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# ***FERMENT***

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## ***Alexandre Esenin-Volpin***

**Russian mathematician -dissident**

### **i. Introduction**

The following article is a more researched considerably enriched version of an earlier interview , written up in Ferment in 1981 ,with the 57-year old dissident mathematician , former refusenik and emigrant from the Soviet Union , Alexander Sergeïvitch Esenin -Volpin. Volpin's life , when seen against its background of 60 years of upheaval in European political, cultural and scientific history, impressed me as being of considerable interest.

I encountered him that summer in New Paltz, NY, at the house of some friends of his, Jim and Peter Geiser. A frazzled dumpling of a man in his late 50's, his face and body marked by the vivid traces of what the Soviet system had done to him, Volpin had been brought there by Jim, who was organizing a project to translate his research in mathematical logic into English. New Paltz is a charming and sleepy, dormant though not yet moribund, still undiscovered village 90 miles north of New York City in

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the Hudson valley . A branch of the state university system makes it a college town; the most habitable form of the American urban experiment. Both Jim, a mathematician and computer scientist and Peter, geologist, were still working for SUNY. Peter was about to be evicted by the departmental dinosaurs, and Jim was already making enough money as a computer consultant to leave university teaching. They emigrated in the mid-80's to Boulder, Colorado, where they have established a company for the development of computer softwares for the titans of capitalism in the oil industry.

*ii. Birth in the post-revolutionary era*

*Field upon field upon field  
The provinces' dead hand  
Yesterday lights on my heart,  
Within - bright Russia stands*

- Sergei Esenin ( 1895-1925)

Alexander Esenin-Volpin was born, outside of wedlock, (the term having little meaning at that time and place ) , on May 12th, 1924, His mother, Nadhezha Volpin, is known in Russia as a translator of works of fiction from French and English. His father is one of Russia's most popular and anthologized poets, Sergei Esenin ( 1895-1925. In modern literary history, his work and life correspond to the vogue of the Imagist movement, a major influence on all European writing in the 20's. For this brief illuminated glimmer , Russia was very much in the mainstream in all the arts.

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The final years in the life of the poet, were filled with great mental suffering and turmoil.

Sergei Esenin's liaison with Nadezhda Volpin occurred between the breakup of his famous/infamous 3rd marriage, to the American dancer Isadora Duncan, after his fourth marriage with a long-suffering childhood sweetheart, Galina Benislavskaya, and just before his fifth and last marriage with Sofya Tolstoya, grand-daughter of Count Leo.

Many descriptions have been written of the wild extravaganza, one can hardly call it simply a 'tour', the anagram 'rout' being more appropriate, of 1922 that carried Duncan and Esenin through Germany, France and the U.S. Several of these accounts can be found in in the Bibliography. As the Americans saw it, the high point of their cultural-political debauch was reached at their immortal joint performance at Boston's Symphony Hall in September of that year. Although they successfully scandalized all the philistines, prigs and red-baiters that the Brahmin class could muster up for a chilly afternoon's infusion of the fine arts, historians may some day see their ludicrous antics on that memorable occasion as the most valid gift of moral and social renovation that the dancer/poet duo brought with them to the New World.

As was her custom, Isadora Duncan waltzed onto the stage, only to delay her dance by a political harangue of indeterminate and interminable dimensions. (*The author of Ferment is addicted to bad puns: one might call the whole thing "a red harangue".*)

As bombast and tone climbed in harmony to a plateau of shrill stability, she thrust an arm towards the replicas of Greek statues that rimmed the Symphony Hall stage and cried:

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*"These are not Greek gods! These are false! And you are as false as these plaster statues!.."*

She followed ( *sic! past tense* ) -through was a stern ,indeed quite puritanical lecture on the crimes of New England puritanism , upon the natural beauty of the nude human body.. *"Nudity is truth!"* she cried, *"It is beauty, it is art!"* ( I agree with all of this, by the way.)

Then she waved a red scarf above her head and yelled :

*"This is red! So am I!"* Seizing the matinee , she ripped the upper part of her tunic and let drop a breast. *"This!"* she cried, *"This is Beauty!"*

I wish I had been there.

A mad exodus of indignant ignoramuses , illiterates and phonies streamed out the doors, leaving a residue of enthusiastic Harvard students.

It was at this moment, not only of their concert, but their entire American tour, than Sergei Esenin felt the time ripe for personal intervention. Ever since their arrival in the U.S. the month before, he had been wilting beneath an altogether justified sense of being neglected. As in the traditional image of the faculty spouse, he found himself adrift in a foreign land with endless time on his hands. Their impresario, Sol Hurok , had not thought to made any bookings for poetry readings for him. There would be less problems today in setting up a series of readings in college Slavic departments.

Impassioned, extroverted , brilliant and childish, much like his wife in fact, a man used to hogging the world's attention , Esenin found himself being put out to pasture in a way that even we normal, mature, mediocre types would deem intolerable. The only outlet to his frustration had been in the dissipation of his wife's earnings through buying trunkloads of fancy clothing .

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Opportunity , the chance to invert the apple cart, filled though it be with mangoes and peaches, arrived at last in Symphony Hall. Esenin , dressed in an exotic and dashing Georgian costume, a black coat with cartridge loops, silver dagger at his belt, high soft black boots and a large fur hat. had been sitting in the loge overlooking the stage. Now he stood on the railing waving a piece of red flannel and jumped onto the stage.

Upon regaining his balance, he burst into the singing of the "*Internationale.*"

This proved to be something of an embarrassment to the government of for the people, by the people, etc.... Back on Ellis Island, Esenin had signed a paper whereon was printed a promise not to sing the Internationale on the soil of the continental U.S. A. (Isadora had made a similar promise not to give any speeches, but not in writing. ) Luckily , no informers told on them, though it hit all the newspapers. Mayor James Curley merely revoked their license for all time, (sidereal, relativistic, etc.), to perform in Boston.

This *pas-de-deux* , despite its origins in an impromptu expression of revolutionary passion, proved to be very popular and became incorporated as a standard part of their repertoire performances in Chicago, Indianapolis and Milwaukee; and elsewhere. It at least gave Esenin something to do, (*though one wonders why there was not at least one Russian ethnic organization that did not approach him with the offer of space for a poetry reading.* ( Now they broke the box-office wherever they went, floating on the mountains of free publicity given them by the rantings of preachers in the pulpits and the fulminations of newspaper columnists and editors. It would appear that their pungent mix of godless Communism and immortality had never sold half so well anywhere else. At the same

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time, the general public ignored, forgot, or never understood the possibility that these were both major professional artists , and might have had something to say apart from the overwhelming foolishness of the swelling carnival. They left America a few months later, carrying away quite a bit of money with them, but thoroughly heart-broken. Artists in general have never been very good at 'laughing all the way to the bank'.

The above incident also has some bearing on our present account. Seventy years later, we find Esenin's son teaching calculus at Northeastern University, on Huntingdon Avenue, just two blocks away from Symphony Hall. I must remember some day to ask Alexander what thoughts go through his mind as he passes this building on his way to work, knowing that most Americans who know of his father, associate him with the " scandal of Symphony Hall " .

On returning to Paris, Esenin suffered a succession of severe nervous breakdowns, leading to confinement in mental hospitals in Germany, France, and Moscow. The breakup of his marriage with Isadora Duncan was already assured, yet a few dozen violent and painful domestic dramas would occur before the final rupture. Footnote Schneider pgs.124 - 184) His downward descent into persecution mania, alcoholism, delirium tremens, insanity and ultimate suicide, began in 1923, during his marriage with Benislavskaya.

He married Tolstoy's grand-daughter without even bothering to inform Isadora Duncan that he had done so; she had, in the meantime , already left Russia. No divorce was sought, or even required in those days. Isadora Duncan's only information as to the whereabouts of her husband in the final year of his life was in a telegram *perhaps sent* ( the

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circumstances remain very mysterious) , by Benislavskaya informing her of his final marriage.

In October, 1925, he abruptly quite the household of Sofia Tolstoya, oppressed, as he described it, by all the signs and symbols of the omnipresent hero-worship of her illustrious grand-father. The month of November was spent in a psychiatric clinic in Moscow. In early December he checked himself out of the clinic and went to Petrograd, ( later Leningrad, now once again St. Petersburg) , with the intention of starting a new life.

On December 28th, 1925 , Sergei Esenin hung himself in Room # 5 of the Hotel d'Angleterre in Petrograd, in the same room in which he and Isadora Duncan had passed their honeymoon.

At the time of his suicide he had wasted away from the condition of the youthful robust peasant before World War I , to the emaciation of an alcoholic depressive.

On December 3rd, 1926, Galina Benislavskaya shot herself on the 6th attempt, beside his grave in the Vagankovsky cemetery, near Moscow. On one of the notes she left, she wrote, *"In this grave is buried everything I hold dear."*

These were the personalities and circumstances surrounding the life of Alexander Esenin-Volpin's father at the time he came into the world.

### iii. Historical Overview

*I regret nothing, neither do I complain nor weep.*

*All will pass, like mist from white apple trees*

*-S. Esenin*

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Like the many tiers of theatrical velvet curtains, three transcontinental voyages provide the historical backdrop of this account:

(i) In 1899 Isadora Duncan ( 1878 - 1927) leaves the United States. Apart from a few brief home-comings , she will spend the rest of her life as an ex-patriate in Europe . In 1921 she travels to Russia to establish a school of modern dance for the instruction of proletarian children. Duncan was launched on one of the great imaginative experiments of her career: Moscow was still the world capital of classical ballet. In the wake of the total demise of the monarchic order, of which ballet was the very emblem, she had the generosity and courage to travel to an impoverished , war-ravaged land to establish a new vision of the dance. It must be admitted that her understanding of communism was utopian, simple-minded and fanatical; then again, the communism of the 20's was not the phenomenon that would emerge in the 30's.

(ii) In October of 1922, Isadora Duncan and Sergei Esenin come to Boston to tour the United States. Although marriage had been abolished in the Soviet Union, they go through a formal ceremony to avoid complications in the countries, (including the U.S.) , through which they intend to travel. The tour is a financial success but an artistic disaster; their marriage, never too stable from the beginning, is now a shambles. In January, 1923, they return to Western Europe; in August they are back in Russia .

(iii) In 1972, Alexander Esenin-Volpin is given permission to emigrate to the United States. His branch of mathematics, Super-finistic intuitionism, is as unorthodox and avant-garde in American universities, as was the blend of poetry, Marxism and dance of his father and wife , to the





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Beginning in the last century, and extending through the half century of political chaos in Europe, 1920 -70, a rather different and far more esoteric revolution is taking place in the once specialized, ( yet no longer so), fields of logic, set theory and the foundations of mathematics: a revolution associated in the public mind with the name of Gödel, of Douglas Hofstater's book, "Gödel, Escher, Bach", but which, for mathematicians is known rather as "Cantor's Paradise", named after the 19th century mathematician who discovered and carefully demonstrated the paradoxical nature of mathematical infinity.

The subject of Logic was developed by the school of Aristotle in the 4th century B.C.E. Through the Middle Ages and into the 19th century it had been applied to every field of thought, Theology, Philosophy Law, and the Sciences, with no significant advances. It was in fact believed that Aristotle had described all that there was to know about logic.

Then a Symbolic or Mathematical Logic was sketched by G.W. v. Leibniz in 1666 , and fully elaborated by George Boole in 1847 , with the result that if one that if one looks for texts on logic in today's libraries, one finds several shelves of books with essentially the same content, in both the QA9 section (Math), and the BC 15 section . Illogical ,no doubt: these may well be on different floors iand n different parts of the building; but logic isn't logical anymore.

The science of the Infinite, a subject with little original additions or insights since the days of Anaxagorus, suddenly exploded into life from the discoveries of Georg Cantor. Later Emile Zermelo, poured the concrete onto the foundations of Set Theory. Giuseppe Peano gave us a list of axioms for the number system. the same was done for Geometry by David

Hilbert, and was the first major advance over Euclid in 3rd century Alexandria .

As so often happens when many advances and improvements arise in too short a time, it appeared to many mathematicians at the beginning of the century that their subject was getting out of control. Several 'reductionist' attempts were then made to reduce all of mathematical thinking to a few fundamental ideas from which the rest might, in theory or in practice, be generated.

Three of these foundational endeavours have become our modern paradigms. The first of these is the "Logical" or "Old Formalist School", of Gottlob Frege, Bertrand Russell and Alfred North Whitehead. This was an attempt to make all of mathematics a branch of logic, (Aristotelian Logic enriched by Frege's Propositional Calculus, and expressed in the symbolism of Boolean Algebra).

The New Formalist School" of David Hilbert, stressed the axiomatic method; it is associated with the frenzy apparent in modern college textbooks, to axiomatize every mathematical subject immediately, even before anything is really known about it. A quotable quote of Hilbert's is "*Am Anfang, so heisst es hier, ist das Zeichen.*" ( In the beginning was the sign). All mathematical fields, he argued, ought to be reducible to sets of signs that can be moved around the page by rules which forbid certain things and permit others.

The third alternative to these is the Intuitionism of L.E.J. Brouwer, and A. Heyting. We will go over that in more detail in a moment.

In 1982, I attended a talk by Volpin on the modal logic of law. He explained to us that the difference between the "democratic model", and the "totalitarian model", apart from the specific content of the laws is this:

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*"in a democratic society, everything that is not forbidden by the laws is permitted; whereas in a totalitarian society, everything which is not explicitly permitted by the laws is forbidden.*

Alexander Volpin had experienced both worlds, so he knew whereof he spoke. In this history of mathematics, we may perhaps speak of the Russell model as the democratic version, and the Hilbert model as the totalitarian one, and Brouwer, paradoxically as the most totalitarian:

The futility of the Russell-Whitehead, and the Hilbert, approach was demonstrated by the discoveries of Kurt Gödel. These showed that any non-trivial mathematical discipline is open-ended: we can never know all of its axioms, nor can we demonstrate their within their own formalism. I don't know how Brouwerism and Gödelianism recombine but I suspect that Gödel would have said that the kinds of mathematics which Brouwer considered 'legitimate' would not be considered 'non-trivial' in his sense.

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There are two purposes in my presentation of this historical review.

The second is to prepare the ground for a discussion of the field that Alexandr Esenin-Volpin has specialized in, "Intuitionism", or "Superfinitistic Intuitionism", a kind of 'fundamentalism' in logic and set theory.

The first is to contrast this historical background, with the enormous political power associated with yet another form of modern logic, with which this logician, and many other sane and intelligent people in the Soviet Union and much of the rest of the world were forced to grapple with: the

“dialectical materialism” co-authored by Hegel, Marx, Lenin, Stalin and others.

I can do no better than to quote Esenin-Volpin himself. These are from the essay “A Free Philosophical Treatise”, which he wrote in 1959, which caused him to be arrested and incarcerated for yet another year in a mental hospital in Leningrad. The full story of his courageous personal war against Stalinism is related in the next section:

*“ We desire some kind of practical result, and we divide the sphere of all possible assumptions into two parts. One corresponds to “yes”; the other to “no”....*

*We explore reality and also divide the sphere of possible assumptions into two parts corresponding to “yes” and “no”. ...*

*“We very often forget that these two divisions differ from one another, and as a result we adopt as reality that which is favorable.”*

In other words, Volpin is saying that when we separate the universe into “True” and “False” or into “Either/Or” categories, we have a tendency to confuse that which is useful or practical, with that which is true. He refers to this fallacy by the Latin phrase, “*ignoratio elenchi*”, and calls it, “*the intellectual basis for every kind of demagoguery.*” Further along he says:

*“Materialism consists in the conviction that all phenomena may be reduced to the material state. In essence this belief affirms that everything that can be thought of can, in the last analysis, be seen or touched. This is, so to say, a belief in the eyes and hands. Very often it is undoubtedly useful, but here it is refined to the point of loss of consciousness.”*

He then goes on to state three postulates of ‘totalitarian logic’ on which any authoritarian state may be based,( I paraphrase):

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Postulate I. We can prove premise A by proving premise B which resembles it, then call this a proof of A.

Postulate II. A thinking person is someone who understands his personal and public usefulness

Corollary: It is impossible that a thinking person would dispute postulate I, for he would therefore not be a thinking person.

Postulate III:( in two parts)

(a) Persons who do not understand their personal usefulness are to be committed to mental hospitals.

(b) Persons who do not understand their public usefulness are to be sent to jail or executed.

Finally he listed “two principles of the understanding”. These fall outside of logic proper and can be called “Meta-Logical”

PRINCIPLE I: The word “to understand” means either to understand as we understand, or as somebody else understands.

PRINCIPLE II: If somebody states that he does not wish to understand something, then he does not understand.

Had Volpin’s essay been published in Western Europe, it might have merely been considered clever or funny by those who understood it, and as merely ‘ununderstandable’ by those who did not wish to understand it.

In the Russia of 1959, it earned its author yet one more year’s incarcerated in the Leningrad Special Psychiatric Hospital.

The trend among modern logicians holding academic posts, with all of the vested interests thereby entailed ( *ignoratio elenchi* at its best), is to treat Hegel as something of an irrational idiot who didn’t understand a thing

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about Aristotelean Logic and therefore attacked it mercilessly for reasons of stupidity or brain damage. While not disputing or defending the merits of this position, I only comment that one of the primary sources for the intellectual life of a century and a half, emerging in the thought and activities of such diverse manifestations as Marx, Kierkegaard, Sartre, Husserl, and even Freud, cannot be dismissed merely with a few insulting remarks that do as little justice to him as he apparently did to Aristotle. The issue is not whether or not he had anything important to say - most thinking people agree that he did - the question is whether or not his methodology of the dialectical process ought to be considered a branch of logic. Perhaps not - although in recent years there have been attempts to "quantize" the Hegelian dialectic, that is, to develop a kind of symbolic logic around it. Such attempts have been made, principally in Italy by Franco Spisani, who publishes an International Logic Review dedicated to just this purpose; a Bogdan V. Sešic in Bulgaria, and two French philosophers, Dominique Dubarle and Andre Doz ( *Logique et Dialectique*). However, "quantizing does not a logic make", and it is doubtful if these efforts will convince persons with such rigidly frozen attitudes as the heirs of Frege, Russell and Wittgenstein.

It should however be pointed out that no less than an authority than Aristotle himself, whose *Organon* is still deemed one of the best treatises on logic ever written, asserts that in matters dealing with 'free will' and events occurring in future time, it is no longer valid to use the law of the excluded middle.

Having defended the dialectic against its detractors, I must now readily concede that the form of 'dialectic' that Alexandre Esenin-Volpin was pitted against in Stalinist Russia had very little to do with Socrates, Hegel, Marx,

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or Kierkegaard. It was rather a kind of twisting of rational thinking that, in 1949 , earned him 5 years in Siberia for writing this poem:

*The Raven*

*Once at night, in time of terror, I was reading Thomas More,*

*Less ignoring his Utopia might be laid at my own door.*

*In the long, dull exposition I was seeking confirmation*

*Of arrests for vagrancy in the land exempt from war,*

*Since this sort of vagrancy necessitates no form of war.*

*Is he deep, this Thomas More?*

*... And I pondered on the nation in whose land debased was freedom...*

*... Suddenly I heard a rapping ... why so late? A frightful bore!*

*Racked with doubt and sorrow , whispered: "It could hardly be a friend;*

*All my friends have been imprisoned... Must be thief come to the door."*

*In ecstatic expectation I called : "Thief, come to the door!"*

*Someone croaked out: "Nevermore!"*

*All was clear. Of course, it was the ancient Raven. In great haste I*

*unlatched the window, saw the stately Raven of before! In he rushed*

*impatiently, and stared about the premises...*

*In confusion I informed him: "You may sit here on the floor;*

*In this house we have no Pallas, please be seated on the floor.*

*There's the floor, and nothing more!*

*Sullen and ungainly, like a brooding fowl he settled down...*

*Somehow Pallas was unearthed ... I have a heap of bookish lore!*

*Fluttering , he perched once more; and, black as pitch in his appearance,*

*Blinked there like a drowsy demon, pecking at the title "More",*

*And pronounced he: "Nevermore!"*



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*I was startled, O, Plutonian! Like a Teuton, taciturn!  
Perched above, with bitter words my conduct subtly you deplore!  
Stop grimacing, wizard bird; reveal least half of your mind;  
Your abyss, how penetrate? For I have feared since time before  
Yet another such abyss in realms corrupted heretofore...*

*Croaked the Raven : "Nevermore!"*

*Raven, Raven! All the planet waits the warrior, not the poet;  
In Plutonia you may not quite understand our discord sore!  
O, what genius of tomorrow will compose about our strivings  
In this age a crown of creations, making cunning use of folklore;  
And most likely take as subject our own fancy-fashioned folklore!*

*And croaked the Raven: Nevermore!*

*O Prophet, plainly no mere bird! Impatience has a limit;  
Then Voltaire comes in most handy, bombs and hatchets, what is more.  
Now that shame has made us pallid - may it come, though not too soon,  
Since the terror's at its' summit! - will it come, this Thermidor?  
... Danton fell, and Robespierre was stricken down by Thermidor?*

*Croaked the Raven : Nevermore!*

*O, Prophet, plainly no mere bird! Is there no foreign country,  
Where to argue freely about art portends no peril sore?  
Shall I ever reach that region, if such be, and not get shot?  
In Peru or Netherlands, I'd solve that old contentious chore  
Of the realist and romantic still disputing as before!*

*Croaked the Raven: Nevermore!*

*"Never, never!" quoth the bird ... that foreign land's beyond the sea...  
Hereupon in burst two soldiers, drowsy doorman and a major...  
I did not click my heels before them, merely spat into a face,*

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*But the Raven, somber Raven, simply croaked out: Nevermore!*

*Now I push and push a barrow, keep repeating Nevermore!*

*There's no rising .... Nevermore!*

Alexandr Esenin-Vopin Feb. 21st, 1948

The ambiguity of one's natural response to this strange mock lyric remains perpetually irreducible. At the one extreme one is naturally horrified that the insanity of the Stalinist regime should have exiled a man to Siberia for 5 years for writing such a masterpiece: at the other extreme one reflects sadly on the ancient and well-established adage that , when mathematicians set their hand to poetry , a catastrophe must emerge in 99% of all cases. That the verse is deliberate doggerel is not an excuse; if a writer knows that he is going to end up in Siberia because of a bit of verse he intends to write, the verse itself ought to be at the level of the deed. Imagine the historical reaction , if Christ , from the cross, had simpered:

*"Hey , Dad: give them a break, huh? Like, they've got rocks in their heads."* instead of saying what he is alleged to have said. Or Boethius, awaiting a brutal execution at the hands of Theodoric, writing, instead of The Consolation of Philosophy, a 'Monty Python'-style life of Julius Caesar. Or Galileo being condemned by the Inquisition, not for the "Dialogue Concerning the Two World Systems", but for scrawling graffiti on the walls of the Vatican!!

Whatever one's opinions on the matter, it was this poem that led to Volpin's first, and longest , spell in the Gulag Archipelago. The official charge was "disseminating of anti-Soviet propaganda". After returning to Moscow, he obtained his PhD and began teaching mathematics at the

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university of Chernowitz. Stalin had died by that time and Volpin benefited from a general amnesty for political prisoners.

In 1957, he was again arrested for his active role in human rights organizations, and kept in a psychiatric hospital for political prisoners, the Gannushkin PH # 14 in Moscow, for one year. In September of 1959 he wrote the article on politics, philosophy and logic "A Free Philosophical Treatise" from which we have taken excerpts. This (more effective) ridicule of the twisted ideas of "dialectical materialism" earned him yet another year in a punitive mental hospital, this one in Leningrad. In 1962 and 1963 he was again incarcerated in the Gannushkin PH because of his activities with the Helsinki Accords watch committee, and from February to May of 1968, he was confined to Psychiatric Hospital # 5 in Stolbovaya, a Moscow suburb, because he had requested the right to emigrate. In 1972 he was allowed to come to the United States.

*(First in a series of three articles)*