our physical environment.
   Breathe the filthy air. Dig Lake Erie (you can-- bring a shovel). We will not cooperate and work with the corporations, dedicated to profit, which pour tons of chemicals into our air and water every day. Power to the pollution fighters!
6. We will use our revolutionary chemistry for the production of basic human needs.
   Medical care, education, housing and food are not the privilege of those who can best afford them -- they are the right of every human being. Power to the revolutionary chemists!
7. We support the struggle of black and other third world peoples for equality in scientific opportunities.
   Capitalist imperialist exploitation and pollution has always brutalized black, brown, red, and yellow people the worst. We recognize and support their efforts to regain what is theirs and to apply revolutionary technology in their community self-improvement programs to provide better medical care, education, and housing for all the people.
   "The will of the people is greater than the man's technology." --Huey Newton
8. We support the working scientists and professors who are actively trying to build a better society for all people, free from military and capitalist exploitation.
   Industry and science must work on programs which serve the people, rather than on designing more efficient means of destruction and mass killing.
9. We will turn our chemistry courses into training grounds for liberation.
   Colleges must actively educate their students to combat imperialism and racism. We demand a critical chemistry and science program, relevant to the present crises, so that we can better use our revolutionary chemistry to transform the present social order. Power to the revolutionary professors!
10. We will expand and protect our revolutionary chemistry against facist repression.
    We relate to the humane and liberating potential of our revolutionary chemistry program. Our new technology is in direct confrontation with the values and practices of sterile plastik korporate Amerika. We will resist all restrictions which impede our experiments, and will encourage all science students to join us in practicing our revolutionary chemistry everywhere.
11. We will resist excessive liberal arts core curriculum demands which restrict our opportunities to learn.
    At present the yoke of core curriculum courses which hangs on every science student's neck prevents most of us from

taking more than four or five science electives. We demand more electives in science and fewer core curriculum courses so that we will be able to learn all the science which we will need to establish our revolutionary chemistry program. Power to the science student!

12. All revolutionaries are guided by feelings of love.
The revolution in science is about our lives. We will fight against social apathy and against the self-indulgent individualism which masquerades as "doing your own thing." We will experiment and find new ways to live and take care of each other as brothers and sisters.
There is only one reason for being a revolutionary -- because it is the best way to live.

Fellow science students! Unite and create a revolutionary chemistry! Carry out the program, choose the action and do it. Set examples and spread the word. Together we can win!

At the present time the Chemistry Liberation Front is holding meetings every Thursday at 3:30 in the Organic Chemistry Lab, where, under the guise of Dr. VanVerth's Org Chem Lab C we are teaching and learning revolutionary laboratory techniques. Future meeting dates will be announced.

--Chris Auer

A DEGREE IN STUPIDITY

The object of a college education is supposed to be the training of the mind. We presume that a person who presents himself at one of our institutions, and who remains with us long enough, is bound to go out that door a better and brainier man than when he entered. He is now capable, among other things, to enter upon the profession of his choice.

But it is indeed interesting to note that those who pursue such an occupation -- let us say, chemistry -- on one hand acclaim the virtues of college education in other fields, are skeptical about it in their own, and seem to hold to the idea that the young graduate, once he has had the nonsense kicked out of him, may make it is chemistry despite his college deucation. After all, a B.S. in pencil sharpening is better than no B.S. at all; but better still than a B.S. in pencil sharpening is a bachelor's degree in nothing in particular. They argue this way because they assume that a college training of the mind is superior to specific training in skills.

I recently tried to pin some of these people down, asking what it is that is learned in college; they eluded me. Will a course in chemistry give you this mysterious general training? Well, they say, a course in chemistry is a very good thing in its way, but of course unless you are going to become a professional chemist, you will soon forget your chemistry. Well you ask, is a course in English desirable? Yes, they respond. Of course, people don't generally read the classics except when they have to, so that, if you are going to lead a busy life you had better read the classics in college; otherwise you will never read them. If you press the point by asking some alumnus whether he still reads the classics, he will look uncomfortable, and probably evade the issue by recalling something about enjoying professor So-and-So's course in Shakespeare -- but he hasn't kept up his reading, though remembering the course with pleasure.

In fortification of the point I am making let me call to your attention the Roman society. Is not the dullness of theirs minds their most visible characteristic? What about the history of their speculative mind? It is blank. What of their literature? A copy. They have left not one single work of high imagination. The Greeks, in contrast, invented almost everything worth inventing, yet succumbed to the Romans. In general, therefore, the stupid people win and the clever lose. Is not this true at Canisius College where only by its superior stupidity, its "averageness," was it able to protect itself against violent upheavals?

An illuminating theory? Does it shed some light on the colleges? Colleges, where standards are set by the standards of the average, that is to say, that of the great middle body of the stupid as compared to the minority of clever people? Wouldn't it pay for the individual to advance his stupidity to the n^{th} degree? Perhaps a college of stupidity, where one could major in nonsense and take courses like "General fooling-around."

ANNOUNCING "THE ROOM" -- S-300
EQUIPPED WITH SOFA, EASY CHAIR, LIBRARY TABLES, LIBRARY CHAIRS, END TABLES, FLOOR LAMPS, BLACKBOARD, ASH TRAYS, COAT RACK, WINDOWS, WALLS, CEILING, FLOORS, AND A GLORIOUS PERSIAN RUG. KNOWN AS SEMINAR ROOM, RAPPING ROOM, HUMAN RELATIONS PREPARATION ROOM, LOUNGE, ETC.
COME IN FOR INFORMAL CLASSES, TO GET TOGETHER WITH TEACHERS, TO TALK TO FELLOW STUDENTS, SLEEP, READ, MEET PEOPLE, HAVE COFFEE, ETC. ***COME IN NOW -- ALWAYS OPEN TO ALL SCIENCE STUDENTS

MILHOUS' FOLLY

A long, long time back, when you and I weren't even thought of, existed a very supercilious alchemist named Milhous. He had a big white lab in a big white tower adjoining a big white castle. Milhous was charged by the king to find a way to make lead into gold (Pb $\longrightarrow$ Au). This of course was the ultimate goal of all his rival alchemists. However, dear Milhous and his trusted, rusted lab assistant Spiro Tee first had to find out what real gold looked like. So Spiro and the head knights of the king (Sir Melvin Lard, among others) descended upon the populace in order to remove the only real gold in the nation, putting small peasants out of work.

Poor Milhous! The king then assigned him another task. For 10 years the poor peasants had placed all their hopes in the Crusades -- the fierce war against the horribly uncivilized, barbaric (terrible!) Arabs who were trying to occupy the rest of the continent. The peasants were beginning to riot at home. The young aristocracy (effete-snobs) were being riled up by the Order of the Radic-Libs. They demanded immediate return of the warriors and a start for the important issues such as the abolition of witchcraft, and jousting tournaments for everyone. Milhous

decided to cast a magic spell over the whole nation. He made the entire nation hallucinate that they could get out of the Holy Land by sending men to Egypt. But alas, the young under the evil spell of Sir Dell of Good and Sir George of Mac's Govern were not affected. They cast their own spell over Milhous which caused him to release Spiro Tee. This was Milhous' downfall. The people broke loose from the spell, put Milhous in chains made of polyvinyl chloride and proceeded to burn him at the stake.

A strange odor soon wafted over the congregation and all Milhous' supporters were slowly suffocated. The young Aristocracy took the position of head of alchemy and everyone lived happily ever after and after.

EDITORIAL

The Chemical Shift of the articles in this paper to the left or right is due to the fact that these articles are all written by students who vary in their beliefs and dispositions.

The response to the paper on the whole was beautiful. Even before all the articles were in and the deadline reached I could feel a better atmosphere of communication among us.

One bad spot though -- the faculty and grad students. No articles of any kind were received from them. I would ask them to get off their "collective tails" and join in the effort to unite.

-- Mark Kramer

The Alchemist Vol. Σ No. 1 Nov. 1970

Editor: Mark Kramer

Editorial Staff: Teresa Amabile, Dave Brancato, Dave Struebel

Typing: Teresa Amabile

Art: Walt Garrow
