University of Plovdiv "Paisii Hilendarski" Faculty of Biology Union of scientists in Bulgaria

BALKAN SCIENTIFIC CONFERENCE OF BIOLOGY May 19-21, 2005, Plovdiv, Bulgaria PROCEEDINGS

B. GRUEV, M. NIKOLOVA, A. DONEV (EDITORS)

THIS ISSUE WAS MADE WITH THE SUPPORT OF THE MINISTERY OF ENVIRONMENT OF BULGARIA

Printed by:

Plovdiv University Press

24, Tzar Assen Str.4000 Plovdiv, Bulgaria

Tel.: +359 32 624 847, 261 285; e-mail: press@pu.acad.bg

FOREWARD

The Balkan Scientific Conference of Biology is organized on the occasion of the 45th anniversary of the Faculty of Biology, University of Plovdiv.

The organizers of the conference wish to facilitate networking among Balkan scientists and exchange of thoughts and ideas in area of biology.

The colaboration among scientists from various Balkan universities shall contribute to our professional development, uniting our efforts in developing joint scientific projects and contracts.

All the papers and posters of eight sections of biology presented at the conference, appear in these two parts of the Proceedings. The editors have organized them into related topics.

The editors

CONTENTS

SECTION ANTHROPOLOGY

(THE CHEEK BONE) IN THE HUMAN	
S. TORNJOVA, D. TOPALOVA, P. BORISSOVA – DERMATOGLYPHIC IN BULGARIAN MEN – FINGER AND PALM RIDGE COUNT	
NACHEVA, N. KONDOVA, L. YORDANOVA – BODY NUTRIYIONAL STATUS AND ARTERIAL BLOOD PRESSURE IN 7-17 YEARS OLD CHILDREN	
R. STOEV – CONSTITUTIONAL TYPE IN ADOLESCENTS	
VICTORIA RUSSEVA, NELY KONDOVA – BALCHIK 3, EXCAVATIONS 2004 – ANTHROPOLOGICAL IDENTIFICATION OF BURIED IN THE GRAVES WITH CREMATION RITUAL	
MITOVA, Z. – AGE AND SEXUAL DIFFERENCE IN SOME BASIC BODY CIRCUMFERENCES THROUGHOUT 9 – 15 YEARS OF AGE	
E. Janeva, R. Stoev, L. Kavgazova – Comparative population-genetic analysis on the abo and Rh blood group factors of the population from the zlatograd region (South-East Rhodopes	
N. ATANASSOVA-TIMEVA —ANTHROPOMETRICAL CHARACTERISTIC OF BULGARIAN STUDENTS AT THE BEGINNING OF 21ST CENTURY	
Y. ZHECHEVA – BASIC BODY DIAMETERS IN 3-6 YEARS OLD CHILDREN(Preliminary data)	
I. STOYANOVA – THE ROLE OF GUT INNERVATION IN THE ETIOPATHOGENESIS OF CROHN'S DISEASE	
V. GEORGIEVA, S. SIVKOV, V. AKABALIEV, Y. KOEVA, T. DENEVA, R. IVANOVA – QUANTITATIVE CEREBRAL ANATOMY IN SCHIZOPHRENIC PATIENTS – A CONTROLLED COMPUTED TOMOGRAPHY IMAGING STUDY	
BALTOVA, S. – PHENOTYPE AND GENE FREQUENCIES OF SOME BLOOD GROUPS SYSTEM I N BULGARIANS FROM SMOLYAN REGION	
ANDREENKO, E., M. NIKOLOVA – FEATURES IN THE COMPOSITION AND WELL-FED BODY IN DIFFERENT CATEGORIES OF WORK	
SILVIYA MLADENOVA, MIMA NIKOLOVA – COMPONENTS OF BODY MASS AND THEIR RELATIONS DURING THE GROWTH PERIOD OF THE BOYS	
NIKOLOVA, M., V. AKABALIEV, S. SIVKOV, S. MLADENOVA - BODY COMPOSITION OF CHILDREN AND ADOLESCENTS FROM PLOVDIV	
BALTADJIEV A., SIVKOV S., VLADEVA S., BALTADJIEV G. – ANTHROPOMETRIC CHARACTERISTICS OF SOME LIMB AND BODY CIRCUMFERENCES IN MALES AND FEMALES WITH TYPE 2 DIABETES MELLITUS	
ZI. FILCHEVA, N. KONDOVA – MORPHOLOGICAL CHARACTERISTICS OF THE FACE IN 7-17 YEAR OLD SCHOOLCHILDREN FROM SOFIA	
TATJANA PAVLICA, VERICA BOŽIĆ-KRSTIĆ, RADA RAKIĆ – SOME ANTHROPOLOGICAL CHARACTERISTICS OF ADULT POPULATION OF THE NORTHWEST BAČKA	

GEORGI SAROV, PEPA ATANASOVA, GALJA ILIEVA, PETKO GEORGIEV – SOME CHANGES IN THE FUNCTIONAL AND MORPHOLOGICAL PARAMETRES AFTER VERY LOW CALORIE DIET AND REFEEDING
SIVREV, D., M. MIKLOSOVA, A. GEORGIEVA, N. DIMITROV – CESSATION OF THE POSTMORTAL BIOLOGICAL FACTORS EFFECTS BY PLASTINATION PROCEDURES
ANGELOVA VENETA, MAGDALENA PIRINSKA-APOSTOLU – ANTHROPOLOGICAL TESTS OF THE BULGARIAN POPULATION
M. PIRINSKA-APOSTOLU, V. ANGELOVA – CEPHALOMETRIC CHARACTERISTICS OF CHILDREN FROM EPIRUS(GREECE)
SECTION BOTANY
IVANKA TENEVA, RUMEN MLADENOV, NIKOLA POPOV, BALIK DZHAMBAZOV – EVALUATION OF NOSTOC LINCKIA AND NOCTOC PUNCTIFORME (CYANOPROCARYOTA) AS POTENTIAL PRODUCERS OF CYANOTOXINS
Y. KISELOVA, S. MARINOVA, D. IVANOVA, D. GEROVA, B. GALUNSKA, T. CHERVENKOV, T. YANKOVA – ANTIOXIDATIVE POTENTIAL OF EDIBLE WILD BULGARIAN FRUITS
NIKOLIĆ N., MERKULOV Lj., PAJEVIĆ S., KRISTIĆ B. – VARIABILITY OF LEAF ANATOMICAL CHARACTERISTICS IN PEDUNCULATE OAK GENOTYPES (QUERCUS RUBER)
STOJCHEV G., CHESHMEDZIEV I. – HOROLOGICAL AND ANATOMICAL INVESTIGATION ON LINDERNIA PROCUMBENS AND LINDERNIA DUBIA (SCROPHULARIACEAE)
KATIA N. VELICHKOVA, IVAN K. KIRIAKOV – THE MORPHOLOGICAL VARIABILITY OF TETRASTIUM STAUROGENIAEFORME (SCHRÖD.) LEMM. IN THE NATURE
IVANKA DIMITROVA, VALENTINA PETKOVA, GALINA ANTONOVA, VENELINA YANKOVA, STOYKA MASHEVA, STEFAN NEYKOV – INVESTIGATION ON BRASSICA OLERACEA L. GENOTYPES IN VIEW OF BREEDING FOR PEST AND DISEASE RESISTANCE. I. ANATOMICAL AND PHYSIOLOGICAL STUDIES ON BRASSICA OLERACEA VAR. CAPITATA L
Kiril Stoyanov – Micromorphological study of the seeds in Bulgarian Representatives of Genus <i>Phelipanche</i> (Pomel) Sojak (Orobranchaceae)
VARBANOVA K., D. DIMITROVA, K. KORNOVA - GROWTH AND DEVELOPMENT OF RUTA GRAVEOLENS L. DEPENDING ON THE METHOD OF MULTIPLICATION
D. DIMITROVA, K. VARBANOVA, K. KOZHUHAROVA, A. STEFANOVA – EXAMINATION OF DIFFERENT VITAMIN COMPLEXES <i>IN VITRO</i> . MULTIPLICATION OF <i>RUBIA TINCTORUM</i>
GEORGI STOICHEV, MELANIA GYOSHEVA – NEW AND RARE MACROMYCETES TO BULGARIA 298 K. KOZHUHAROVA, N. DODUNCHEV – VARIABILITY IN THE ENDEMIC BULGARIAN GYPSOPHILA TEKIRE STEF. POPULATION
TSVETOMIR TSVETANOV, VLADIMIR VLADIMIROV, ANTOANETA PETROVA – NEW LOCALITIES OF <i>OPHRYS INSECTIFERA</i> (<i>ORCHIDACEAE</i>) IN BULGARIA
DESSISLAVA GYUROVA – DISTRIBUTION OF MEDICINAL PLANTS IN CONIFEROUS HABITATS OF VITOSHA NATURE PARK
DOLJA PAVLOVA – RARE PLANTS GROWING ON SERPENTINES IN THE CENTRAL RHODOPES MTS. (BULGARIA)
IRA STANCHEVA, MARIA GENEVA, GRIGOR ZEHIROV, GEORGI GEORGIEV – EFFECTS OF FOLIAR FERTILIZER CONCENTRATION ON THE BIOMASS ACCUMULATION AND NITRATE ASSIMILATION RATE OF MILK THISTLE (SILYBUM MARIANUM)

IVANKA TENEVA, RUMEN MLADENOV, NIKOLA POPOV, BALIK DZHAMBAZOV – PHYLOGENETIC CHARACTERIZATION OF NOSTOS LINCKIA AND NOSTOS PUNCTIFORME (CYANOPROCARYOTA) BASED ON cpcB-cpcA GENE SEQUENCES	34
MARIETA HRISTOZKOVA, IRA STANCHEVA, MARIA GENEVA, GEORGI GEORGIEV – EFFECT OF DIFFERENT FOLIA FERTILIZER CONCENTRATIONS OF PEA PLANTS MODULATION AT REDUCED MO SUPPLY	36
G. ZEHIROV, G. GEORGIEV – EFFECTS OF BORON STARVATION OF LIGNIN CONTENT AND MINERAL COMPOSITION OF N2-FIXING SOYBEAN PLANTS (<i>GLYCINE MAX L. MERR.</i>)	37
NELI HRISTOVA GROZEVA – THE FLORA OF ATANASOVSKO LAKE NATURAL RESERVE	38
ZVETANKA RAYCHEVA – CHROMOSOME COUNTS IN SOME BULGARIAN TAXA OF SUBGENUS <i>RUMEX</i> (<i>POLYGONACEAE</i>)	39
SECTION ECOLOGY	
Z. ROUPETSOVA, H. NIKOLOV – GEOECOLOGICAL ASSESMENT OF THE SOSKOVCHETO RESERVE	41
MOHSEN ALI ABU REHAB, MARIANA NAKOVA, BORIS NAKOV – ROLE OF TELEOMORPHIN IN THE LIFE CYCLE OF GRAPES EXCORIOSIS CAUSAL AGENT /DIAPORTHE PERJUNCTA NISSL / FOR THE CONDITIONS OF SOUTH BULGARIA	42
DILIAN GEORGIEV GEORGIEV – SPECIES DIVERSITY AND HABITAT DISTRIBUTION OF THE MALACOFAUNA (<i>MOLLUSCA: BIVALVIA, GASTROPODA</i>) OF SURNENA SREDNA GORA MOUNTAIN (SOUTHERN BULGARIA)	42
BLAGOVEST TEMELKOV, TOMISLAV ANDREEV – RECENT BIVALVE ECOLOGY APPLIED TO THE RECONSTRUCTION OF PALEOCOMMUNITIES	43
VIOLETA DIMITROVA, MARJANA LUBENOVA, SVETLA BRATANOVA-DONCHEVA – ABOVEGROUND PHYTOMASS AND PRODUCTION IN THE SHRUB LAYER OF THE CHESTNUT (CASTANEA SATIVA MILL.) COMMUNITIES IN THE BELASITSA MOUNTAIN	44
STEFAN SHILEV, TODOR BABRIKOV – HEAVY METAL ACCUMULATION IN SOLANACEAE-PLANTS GROWN AT CONTAMINATED AREA	45
S. BALTOVA, I. VELCHEVA – SOME MORPHOLOGICAL AND PATHOLOGICAL MODIFICATION OF THE BLOD CELLS FROM <i>ALBURNUS ALBURNUS</i> IN INTOXICATION WITH HEAVY METALS (PB, ZN AND CD)	46
LUKOVIĆ J., KRISTIĆ L., HALGAŠEV M., MERKULOV Lj., NIKOLIĆ, N THE INFLUENCE OF DIFFERENT CONCENTRATIONS OF CADMIUM ON STRUCTURAL CHARACTERISTICS OF POPLAR CLONES ROOT	46
PETROVIĆ OLGA, RONČEVIĆ SRĐAN, DALMACIJA BOŽO, SIMEONOVIĆ JELICA, MARKOVIĆ JELENA – INFLUENCE OF HYDROCARBONS ON THE COUNT OF BACTERIAIN WATER OF THE AERATOR OF A LABORATORY SETUP FOR BIOREMEDIATION OF CONTAMINATED SOIL	47
PAJEVIĆ S., IGIĆ R., KRSTIĆ B., VUKOV D., BORIŠEV M., NIKOLIĆ N. – CHEMICAL COMPOSITIONS OF AQUATIC MACROPHYTES FROM THE DANUBE – ROLE IN BIOMONITORING AND BIOREMEDIATION	48
LIANA IONESCU, MADALINA CIOCAN – PHYTOPLANCTON AND ZOOPLANCTON IDENTIFICATION AND THEIR PRODUCTIVITY IN PELOIDOGENESIS PROCESS FROM THE THERAPEUTICALLY SALINE LAKES – Lacu Sarat BRAILA and Bazna, SIBIU – ROMANIA	49

SNEZANA STAVREVA-VESELINOVSKA, SNEZANA SAVIN-KIROVA – GLOBALIZED THINKING AS A MEANS OF REACHING A PROMISING FUTURE FOR BOTH MANKIND
AND EARTH
SECTION DEVELOPMENTAL BIOLOGY
M. BAKALSKA, A. RUSSINOVA, N. ATANASSOVA, Y. KOEVA, B. NIKOLOV, M. DAVIDOFF – ANTHROPOMETRIC CHARACTERIZATION OF OS MORPHOFUNCTIONAL ASPECTS OF ADULT RAT TESTIS AFTER ETHANE DIAMETHANESULPHONATE (EDS) TREATMENT
VESELIN PENKOV, VICTORIA NECHEVA, GERGANA INGILIZOVA – HISTOCHEMISTRY OF LIPIDS IN PHEASANT (<i>PHASIANUS COLCHICUS</i> L.) OVARY
TANYA TOPOUZOVA-HRISTOVA, ELENA STEPHANOVA - INHALATION ANESTHETICS PROVOKE REORGANIZATION OF NUCLEAR COMPONENTS IN HUMAN BRONCHIAL CELLS
ELENA TOMOVA, VICTORIA ST. SERAFIAN – PANCREAS IN VERTEBRATES – AN IMMUNOHISTOCHEMICAL STUDY OF BLOOD GROUP ANTIGEN EXPRESSION
P. MICHAILOVA, N. PETROVA – COMPARATIVE EFFECT OF HEAVY METALS ON THE POLYTENE CHROMOSOMES OF CHIRONOMIDAE, DIPTERA
S. GROZEVA, V. G. KUZNETSOVA, S. NOKKALA – CYTOGENETIC STUDY OF THE FAMILY NABIDAE (INSECTA, HETEROPTERA)
BORIS KRASTANOV – CHROMOSOME POLYMORPHISM IN <i>CHIRONOMUS BALATONICUS</i> DEVAI, WULKER, SCHOLL (DIPTERA, CHIRONOMIDAE) FROM BOURGAS LAKE
AURA MIHALCEA, VALERIA TICA, S. E. GEORGESCU, C. TESIO, ANCA DINISCHIOTU, E. CONDAC, MARIETA COSTACHE, ELENA IONICA – ALLELIC IMBALANCE ON CHROMOSOMES 1 AND 5 IN COLORECTAL CARCINOMA
TEODORA STAYKOVA, PETAR POPOV, EVGENIYA IVANOVA – BREED SPECIFIC EXPRESSION OF GUT SILKWORM (BOMBYX MORI L.) NONSPECIFIC ESTERASES
EVGENIYA IVANOVA, TEODORA STAYKOVA – GENETIC VARIABILITY IN DIFFERENT COLONIES FROM APIS MELLIFERA L. POPULATIONS
HOUMAN JABBARI FARHOUD, MERAL KENCE – MORPHOMETRIC AND MIDNA ANALYSIS IN HONEYBEE POPULATIONS (APIS MELLIFERA) ON NORTH AND NORTHWEST IRAN
MARIA BOUGA, FANI HATJINA – GENETIC VARIABILITY IN GREEK HONEY BEE (APIS MELLIFERA L.) POPULATIONS USING GEOMETRIC MORPHOMETRICS ANALYSIS
M. TOPASHKA - ANCHEVA, G. VOINOVA, TS. YORDANOVA, K. TROEV – GENOTOXIC AND ANTIPROLIFERATIVE EFFECTS OF THREE NEWLY SYNTHESIZED AMINOPHOSPHONIC ACIDS
CONSTANTIN MUNTEANU, DIANA CIOBOTARU, GABRIELA ZAMFIRESCU, OTILIA ZARNESCU, LOTUS MESTER – CYTOLOGICAL ASPECTS OF GLIAL CELLS AFTER TREATMENT WITH LITHIUM MINERAL WATERS

ANDREA CRISTINA STAICU, SIMONA PARASCHIV, CRISTINA MUNTEANU, C. TESIO, ELENA IONIČA, MARIETA COSTACHE, ANCA DINISCHIOTU – LIVER AND KIDNEY STRUCTURAL AND BIOCHEMICAL CHANGES INDUCED IN GOLDFISH	
(CARASSIUS AURATUS GIBELIO) DURING MANGANESE ACUTE INTOXICATION	637
G. ZAMPHIRUSCU, O. ZARNESCU, M. STANESCU, C. TELEIANU, C. MUNTEANU, D. CIOBOTARU, D. CINTEZA – THE EFFECTS OF ESTROGEN UPON ISCHEMIC CARDIOMYOCYTES. IN VITRO STUDIES	648
OANA CRACIUNESCU, LUCIA MOLDOVAN, CLAUDIA NICOLAE, G. L. RADU – MODULATION OF LASTIN SYNTHSIS IN PRIMARY CULTURES OF HUMAN FIBROBLASTS	663
LUCIA MOLDOVAN, WANDA BUZGARIU, OANA CRACIUNESCU, ELENA IULIA OPRITA, C. DOBOS, OTILIA ZARNESCU – PREPARATION OF POROUS COLLAGEN MATRICES AND THEIR INTERACTION WITH DIFFERENT CELL TYPES	671
CRISTINA MONTEANU, ANDREEA CRISTINA STAICU, EUGEN SIMIONICA, LOTUS ELENA MESTER, ELENA IONICA, MARIETA COSTACHE, ANCA DINISCHIOTU – LIVER, KIDNEY AND CELL BIOCHEMICAL CHANGES IN CARASSIUS AURATUS CIBELIO DURING LINDANE ACUTE INTOXICATION	682
ANDREEA IREN SERBAN-CAPATINA, EDUARD CONDAC, ELENA GANEA, ANCA DINISCHIOTU, MARIETA COSTACHE – GLYCATION OF COLLAGEN: THE INFLUENCE OF AMINOGUANIDINE AND CU 2+ IN THE FORMATION OF FLUORESCENT AGES	693
VENTSESLAV ATANASOV, MARIELA ODJAKOVA – SPONTANEOUS AND INDUCED APOPTOSIS IN SALT STRESSED EMBRYOGENIC SUSPENSION CULTURES OF <i>DACTYLUS GLOMERATA</i> L	702
Y. MARTINOVA – PREPUBERTAL ONSET OF SPERMATOGENESIS IN UNDER THE DIRECT CONTROL OF FGES FAMILY	708
VENETA M. KAPCHINA-TOTEVA, ELENA T. IAKIMOVA, IVAN P. CHAVDAROV – EFFECT OF CYTOKININS ON IN VITRO CULTURED EXACUMAFFINE BALF.	714
E. PAVLOVA, N. ATANASSOVA, R. M. SHARPE – MORPHOLOGICAL AND QUANTITATIVE CHANGES IN RAT SEMINIFEROUS EPITHELIUM AT PUBERTY AFTER NEONATAL ESTROGEN EXPOSURE	723
N. PENKOVA — ENDOCRINE CELLS FROM THE GASTROINTESTINAL-PANCREATIC ENDOCRINE SYSTEM IN THE GASTRO-INTESTINAL TRACT OF HUMAN EMBRYOS IN THE 5 th- 6 th GESTATION WEEK	732
P. ATANASSOVA – SHORT-TERM AND LONG-TERM EFFECT OF OXYTOCIN ON THE MORPHOLOGY AND FUNCTIONAL ACTIVITY OF FEMALE RAT SUBCUTANEOUS ADIPOSE TISSUE	739
JULIA ILKOVA – THE EFFECT OF LEAD ON THE POLYTENE CHROMOSOMES OF CHIRONOMUS PIGER STRENZKE (DIPTERA, CHIRONOMIDAE)	744
E. PETROVA, Y. KOEVA – RESPONSE OF STEROID HORMONE – PRODUCING CELLS ON HORMONAL INFLUENCES	753

PROCEEDINGS OF THE BALKAN SCIENTIFIC CONFERENCE OF BIOLOGY IN PLOVDIV (BULGARIA) FROM 19TH TILL 21ST OF MAY 2005 (EDS B. GRUEV, M. NIKOLOVA AND A. DONEV), 2005 (P. 511–516)

GLOBALIZED THINKING AS A MEANS OF REACHING A PROMISING FUTURE FOR BOTH MANKIND AND EARTH

Snezana Stavreva-Veselinovska¹, Snezana Savin-Kirova¹

ABSTRACT. This paper deals with the ways of how globalization of environmental issues can help the promotion of human interaction with the environment.

The beginning of the 21st century is fraught with environmental problems that raise the question whether humanity and the planet are facing possible extinction. These issues are no longer local but global so we cannot close our eyes before them. Theoretically, we are all willing to contribute to the salvation of the planet, but when it comes to action, most people show a certain degree of selfishness concerning their daily lives. Our standard of living is founded on the depletion of Earth's resources. Hence, the change must begin in our minds.

KEY WORDS: globalization, future, local, environmental issues, minds, planet Earth.

The awakening of the global consciousness

The most powerful event that mankind is faced with today is the great awakening on a planetary level which was being created for a whole millennium. We, human beings, are in the middle of huge progress as a species to a higher form of global awareness entering through cultures, religions and views of the world through the centuries. This awakening of the global consciousness is nothing else but a change, maturing from more egocentric ways of life to higher forms of integral and dialogical ways of life. The egocentric way of thinking and living directly lead to fragmentation, alienation and pathologies on an individual and collective level. The great spiritual traditions perceived a long time ago, that the key to our survival, sustainability and prosperity, urge our conscious evolution towards a dialogical way of life that brings to the surface our true moral, rational and spiritual nature as a species.

This transition, as a kind of global consciousness, involves a direct confrontation and joint creation of a common foundation among the views of the

_

¹ Pedagogical faculty "Goce Delcev", Stip, R. Macedonia

world – the fundamental *Logos* which is the source of different cultural and religious views. It can be seen from this that the essential source of chronic violence and destruction of human relations results from the egocentric ways. The key for stopping the violence among cultures, and for the progress of global cultures and peace, non-violence and mutual improvement, is our individual and collective progress as human beings who live in the manner of deepest and true dialogue. Today's transition has reached its critical point, and the only and most important event that mankind is facing now, and also the key to our future, is this progress of the **awakened global consciousness**.

What is "global consciousness"?

The awakening of the **global consciousness** is a new and monumental event in the evolution of mankind, even though it made its way through our various spiritual traditions through the centuries. But, this great scene in the human drama obviously is not ready, as people tend to process reality from their own perspective, view of life, or through the narrative or cultural prism. We have access to the global consciousness only when we are able to stop for a moment and gain a critical distance from our localized personal perspective and to enter the wider sphere of the **global perspective** in the awakening of the global consciousness.

Which are the ways of awakening of the global consciousness?

- The global turn of cultural life is written as innate in our great planetary cultures, and it has appeared through the centuries.
- Our great spiritual traditions and teachers, all in a variety of ways, opened and nurtured the way to the global consciousness.
- The mature awakening of this consciousness that we are facing in the XXI century is new for the mankind's position.
- The access to this kind of global consciousness can result from the transformation of rational mind and intelligence in global perspective.

Global consciousness and the perspectives of global education

The students of today will be facing more often the new world order which will unavoidably require global education also. They will daily be in contact with people with different ethnical, racial, linguistic and socio-economic backgrounds, and they will also face some of the most serious problems, for example various diseases, inequality between developed and underdeveloped countries, environmental destruction, overpopulation, transnational migrations, ethnic nationalism and decline of national states. Because of this there is a need for a relevant curriculum which will help the students with different world views to comprehend the concept of **globalization**, as well as the role of **global education**.

All the children, no matter what race or culture, have the right to be educated and have to be given the means to help them develop attitudes, knowledge and skills necessary for them to have in order to become competent, responsible and humane citizens of their community. They should develop cross-cultural skills and attitude so as to become effective citizens in the pluralistic society full of variety.

One of the first experts who gave a clear definition of the concept of globalization and global consciousness is *Hanvey* (1976). In his definition he gives five dimensions that prepare the student for the global consciousness and global thinking. These dimensions are stated below:

- Perspective consciousness
- State-of-the-planet awareness
- Cross-cultural awareness
- Knowledge of global dynamics
- Awareness of human choices

The five dimensions given by Hanvey (1976) were later paraphrased by Kirkwood (2001) and Haavenson et al. (1998/99).

Perspective consciousness

This consciousness refers to an awareness and respect for other people's views of the world. Some worldviews are not necessarily right or widely accepted. Therefore, they can vary a great deal, with profound differences. Perspectives are shaped by many factors among which are ethnical, religious and social status, as well as age and sex. These differences, as said by Haavenson et al. (1998/99), "have been one of the main causes of conflict and confrontation in the history of mankind" (p.38). They also say that, "it is important to teach students to look upon a certain phenomenon or event from different perspectives so as to encourage respect and appreciation for beliefs, customs, and values different from their own". (p.38)

State-of-the-planet awareness

For this awareness we need understanding of global issues, as for example population increase, migrations, economic differences, depletion of resources and international conflict. Children should be made aware that everything that affects the world, also affects them. Even in elementary school the students can be taught to make decisions about the ways of preventing the catastrophe, by studying the consequences of ecological illiteracy.

Cross-cultural awareness

The third dimension-cross-cultural awareness-understands that there is a diversity of ideas and practices in human societies, and that these could be found all

around the world. According to Hanvey (1976) this dimension is the hardest to acquire by students as it is related to the highest level of global cognition. One of the effective ways of promoting the cross-cultural awareness is by showing video materials and encouraging discussions after their watching in order to help students to distinguish stereotypical views from those that are more authentic.

Knowledge of global dynamics

This dimension is about how to grasp that the world is an interconnected system of complex characteristics and mechanisms and unforeseen consequences. It also includes the awareness of a global change. Students learn how to identify subtle relations of reason and result, to predict side effects and make decisions about eliminating or changing unwanted consequences.

Awareness of human choices

It focuses on making choices and developing a sense of responsibility for making decisions that will have influence on the generations yet to come. It also involves an awareness of the connection among individuals, national, and international settings. It nurtures the sense of responsible citizenship on local and global levels. Students are required to explain their choice and to learn how to be tolerant toward other people's views.

The students need the experience in critical thinking, in participating in cross-cultural experiences, in making decisions and their connecting. The importance of the atmosphere in the classroom created by the teacher is strongly emphasized.

Global awareness elements

Case (1993) identified five essential elements that keep the people informed about global topics. The first element describes universal values and cultural practices. The second one includes global mutual relationships in relation to the study of four main interactive global systems: economic, political, ecological and technological. The third element represents the world issues as development and peace. The fourth shapes the backgrounds and past patterns of world events, as for example are global history and geography. The last one represents alternative future trends in world events.

The fact that the ecological health of the world is as important as taking care of the whole mankind should be specially emphasized, and that these two must work simultaneously.

Global education comprises interconnectedness of communities, countries and nations, as well as mutual relations of social and natural phenomena. For students who are able to think independently and to look critically on social changes the classroom will be a more exciting and challenging place. Engaging students to learn

through dialogue makes the way of acquiring knowledge and competence much easier.

The most effective way of engaging students to learn about global perspectives is to teach them to observe the world as a planetary society and to understand the mutual dependency of human beings. Teachers should develop global knowledge, cross-cultural experience, and to extend their own perspectives of the world in order to help students in achieving their goals.

Conclusion

In the area of global education many more things are left to be researched. Several groups of nations cannot cope with the challenge of destruction of the effects of colonization and cultural imperialism. Informed educators are needed who will know how to present the global awareness issues and how to create an atmosphere of confidence in the classroom. All the children in the world have the right to be educated. This fact could be a great start for expanding global perspective on the whole society. Education should change people into better persons and create prosperous, productive and meaningful lives.

All the nations of the world are connected and there is no race or culture better than others.

The role of the teacher is to create a successful classroom. A successful classroom is a place where each student feels he/she has its place, a place, more than time, where all the inner dreams and demons can be shared with other students and teachers without any sneer, where individual differences concerning colour, beliefs or background are only seen as a contribution to a shared future.

The aim of the globalized education is a movement toward a less ethnocentric worldview.

We, modern educators, should implant into our students the curiosity about the world and the desire to work together on the creation of our future world as a better and healthier place to live in. We should create a place where all the races and cultures of the world will be able to learn how to respect other people's worldviews, where all the perspectives are respected and encouraged, and we should make a place where all students could work and live as responsible citizens, not only of their own pluralistic society, but of the world.

REFERENCES:

- HAAVENSON, P, SAVUKOVA, G, & MASON, T. 1998/99. Teacher education reform and global education: United States and Russian perpectives. *The international Journal of Social Education*, 13, 29-47.
- KIRKWOOD, T. 2001. Our global age requires global education: Clorifying definitional ambiguities. *Social Studies*, 92, 1-16.
- MASON, T., KRUCHKOV, V., & KILBANE, J. 1998/99. United States and Russian teachers' perspectives on the integrated curriculum in global education. *The International Journal of Social Education*, 13, 89-104.
- CASE, R. & WERNER, W. 1997. Themes of global education. In Wright, A & Sears, A. (Eds.), *Trends and Issues in Canadian Social Studies* (pp. 176-193). Vancouver: Pacifics Educational Press.