Translations, Articles and News

Sukhomlinsky News

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Intellectual education

In this issue we continue to translate extracts from the fifth chapter of *Pavlysh Secondary School*, on intellectual education.

Intellectual education and a philosophy of life (continued)

The process that begins during a child's first days at school, when they learn about living nature, about plants and animals, about the environment in which the processes of life unfold, is always accompanied by the application of knowledge: this is very important for the formation of a scientific world view. And this work is not simply an illustration of what the child is learning. The work reveals to children more and more secrets of nature, and establishes a child's role as an active investigator.

While studying natural sciences (botany, zoology, human anatomy and physiology, the foundations of Darwinism) students gradually deepen their understanding of a most important idea upon which they can base their philosophical convictions. In the surrounding world there is an eternal, ceaseless interaction between the living and the non-living. The forces of nature create the living from the non-living, fashioning organic substances, the source of life. Living things take from inanimate nature the primary material for the creation of organic substance and metabolism takes place. Human beings, themselves part of nature, do not simply observe, study and learn about this most complex process, but boldly intervene in it, creating conditions favourable for the enhancing of living phenomena, modifying and creating environments for organisms.

[Continued on the following page]

Studying nature

Dear readers,

I hope you are safe and well.

For this month's newsletter I have continued to translate material from 'Pavlysh Secondary School' and Sukhomlinsky's 'Ethics Anthology'.

The extract from Pavlysh Secondary School is about the roles of the natural sciences, investigative research and creative work in developing a philosophy of life.

I did a little research myself, while translating the extract from Pavlysh Secondary School. I had never heard of a 'bush cultivation method' for growing wheat, so I conducted a search on the internet, and after several attempts came across an article in a 1962 issue of the Soviet journal 'Nauka i zhizn" [Science and Life]. The article was about a Latvian agricultural scientist named Sergei Muraviev, who found he could increase yields of wheat by planting fewer seeds at greater spacing, allowing each plant to bush out and develop strong stems. Wheat grown in this way was resistant to being flattened by bad weather, and developed larger ears with heavier grains.

Best wishes,

Alan Cockerill

Intellectual education (continued)

In order to deepen and strengthen in students the urge to understand the mysteries of the surrounding world, we structure the teaching of the natural sciences in such a way that day after day students discover more and more new details, broadening their understanding of the material essence of the world. In planting a grape vine in an environment created by human hands, the students gained their first concepts of fertile and infertile soil, and from that moment there began a new stage in their understanding of the interaction between the living and the non-living.

In the primary classes, children acquire their first understanding of plants and soil, of living processes, of mineral and organic fertilizers, of the role of work in creating conditions favourable to living processes. But acquiring understanding is only one aspect of the intellectual education of children. Children should think while working with their hands, and work with their hands while thinking. Only then will knowledge be transformed into conviction, and a child's very nature demands this. Their intellectual operations are the most clear and vivid during the process of work. Understanding that is corroborated in their own work arouses deep emotions that provide a powerful stimulus for human behaviour.

In the primary classes our students are already creating soil blends in the greenhouse and in our experimental plots, selecting various components, testing the influence of various mineral and organic substances on soil fertility. Students in grades two, three and four grow masses of green barley and oats in hydroponic solutions, becoming convinced that it is possible to create conditions favourable for living processes even without soil. As their theoretical knowledge grows, their work becomes more complex, revealing the secrets of the interaction between the living and the non-living. In grades five, six and seven, students create conditions in the soil favourable for the development of beneficial micro-organisms. In grades eight, nine and ten, they find various ways to influence the biochemical processes taking place in micro-organisms. They now see the soil as a medium in which complex living phenomena take place. Having knowledge, human beings bring these phenomena under the influence of their reason and will.

In the process of acquiring knowledge about the vital activity of organisms, students create conditions for the development and improvement of the nature of plants in a direction that is desirable for humans. At biology lessons they learn about scientific research that through a process of selection develops new varieties of grain and commercial crops. Knowledge is applied in work. In the school's experimental plot and on the collective farm, students experiment with various ways of cultivating the soil and growing agricultural crops. For instance, the children are growing a crop of winter wheat using a bush cultivation method: each seed planted in the ground is allocated an adequate area from which to draw nutrients. The ground between the rows is tilled as it would be for some horticultural crops. The wheat plants bush out, and each bush yields many more large ears than would be the case with the normal method of sowing. With this method of planting the yield at harvest is three or four times greater than for normal sowing in rows. This work is a little research project for the students. They are studying the composition of the soil and creating favourable

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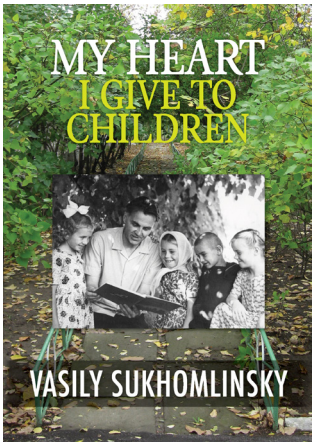

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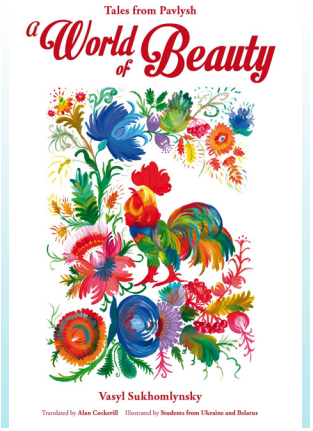

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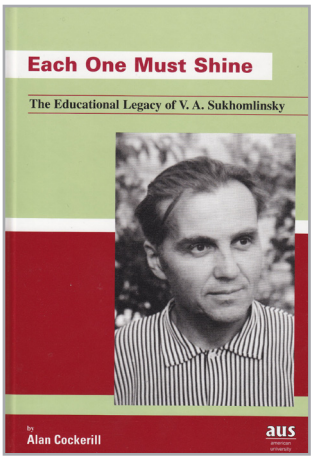

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biochemical conditions for the development of beneficial micro-organisms.

In the senior classes, while studying the basics of agrotechnology and biochemistry, students acquire knowledge that provides a philosophical basis for creative work. They learn about mineral fertilisers for plants, photosynthesis, respiration, qualitative characteristics of plant metabolism at various stages of development, the physiology of growth and development and methods for managing these processes, the biological foundations of crop rotation and physiological foundations of seed production, plant selection methods, inherited characteristics, chromosomes and genes. The acquisition of this knowledge is intricately connected with work on our experimental plot and in the fields of the collective farm.

This integration of knowledge and work convinces our students that phenomena associated with the vital activity of organisms that play a major role in lifting work productivity have a material basis. It is possible to manage these phenomena, but extensive knowledge is required to do so. Our senior students have their own experimental plot, where they conduct research that plays a major role in the formation of a scientific world view. For the past fifteen years there has been constant research conducted here into the following areas, that are of considerable scientific and practical interest: chemical and biological means for accelerating the growth and development of wheat and sunflowers; increasing the oil content in sunflower seeds; stimulating the vital activity of beneficial micro-organisms, enriching the soil with humus; increasing the protein content in wheat. We refer to this work as research, because it is included in the research plan of the local agricultural research station.

The teaching of physics, chemistry, astronomy and mathematics provides many opportunities for the development of a scientific world view. In the process of observing physical and chemical phenomena and learning about their essence, even at the first stage of study up to year eight, students discover some important scientific truths: about the eternity, non-creation and indestructability of matter; about the limitlessness of the universe; about the material nature of movement, time and space; and about human consciousness as the highest stage in the development of matter. Students take their first steps on the path of knowledge in those scientific fields where much remains to be studied and learnt, for example elementary particles, matter and energy, cosmic rays, the origin of the universe, electromagnetic oscillations and waves, the wave and particle characteristics of light, the biochemical foundations of living processes etc.

Our experienced teachers of physics, chemistry, mathematics and astronomy strive to structure the learning process in such a way that knowledge of scientific truths and the laws of nature may become a tool, an instrument, a key to solving creative work tasks, a key to unlocking the secrets of nature, to further knowledge of the surrounding world. This is achieved because research and experimentation imbue the learning process with a thoughtful, inquisitive, emotionally intense search for truth. In coming to know the truth in this way, students also come to know themselves. They feel and experience in themselves the creative power that comes with being human, and this provides the emotional and intellectual foundation for a philosophy of life.

By the time they complete grade eight, students have some conception of various forms of energy: mechanical, thermal and electrical. Deepening this theoretical knowledge, they construct working models that convert one form of energy into another. Every student tries to incorporate into the construction of their model some unique feature that will distinguish their design and their work from those of other students. Students who become enthused by this work develop not only a heightened interest in learning, but also a personal attitude towards the integration of knowledge and work. In electronics, automation and radio electronics clubs they construct models, equipment and installations in which the most complex processes are based on the conversion of one form of energy into another. This is putting philosophical conviction into practice. Those who have passed through this remarkable school of work are distinguished by a highly developed urge to be creative. In their work they strive to find new opportunities for the application of electricity.

Children enter the world of social activity through collective work. We seek to ensure that collective work of social significance is experienced at a young age as a deeply personal matter that engages hearts and minds. Each generation of our students, at a young age, plants an orchard for the benefit of others. By the age of eleven or twelve children see the fruits of the work they began in early childhood. In their minds they look back on the short journey they have made in life and take pride in what they have done for others. The deeper the joy they find in creating something for others, the richer a child's actual relationships, the more closely they take to heart the interests of society.

Stories

A grandson's request

Three grandsons, Petya, Ivas and little Tarasik, visited Grandpa Taras at the melon plantation. They spent a long time with him. He treated his grandsons to watermelon, and rockmelon, and honey and apples and cherry juice.

As they were leaving, he gave each boy a large watermelon. He walked with them as far as the scrub on the edge of the plantation. The grandfather turned back, and had almost reached his hut, when he suddenly heard someone calling him. His seven-year-old grandson, Tarasik, had run back from the edge of the plantation and was calling, 'Grandpa Taras!'

The grandfather asked, 'What's the matter, Tarasik? Why have you come back?'

'Grandpa, can we please steal one watermelon?'

The unexpectedness of the question shocked the old man. He opened his mouth to shout 'You ungrateful wretches', but looking at Tarasik's pleading eyes, and the skin peeling off his sunburnt nose, he remembered something, and trying not to smile, said sternly, 'Look at me… no more than one melon… And take it…I mean steal it, from that side over there…'

Grandpa Taras turned and walked towards his hut, smiling all the time, and remembering his childhood.

His grandson Tarasik, jumping for joy, ran back to the scrub to give the others the joyful news: grandpa said they could steal one watermelon…

Grandpa's belt

For more than a month little Sashko had been counting down the days until he would start school. At last the happy day arrived. The next day was the first of September.

Sashko woke up at dawn. He put on his new trousers and jacket, and checked to make sure he had packed everything in his school bag.

Quietly, so his mother and father would not hear him, Sashko opened the cupboard. There hung his grandfather's belt. Sashko's grandfather was killed on the frontline. His friend, when he returned, brought grandpa's belt: wide, with a big buckle, and on the buckle a star.

Sashko took down the belt and put in on under his shirt. He would show the other boys what sort of belt his grandfather had. He would tell them how his grandfather was a hero.

His mother woke up in the room next door.

'I'm ready for school', said Sashko.

The birthday party

Nina has a big family: her mother, her father, two brothers, two sisters and her grandmother. Nina is the youngest: she is nine years old. Grandma is the oldest: she is eighty-two. When the family has a meal, grandma's hand shakes. Everyone is used to and tries not to pay attention. If someone looks at grandma's hand and wonders why it is shaking, it shakes even more. When grandma uses a spoon, the spoon shakes, and food drips on the table.

Soon it will be Nina's birthday. Her mother has told her there will be a special meal for her birthday, and that she and grandma will bake a big cake. Nina can invite her friends.

The guests arrive. Mum covers the table with a white tablecloth. Nina realises that her grandmother will soon sit down at the table, and her hand will shake. Her friends will laugh and tell everyone at school.

Nina quietly says to her mother, 'Mum, is it all right if grandma doesn't sit at the table with us?'

'Why?' asks her mother in surprise.

'Her hand shakes… and she drops food on the table…'

Her mother turns pale. Without saying a word, she takes the white tablecloth from the table and puts it away in the cupboard. She sits silently for a long time, and then says, 'Grandma is sick today. There won't be any birthday party. Happy birthday, Nina. My wish for you is that you will become a fine human being.'