



**International History,
Philosophy and Science
Teaching Group**

NEWSLETTER

March 2009

www.ihpst.org

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1. Science & Education Latest Number

The following numbers of the journal have recently been published.

Volume 18 Nos. 3-4 April 2009

Ninth International, History, Philosophy & Science Teaching Conference (Select Proceedings) Guest Editor: HsingChi Wang von Bergmann

HSINGCHI VON BERGMANN / Designing and Assessing Contextual Approaches to the Teaching of Science and Mathematics: Introduction

HISTORY, PHILOSOPHY AND FOUNDATIONAL ISSUES IN SCIENCE EDUCATION

ROLAND M. SCHULZ / Reforming Science Education: Part I. The Search for a Philosophy of Science Education

ROLAND M. SCHULZ / Reforming Science Education: Part II. Utilizing Kieran Egan's Educational Metatheory

SUVI TALA / Unified View of Science and Technology for Education: Technoscience and Technoscience Education

HAYO SIEMSEN & KARL HAYO SIEMSEN / Resettling the Thoughts of Ernst Mach and the Vienna Circle to Europe: The cases of Finland and Germany

HISTORY, PHILOSOPHY AND SCIENCE PEDAGOGY

CALVIN S. KALMAN / The Need to Emphasize Epistemology in the Teaching of Science: Use of Reflective Writing

NAHUM KIPNIS / 'Physical Law' in the Classroom: the Case of Ohm's Law

COLIN F. GAULD / Newton's Use of the Pendulum to Investigate Fluid Resistance: A Case Study and Some Implications for Teaching about the Nature of Science

STEPHEN KLASSEN / The Construction and Analysis of a Science Story: A Proposed Methodology

HISTORY, PHILOSOPHY AND CURRICULUM CONSIDERATIONS

GLENN ROBERT DOLPHIN / Evolution of the Theory of the Earth: A Contextualized Approach for Teaching the History of the Theory of Plate Tectonics to Ninth Grade Students

AGUSTIN ADURIZ-BRAVO & MERCÉ IZQUIERDO-AYMERICH / Physical Construction of the Chemical Atom: Is it Convenient to Go All the Way Back?

KATERINA MALAMITSA, MICHAEL KASOUTAS & PANAGIOTIS KOKKOTAS / Assessing the Development of Critical Thinking in Greece through an Approach of Teaching Science to Primary School Students which Incorporates Aspects of History of Science

CHARBEL NIÑO EL-HANI, RICARDO S DO CARMO & NEIF NUNES-NETO / Gaia Theory in Brazilian High School Biology Textbooks

CHARBEL NIÑO EL-HANI & GEILSA C BAPTISTA / Ethnobiology and Dialogue Between Ways of Knowing in Biology Teaching: A Case Study in a Brazilian Public High School

Volume 18 No. 2 February 2009

Special Issue: *Politics and Philosophy of Science*

Guest Editor: *Heather Douglas*

HEATHER DOUGLAS / Philosophy of Science, Political Engagement, and the Cold War: An Introduction

THOMAS UEBEL / Knowing who your Friends are: The Politics of Logical Empiricism

DAVID J. STUMP / Pragmatism, Activism, and the Icy Slopes of Logic in George Reisch's Portrait of the Philosophy of Science as a Young Field

SCOTT EDGAR / Logical Empiricism, Politics, and Professionalism

GEORGE REISCH / Three Kinds of Political Engagement for Philosophy of Science

DON HOWARD / Better Red than Dead - Putting an End to the Social Irrelevance of Post-war Philosophy of Science

The above articles, and all published articles since Volume One, 1992, and all articles that are currently accepted and 'in print', are available on the web via Springer's journal site:

www.springer.com/journal/11191 .

Journal subscription (print version) can be effected at www.ihpst.org

2. IHPST Tenth International Conference, June 24-28, 2009 (March 23 submission date)

The University of Notre Dame's HPS Graduate Program and Reilly Center for Science, Technology, and Values will host the 2009 Tenth biennial IHPST meeting June 24-28, 2009 on the Notre Dame campus in South Bend, Indiana. It will continue the IHPST tradition of sustained and serious research being discussed in a collegial and convivial atmosphere.

Proposals are welcomed in all areas and periods of history and philosophy of science with implications for theoretical and pedagogical issues in science and mathematics teaching. Philosophers of Education are also invited to contribute to these same issues.

Proposals (250words) should be submitted by email as an attached file (MS Word, or RTF) to : ihpst09@nd.edu by March 23rd.

Please name the submitted file with the surname of the first author (For Example: bergmann_proposal.doc. Panel discussion or symposia proposals are encouraged. Symposium proposals should include a general description of the symposium topic together with brief abstracts of the individual contributions to the symposium.

Proposals should follow format and conventions used in 'Science & Education' journal. Capital letters for Author, with full mail and email address, title in bold with upper and lower case used, 12pt font preferred. Poster proposals are also welcome. Substitute 'poster' in above directions.

Limited funding might be available to support the participation of scholars from depressed economies.

Registration and Accommodation details can be found at the conference web site

<http://www.nd.edu/~ihpst09>

Please note that the link has to be followed through to the Centre for Continuing Education, then 'complete events calendar'. Alternatively go straight to:

https://shop.nd.edu/C21688_ustores/web/product_detail.jsp?PRODUCTID=1065&SINGLESTORE=true

Registration Fees (include all meeting materials, receptions, refreshments, and Saturday banquet). Full registration is \$370 and will increase to \$450 on June 1 and Graduate Student registration is \$250 and on June 1 will increase to \$325.

Programme it is anticipated that the conference will begin at 3pm on Wednesday June 24 and conclude at noon on Sunday 28. The exact starting and finishing times will be advised later.

The Springer Lecture will be given by Robert T. Pennock who is an associate professor in the Lyman Briggs College and the Department of Philosophy and the Department of Computer Science at Michigan State University. He received his PhD in History and Philosophy of Science from the University of Pittsburgh in 1991. Pennock's research focuses on epistemic and ethical values as they relate to scientific methodology, and also on using the 'behaviour' of artificial life to examine processes of evolutionary change. He is the author of *Tower of Babel: The Evidence against the New Creationism* (MIT Press, 1999), which provides a critical analysis of the significant developments in the creationist movement in the 1990's, and editor of *Intelligent Design Creationism and Its Critics* (MIT Press, 2001).

Among Pennock's 2007 publications are articles on 'Investigating the Emergence of Phenotypic Plasticity in Evolving Digital Organisms', 'Learning Evolution and the Nature of Science using Evolutionary Computing and Artificial Life', 'Models, Simulations, Instantiations and Evidence: The Case of Digital Evolution', 'God of the Gaps: The Argument from Ignorance and the Limits of Methodological Naturalism' and 'Biology and Religion' the last in the *Cambridge Companion to Philosophy of Biology*.

Apart from scholarly pursuits, Pennock is a staunch defender of proper and sound science education. He was an expert witness in the critical Kitzmiller et al v. Dover Area School Board trial of 2005; he is president of Michigan Citizens for Science; and chair of the Education Committee of the Society for the Study of Evolution; he has long been on the Editorial Committee and a reviewer for *Science & Education*.

For more information about IHPST 2009, please visit the conference website:

<http://www.nd.edu/~ihpst09>

Questions may be directed to the special conference email address: ihpst09@nd.edu or to:

Don Howard, Philosophy Department, University of Notre Dame. Email: dhoward1@nd.edu

3. *Science & Education* Journal Report

(a) Journal on the Web

The journal *Science & Education* is now available on the web at: <http://www.springerlink.com/> (then PUBLICATIONS, then S, then 'Science & Education'), or more directly at the journal's home

page: www.springer.com/journal/11191. The home page has provision for signing up for 'Table of Contents Alert', which means each time an issue of the journal is published, the Contents are conveyed by email.

The articles can be accessed directly at:
<http://springerlink.metapress.com/content/1573-1901/>

All articles can be downloaded as pdf files for free if the individual's institution subscribes to the relevant Springer journal package; otherwise they can be downloaded for a fee.

Alternatively subscription renewals for printed journals and new subscriptions (USD100 pa, with discount for students, retired faculty and scholars from depressed economies), can be effected at the IHPST web site: www.ihpst.org

The Springer site is now linked to Google, and articles can be searched in Google by typing in author name and first words of title. This goes direct to the Springer site and the pdf file of the article.

Approximately 3,000 institutions around the world have subscribed to the on-line version of the journal, while many institutions have subscriptions to both print and on-line versions.

The web site provides many services to researchers:

- # The 'On Line First' section allows access to all accepted, forthcoming articles in the journal. As soon as an article is accepted for publication, a typeset pdf version of it is posted on the web and can be accessed by individual journal subscribers or by individuals whose institutions subscribe to a Springer package that includes '*Science & Education*'.
- # The Contents of each issue of the journal, back to Volume 1 Number 1 in 1992, are available. These can be downloaded by subscribers and individuals whose institutions subscribe to the journal. They are also available, at a cost, to non-subscribers.
- # Full details of the Editorial Board and Submission process are posted.

(b) Manuscript Submissions

Scholars can submit manuscripts in file form direct to the journal at:

www.editorialmanager.com/sced/

Thereafter they can check on its progress through the review process. Most submissions are reviewed by three senior scholars, usually involving a spread of educator, historian, philosopher or cognitive scientist. The submission site also has a guide to the journal's format and style conventions.

(c) Copyediting Assistance for Manuscripts from Non-English Authors

The journal publishes many works by scholars whose native language is not English. Copyediting of these papers is very time-consuming and assistance would be greatly appreciated. The papers would all be ones that have passed review and are in reasonable linguistic shape, but they do need refinement. Volunteers would be asked to copyedit no more than one paper per year.

If any folk are able to assist in this important task, please just send an email to the editor.

(d) Article Downloads

The number of article-downloads from the journal's Springer site are continuing to rise year by year.

YEAR	2004	2005	2006	2007	2008
Downloads	21,373	22,500	23,584	37,593	48,634

For a 'niche' journal in science education, these figures are most gratifying. They indicate the amount of worldwide interest in the utilization of historical and philosophical studies in addressing theoretical and pedagogical problems in the teaching of science and mathematics. The figures reflect the quality of manuscripts submitted to the journal, and the rigor and competence of the reviewers, normally three per manuscript.

4. Applied HPS in the Classroom, Journal Special Issue, Call for Papers

Research and discussion about the multiple contributions of history and philosophy of science (HPS) to science teaching has gone on for many years. This special issue will focus on research dealing with applied and innovative projects concerning the "realization" in the classrooms of the various proposals about the use of HPS in science teaching.

HPS has provided a fruitful background for developing Nature of Science (NOS) instructional units, materials and teaching approaches. At the same time, it has offered efficient resources to researchers and educators in order to develop and evaluate classroom activities concerning the interactions of Science and Culture. HPS also features in the many goals proposed for Scientific Literacy that can be found in current curricular materials.

This special issue of *Science & Education* will offer to educators and researchers working in all the above areas (HPS, NOS, Science and Culture, Scientific Literacy) a forum to communicate their research, ideas, questions and worries concerning the application of HPS in classrooms.

Conceptual, theoretical, empirical or position-based manuscripts are welcome. Accordingly, examples of topics may include (but are not limited to) the following:

- Instructional material design inspired by history and philosophy of science
- HPS didactical/instructional units
- HPS programs, units and textbooks
- HPS in teacher education proposals
- HPS assessment in the classroom
- HPS and ICT in classroom proposals
- Cross-disciplinary approaches to HPS teaching in the classrooms
- Identifying in the classroom new research question for HPS
- Research methodology in the classroom concerning HPS
- HPS action research

Information about the IHPST Group, and journal style and formatting conventions, can be found out at: www.ihpst.org

Manuscripts, with Abstract, should be submitted for review direct to:

www.editorialmanager.com/sced

Submission date: **May 1st, 2009.**

Further questions and inquiries, as well as intention to submit, should be directed to the guest editors:

Fanny Seroglou School of Primary Education Faculty of Education Aristotle University of Thessaloniki Greece seroglou@eled.auth.gr	Agustín Adúriz-Bravo CEFIEC Faculty of Science University of Buenos Aires Argentina aadurizbravo@cefiec.fcen.uba.ar
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5. International Symposium: 'Learning by doing: Experiments and Instruments in the History of Science Teaching'

An international symposium 'Learning by doing: Experiments and Instruments in the History of Science Teaching' will take place on 4-5 April 2009 at the University of Regensburg (Ratisbon) in Germany. This symposium attempts to start the discussion in a field that has frequently been considered as being relevant in the formation of scientists, however, has not yet obtained significant scholarly attention. The 14 papers that will be presented during the symposium will serve as starting point for a broader discussion. The program as well as the complete announcement can be found at:

http://www.uni-regensburg.de/Fakultaeten/phil_Fak_I/Philosophie/Wissenschaftsgeschichte/Symposium-Wittje/

There is no participation fee. We ask participants to register until 20 March 2009.

In case of any further questions please contact the organisers:

Peter Heering: peter.heering@uni-oldenburg.de

Roland Wittje: Roland.Wittje@psk.uni-regensburg.de

The symposium is supported by the European Society for the History of Science and the Scientific Instrument Commission.

6. World History of Science Online project

I am pleased to start the new year with an announcement about the new web site for the World History of Science Online (WHSO) project. WHSO, which is sponsored by the Division of the History of Science and Technology within the International Union for the History and Philosophy of Science (DHST/IUHPS), will create a free sustainable online resource for the worldwide community interested in the history of science and technology in all its richness and diversity. The website address is:

<<http://www.dhst-whso.org/whso.htm>> <http://www.dhst-whso.org/whso.htm>.

Gavan McCarthy, Senior Research Fellow and Director of the University of Melbourne eScholarship Research Centre, and his team at Melbourne have completed the revisions to the website so that it is now searchable and easily expandable. This means that we are now able to accept new submission from contributors around the world. Our first goal is to populate this website with as many links and as much descriptive material as possible regarding ongoing activities in history of science bibliography and archiving. We, of course, want to focus on and link to digital, online, and free bibliographical and archival indexing efforts, but we would also like to

know about any relevant bibliographies and archival indexes that are available, regardless of whether they are in print or online, and whether they are freely accessible or not.

To that end, I would like to request that each of you send us notices about any efforts that you know of that are relevant to our mission. We are interested in both primary source bibliographies of scientists and their work as well as secondary source bibliographies about the history of science and technology. National and regional bibliographical and archival resources are especially important to us. The language of the source material does not matter, but we would like the access information in English if at all possible.

Eventually, we expect to be able to implement a meta-search capability to the site so that we can link directly to the data of online resources, thereby creating a major centralized finding aid for historians of science and technology. The accumulation of knowledge about existing resources is thus our first immediate step in that direction.

If you know of relevant resources, please send suggestions to both me, at:

Stephen Weldon <mailto:s.weldon@dhstweb.org> s.weldon@dhstweb.org, and
Ailie Smith, at <mailto:ailie.smith@unimelb.edu.au> ailie.smith@unimelb.edu.au.

We would like as much of the following information as possible, specifically: (1) name of resource; (2) its scope, purpose, and nature; (3) most relevant URL address; (4) contact information for any individuals associated with the project. If you are not able to provide all of that information, please give us what you know. Also please forward this message to other interested parties.

I look forward to your help and participation. Thank you,

Stephen Weldon
Chair, Governing Board, World History of Science Online
Bibliographer, Isis Current Bibliography, History of Science Society
Assistant Professor, History of Science, University of Oklahoma

7. Darwinian Celebrations

The year 2009 is a Darwinian double anniversary: 200 years since Darwin was born (12 February 1809) and 150 years since the publication of *On the Origin of Species* (24 November 1859). Rightly, many scientific and educational bodies are celebrating the anniversaries.

(a) *Science & Education*

To celebrate the occasion a special multiple-issue of *Science & Education* will be published. It is being guest edited by Drs. David Rudge and Kostas Kampourakis. The following scholars are contributing invited essays:

David Depew, History, University of Iowa: current historical studies of Darwinism.

Thomas Glick, History, Boston University: the comparative reception of Darwinism, with special attention to its reception in non-western countries.

Robert Pennock, Philosophy, Michigan State University: research relating to intelligent design and creationism

Michael Ruse, Philosophy, Florida State University: on Darwinism from a philosophical perspective.

Mike Smith, Medicine, Mercer University: contemporary science education research relating to the teaching and learning of evolution.

Paul Thagard, Philosophy and Psychology, University of Waterloo: cognitive and social impediments to acceptance of natural selection.

Additionally 32 research manuscripts have been submitted for consideration of publication in the issues. These are currently under review.

(b) *Scientific American*

Scientific American just came out with its January issue devoted to Darwin's 200th birthday. One of the key features--"The Latest Face of Creationism"--was written by Genie Scott and Glenn Branch of the National Centre for Science Education. Their article is online at:

<http://www.sciam.com/article.cfm?id=the-latest-face-of-creationism>

The entire January 2009 issue of Scientific American is at:

<http://www.sciam.com/sciammag/?contents=2009-01>

(c) *The New Republic*

This magazine has an excellent long review essay of two recent books on Darwinian Evolution and Religion:

Karl W. Giberson *Saving Darwin: How to be a Christian and Believe in Evolution*, (HarperOne, 248 pp., \$24.95)

Kenneth R. Miller *Only A Theory: Evolution and the Battle for America's Soul*, (Viking, 244 pp., \$25.95)

The review is by Jerry Allen Coyne professor in the Department of Ecology and Evolution at University of Chicago. He has served as Vice President of the Society for the Study of Evolution (1996) and as Associate Editor of *Evolution* (1985-1988; 1994-2000) and *The American Naturalist* (1990-1993). He currently teaches evolutionary biology, speciation, genetic analysis, social issues and scientific knowledge, and scientific speaking and writing. The review is available at:

<http://www.tnr.com/booksarts/story.html?id=1e3851a3-bdf7-438a-ac2a-a5e381a70472&k=39427>

8. Teaching Evolution: Theoretical and Pedagogical Issues,

GEITONAS School, Athens, 7-8 November 2009

To celebrate Darwinian anniversary a Conference is being organized by GEITONAS School in Athens (website: geitonas.edu.gr). Experts in the history of science, philosophy of science, and science education as well as teachers are invited to participate. Papers that focus on theoretical or pedagogical issues related to the teaching of evolution are welcome.

Submissions should be in the form of an extended summary (1,000-1,500 words) and should be

sent as an e-mail attachment to darwin2009@geitonas-school.gr in order to be reviewed by the members of the scientific committee.

Examples of topics may include (but are not limited to) the following:

- The life and work of Charles Darwin
- The theory of evolution in the light of the history and philosophy of science
- Cognitive barriers in understanding the theory of evolution
- Rationales and strategies for teaching evolution

Submission date: June 20th 2009

INVITED SPEAKERS	SCIENTIFIC COMMITTEE
<p>John Hedley Brooke <i>Emeritus Professor, University of Oxford</i></p>	<p>Costas B. Krimbas <i>Professor Emeritus, University of Athens</i></p>
<p>James G. Lennox <i>Professor, University of Pittsburgh</i></p>	<p>Kostas Gavroglou <i>Professor, University of Athens</i></p>
<p>David W. Rudge <i>Associate Professor, Western Michigan University</i></p>	<p>Vassiliki Zogza <i>Professor, University of Patras</i></p>
<p>Costas B. Krimbas <i>Emeritus Professor, University of Athens</i></p>	<p>Vassilis Koulaidis <i>Professor, University of Peloponese</i></p>
<p>Eleftherios Zouros <i>Emeritus Professor, University of Athens</i></p>	<p>Stathis Psillos <i>Associate Professor, University of Athens</i></p>
<p>Kyriacos Athanasiou <i>Professor, University of Athens</i></p>	
<p>Vasso Zogza <i>Professor, University of Patras</i></p>	

Information: darwin2009@geitonas-school.gr

9. Community Web Portal for Science and Mathematics Knowledge

The knowledge.org lab of Homi Bhabha Centre for Science Education, Mumbai, India, has launched a new community portal to make concept maps of all areas of knowledge, particularly science and mathematics knowledge. We are beginning with establishing dependency relations between concepts and activities. Soon we will extend the site for TypeMap, PartMap, InteractionMap, ProcessMap etc. Soon, a version of SELF Platform will be made that will automatically create structure of courses based on the dependency map.

While working on this project, we see a surprising result. The result is after adding the prerequisites, the map is aligning automatically in such a way that it shows is not only a sequence for learning, but also the sequence of history of ideas. It is turning out to be an empirical evidence

for the ontogeny recapitulates phylogeny hypothesis. Since the graph automatically arranges cognitively difficult concepts later, it demonstrates that discovery is a form of learning. This can be seen already with barely 400 concepts. from this map:

http://www.gnowledge.org/dp/147_depmap.png.

When we add more concepts the evidence will be more compelling. Since we can measure the distance between concepts using this graph objectively, it may eventually become an excellent tool for historians as well.

The site is waiting for community contributions and suggestions at

<http://www.gnowledge.org/>.

Nagarjuna G.

nagarjunag@gmail.com

<http://www.gnowledge.org/>

10. XXIII International Congress of History of Science and Technology, July 28 – August 2, 2009, Budapest, Hungary

The Hungarian National IUHPS Committee is pleased to invite you to attend and take an active part in the XXIII International Congress of History of Science and Technology in Budapest between 26 and 31 July, 2009.

The XXIII International Congress of History of Science and technology will be supported by the Hungarian Government, the Hungarian Academy of Sciences, the Budapest City Council, the Federation of Technical and Scientific Societies and other local institutions and organisations.

The World Academy of Young Scientists (with its seat in Budapest) will contribute to wide participation of young people from all over the world.

Budapest is undoubtedly one of the most beautiful metropolises in the world. The warm hospitality of the people, excellent food and wine, reliable and frequent public transportation, vivid cultural life, rich museums attract millions of visitors every year. Budapest is easy to reach, by air and on the ground, visitor-friendly visa policy, value-for-the-price services and goods, pleasant climate also make Hungary one of the most Popular meeting venues world-wide.

Important Dates:

Deadline for determination of the symposia programs	15 December, 2008
Deadline for abstract submission	15 January, 2009
Deadline for early registration	15 March, 2009
Deadline for hotel reservation	30 April, 2009
Opening of the Congress	28 July, 2009

Details available at: <http://www.conferences.hu/ichs09/>

11. 5th Greek Conference, History, Philosophy & Teaching of the Natural Sciences, University of Cyprus, Nicosia, 11-14 June 2009

The main subject of the Conference of the Philosophy, History and Teaching of Natural Sciences that will take place in Cyprus, in June 2009, is determined as "The interaction of the Great Scientific Theories in the Teaching of the Natural Sciences". The conference, has as main target, to reveal the interaction between the great scientific theories, pointing out questions as the impact of the characteristics of the Darwinian theory in our general perception for the scientific theories. An example is the degree in which the contemporary discussions, concerning the universality of the scientific laws, the limits of their application and the type of explanation that they give in the scientific phenomena, have been influenced by the structure of the Darwinian theory. Another example is the teaching of the scientific theories as a medium for explanation and prediction of phenomena which are characterized by limited fields of application and are continuously being criticized and revised.

The History of Science reveals that the theoretical pluralism is the most important sign of the development of Science. Undoubtedly, the scientific theories are created, developed and declined as a lot of other products of the human mind. However, a small number of scientific theories is characterized by extraordinary resistance in time. One from these theories, is the "Theory of Evolution" of Darwin. This theory was firstly presented in 1859 in the book "The Origin of Species". In 2009, 150 years will have been completed from the first publication of the book and 200 years will have been completed from the birth of Darwin. This anniversary provides the opportunity to all of us to think about the reason for which these great theories (eg, Darwinian, Newtonian, Quantum, Mechanics, Relativity) are diachronic and constituting an integral part of our Scientific Education.

In Greece, a small community of researchers and teachers has been already been created and since 2001 organized the conference of History, Philosophy and Teaching of the Natural Sciences. The present conference is the 5th conference in the row and has as basic target, like the previous conferences had, to promote an in-depth examination in relevance with the nature as well as the characteristics and the content which the history and the philosophy can obtain into the frame of the Natural Sciences.

The organizing committee of 5th Conference intends to broaden the character of the conference by inviting not only the Greek scientists and researchers but by inviting as well as scientists and researchers from all over the world to participate. A first step to this direction will be the lectures by distinguished foreign scientists as well as the organisation of an English-speaking symposium, that will take place during the conference.

For full conference details see: www.ucy.ac.cy/htp2009

12. HOPOS Conference June 24 - 27, 2010, Budapest

The eighth international congress of the International Society for the History of Philosophy of Science (HOPOS) will be sponsored by the Central European University (CEU), Eötvös Loránd University (ELTE), and the Budapest University of Technology and Economics (BME), with financial support of the Rector of Central European University. The conference venue will be Central European University, Budapest, Hungary.

The conference is open to scholarly work on the history of philosophy of science from any disciplinary perspective. Keynote speakers will be announced and a call for papers will be issued summer 2009.

HOPOS, The International Society for the History of Philosophy of Science, is devoted to promoting serious, scholarly research on the history of the philosophy of science. We construe this subject broadly, to include topics in the history of related disciplines and in all historical periods, studied through diverse methodologies. We aim to promote historical work in a variety of ways, but especially through encouraging exchange among scholars through meetings, publications, and electronic media. Information is available at <http://www.hopos.org> <<http://www.hopos.org/>> .

Conference Committee

Karl Hall (Local Organizing Committee) hallk@ceu.hu
William H. Krieger (Executive Secretary, HOPOS) krieger@mail.uri.edu
Eric Palmer (Treasurer, HOPOS & Allegheny College) epalmer@allegheny.edu
Laura J. Snyder (President 2009-2010, HOPOS) snyderl@stjohns.edu
Gábor Á. Zemplén (Local Organizing Committee) g_zemplen@hotmail.com

Details at: <http://www.hopos2010.ceu.hu> <<http://www.hopos2010.ceu.hu/>>

13. Opinion

There is none for this newsletter.

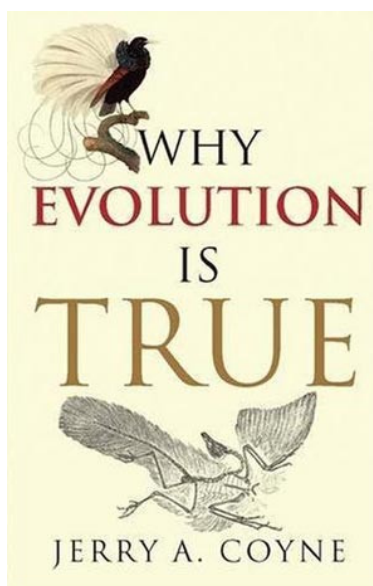
Opinion pieces on topics that bear upon the overlap of history, philosophy and science teaching are welcome. They should be sent as word attachments to the editor. Maximum length 2,000 words.

14. Book Notes

Jerry Coyne 2009. *Why Evolution Is True*. New York: Viking Press. \$27.95 U.S.

When Edward Wilson, Richard Dawkins, and Steven Pinker praise a book as marvelous, engrossing, and superb, it encourages one to pay attention. Jerry Coyne has been Professor of Ecology and Evolution at the University of Chicago for two decades and *Why Evolution Is True* is his first book for a general audience that for many years has enjoyed the work of scientists like Dawkins and Wilson and Pinker and Carl Sagan.

Shortly before I bought a copy of his book, I read Coyne's Feb. 04, 2009 review in *The New Republic* of two books by theistic scientists Karl Giberson and Kenneth



Miller.

In *Saving Darwin: How to be a Christian and Believe in Evolution* (Gilbertson) and *Only a Theory: Evolution and the Battle for America's Soul* (Miller) each author tries to harmonize science and religion but Coyne shows clearly how they fail to accomplish that goal. Coyne's review was so thorough (nearly 10,000 words) and well-reasoned that I sent a copy to a number of colleagues and then went to a local bookstore and bought his book. If the book is as good as his review, I thought, I want to read it now.

Wilson, Dawkins, Pinker, and the other reviewers were correct, Jerry Coyne's book is the best evidence-based explanation of evolution that I have read, and there are many very good books on evolution by people like Edward Wilson, Richard Dawkins, and Steven Pinker. In nine chapters (about 250 pages) Coyne lays out the main lines of evidence for evolution, showing why modern science recognizes evolution as true. Referring often to Charles Darwin's *On the Origin of Species* (1859), he closes his Introduction with these words, followed by a brief statement by Darwin from the *Origin*:

"The truth—that we, like lions, redwoods, and frogs, all resulted from the slow replacement of one gene by another, each step conferring a tiny reproductive advantage—is surely more satisfying than the myth that we were suddenly called into being from nothing. As so often happens, Darwin put it best":

When I view all beings not as special creations, but as the lineal descendents of some few beings which long before the first bed of the Cambrian system was deposited, they seem to me to become ennobled.

Coyne stays in close touch with Darwin throughout the book, using quotes to introduce chapters and to emphasize Darwin's amazing insight on a wide range of topics. It is easy to imagine Professor Coyne using these quotes in the evolution courses he teaches at the University of Chicago, helping students better understand and feel the human side of Darwin in particular and of science in general.

From chapter one "What Is Evolution" to chapter eight "What About Us?" the overwhelming evidence for evolution is presented in clear and nontechnical language. The 27 figures that are used to illustrate the evidence for evolution are clear and, although more figures would probably assist the reader in places, the book is highly readable and lucid throughout. The last chapter "Evolution Redux" includes a look at objections to evolution by creationists and others who simply fail to understand the basics of modern evolution theory. Coyne recalls a talk he gave to a group of businessmen in Chicago and after the talk a member of the audience approached him and said, "I found your evidence for evolution very convincing—but I still don't believe it." I was reminded of a similar statement by a student in a physics course that I taught at Louisiana State University. In a letter to me at the end of the course the student said she wrote the answers on the exam according to the textbook (re big bang theory) but did not believe any of it because it conflicted with her religious beliefs. These examples illustrate the difficulty of opening closed minds even when overwhelming evidence is used clearly and consistently.

In the remainder of his last chapter Coyne continues to look at critics of evolution and explain why their "arguments" are wrong and often specious. For example he says that creationists and sometimes other critics of evolution use the professional arguments among scientists about the details of how evolution occurred to suggest that widespread disagreement exists about the factual basis of evolution. About this he says:

“There is no dissent among serious biologists about the major claims of evolutionary theory—only about the details of how evolution occurred, and about the relative roles of various evolutionary mechanisms. Far from discrediting evolution, the “controversies” are in fact the sign of a vibrant, thriving field. What moves science forward is ignorance, debate, and the testing of alternative theories with observations and experiments. A science without controversies is a science without progress.”

In the last few pages are cautionary notes about “...an increasing tendency of psychologists, biologists, and philosophers to Darwinize every aspect of human behavior, turning its study into a scientific parlor game.” Clearly, going too far beyond the scientific evidence at hand is not recommended or admired by Jerry Coyne.

The author uses a final quote by British novelist Ian McEwan in considering the failure of science to replace conventional religion as the main source of wonder and consolation:

Our secular and scientific culture has not replaced or even challenged these mutually incompatible, supernatural thought systems. Scientific method, skepticism, or rationality in general, has yet to find an an over-arching narrative of sufficient power, simplicity, and wide appeal to compete with the old stories that give meaning to people’s lives. Natural selection is a powerful, elegant, and economic explicator of life on earth in all its diversity, and perhaps it contains the seeds of a rival creation myth that would have the power of being true—but it awaits its inspired synthesizer, its poet, its Milton...Reason and myth remain uneasy bedfellows.

Jerry Coyne does not profess to be the Milton of Darwinism but he joins E. O. Wilson and Richard Dawkins and Daniel Dennett and other scientists who are able to translate the scientific theory of evolution into readable, interesting, even inspiring accounts of what many informed observers believe is the most important story that science has to tell.

Why Evolution Is True is sure to become one of the most valuable books on evolution both for students and teachers of evolution as well as those who follow the religion—science controversies.

Reviewed by Ron Good, Professor Emeritus, Louisiana State University (1987-2002) and Florida State University (1968-1986). Dr. Good is the author of *Scientific and Religious Habits of Mind*. 2005. NY: Peter Lang Press.

All newsletter readers are invited to submit *Book Notes*. They should follow the format and style as used in this newsletter, and be sent as attachments to the editor. This basically means providing full bibliographic details, some brief account of the content of the book in 3-5 paragraphs, and ideally a scanned file of its cover. Longer reviews are also welcome

The Book Notes are a way of bringing good and relevant books on history and philosophy of science, sociology of science, philosophy of education to the attention of the large group of scholars interested in the utilisation of these fields of study in addressing theoretical, curricular and pedagogical issues in science and mathematics education.

15. Current Research

Apart from contributions to *Science & Education* the following are some papers published in recent years that bear upon the research concerns of the IHPST Group.

Suggestions for up-dating this list should be sent to the Editor at m.matthews@unsw.edu.au

- Niaz, M.: 2007, 'Can Findings of Qualitative Research in Education be Generalized?', *Quality and Quantity: International Journal of Methodology* **41**, 429-445.
- Niaz, M.: 2008, 'Whither constructivism? --- A chemistry teachers' perspective', *Teaching and Teacher Education* **24**, 400-416.
- Niaz, M. : 2008, 'What 'ideas-about-science' should be taught in school science? A chemistry teachers' perspective', *Instructional Science* **36**, 233-249.
- Niaz, M., & Fernández, R.: 2008, 'Understanding quantum numbers in general chemistry textbooks', *International Journal of Science Education* **30**, 869-901.
- Costu, B., Ayas, A., Niaz, M., Ünal, S., & Calik, M.: 2007, 'Facilitating conceptual change in students' understanding of boiling concept', *Journal of Science Education and Technology* **16**, 524-536.
- Carson, R. & Rowlands, S.:2007, 'Strategies for Affecting the Necessary Course of Cognitive Growth as an Integral Part of Curricular and Instructional Planning', *Interchange* **38**(2).
- Schulz, R. M.: 2007, 'Lyotard, Postmodernism and Science Education. A Rejoinder to Zembylas', *Educational Philosophy and Theory*, **39**(6), 633-656.
- El-Hani, C. N. & Mortimer, E. F.:2007, 'Multicultural Education, Pragmatism, and the Goals of Science Teaching', *Cultural Studies of Science Education* **2**(3): 657-687.
- El-Hani, C. N.:2007, Between the Cross and the Sword: The Crisis of the Gene Concept. *Genetics and Molecular Biology***30**(2), 297-307.
- Ford, M.:2008, 'Disciplinary Authority and Accountability in Scientific Practice and Learning', *Science Education* **92**, 404-423.
- Rowlands, S.: 2008, 'The crisis in science education and the need to enculturate all learners in science'. In C.L. Petroselli (ed) *Science Education: Issues and Developments*. New York; Nova.
- El-Hani, C.N. & Bandeira, F.P.S.F.: 2008,. 'Valuing Indigenous Knowledge: To call it "Science" will not help. *Cultural Studies of Science Education* **3**(3): 751-779. DOI: 10.1007/s11422-008-9129-6
- Slezak, P.: 2007, 'Is Cognitive Science Relevant to Teaching?' *Journal of Cognitive Science* **8**, 171-208.
- Pitombo, M. A., Almeida, A. M. R. & El-Hani, C. N. (2008). Gene concepts in higher education cell and molecular biology textbooks. *Science Education International* **19**(2): 219-234.
- El-Hani, C. N. & Bandeira, F. P. S. F. (2008). Valuing Indigenous knowledge: To call it "science" will not help. *Cultural Studies of Science Education* **3**(3): 751-779. DOI: 10.1007/s11422-008-9129-6
- El-Hani, C. N. (2008). Theory-based approaches to the concept of life and biological education. *Journal of Biological Education* **42**(4): 147-149.
- Chang, S.-N. & Chiu, M.-H.: 2008, 'Lakatos' Scientific Research Programmes as a Framework for Analysing Informal Argumentation about Socio-scientific Issues', *International Journal of Science Education* **30**(13), 1753-1773.
- Abd-El-Khalick, F., Waters, M. & Le, A.-P.: 2008, 'Representations of Nature of Science in High School Chemistry Textbooks over the Past Four Decades', *Journal of Research in Science Teaching* **45**(7), 835-855.
- De Housson, C. and Kaminski, W.: 2007, 'Historical Controversy as an Educational tool: Evaluating Elements of a Teaching-Learning Sequence Conducted with the Text "Dialogue on the Ways that vision Operates"', *International Journal of Science Education*, **29**, 617-642.

The following books have recently been published by group members:

- Maria Rentetzi: 2007, *Trafficking Materials and Gendered Experimental Practices: Radium Research in Early 20th Century Vienna*, Columbia University Press, New York.

- Andre Koch Torres Assis & Julio Akashi Hernandez: 2007, *The Electric Force of a Current. Weber and the Surface Charges of Resistive Conductors Carrying Steady Currents*, Apeiron Books, Montreal.
 [This book is also available as a pdf file from: <http://www.ifi.unicamp.br/~assis>]
- Kalman, C.S.: 2007, *Successful Science and Engineering Teaching in Colleges and Universities*, Anker Publishing Company, Boston
- Kalman, C.S.: 2008, *Successful Science and Engineering Teaching: Theoretical and Learning Perspectives*, Springer, Dordrecht.
- Andre Koch Torres Assis: 2008, *Archimedes, the Center of Gravity, and the First Law of Mechanics*, Apeiron Books, Montreal.
 [This book is also available as a pdf file from: <http://www.ifi.unicamp.br/~assis>]
- Niaz, M.: 2008, *Teaching general chemistry: A history and philosophy of science approach*, Nova Science Publishers, New York.
- Forge, J.: 2008, *The Responsible Scientist: A Philosophical Inquiry*, University of Pittsburgh Press, Pittsburgh.

16. Publications for Sale

The following publications can be ordered from the IHPST Group at www.ihpst.org :

- #1 *CD Proceedings of the 6th IHPST Conference, Denver, 2001*, 100 papers, W. McComas (ed.), USD10.
- #2 *CD Proceedings of the 7th IHPST Conference, Winnipeg, 2003*, 100+ papers, D. Metz (ed.), USD10.
- #3 *Science Education and Culture*, F. Bevilacqua, E. Giannetto & M.R. Matthews (eds.), Kluwer, 2001, 362pp, USD20.
- #4 *Science & Education* journal Volume 2, 1993, 382pp, USD10.
- #6 *Science & Education* journal Volume 12, 2003, 808 pps, USD20.
- #7 *Science & Education* journal Volume 13, 2004, 840 pps, USD10.
- #8 *The Pendulum: Scientific, Historical, Philosophical & Educational Perspectives* (Michael R. Matthews, Colin Gauld & Arthur Stinner (eds.), Springer, 2005, USD20

17. Coming Conferences

- March 19-22, 2009, Philosophy of Education Society (USA), annual conference, Montreal
 Details at: <http://philosophyofeducation.org/>
- April 3-5, 2009, Philosophy of Education Society (Great Britain), annual conference, Oxford
 Details at: www.philosophy-of-education.org
- April 17-21, 2009, National Association for Research in Science Teaching (NARST) annual conference, Anaheim, California.
 The conference includes a strand on 'History, Philosophy and Science Teaching'.
 Details at: <http://www.narst.org/>
- May 25-30, 2009, Conference on the Politicisation of Science, Organised by the European Science Foundation
 Details at: <http://www.esf.org/conferences>
- June 11-14, 2009, Fifth Greek Conference for History, Philosophy & Teaching of the Natural Sciences, University of Cyprus
 Details at: www.ucy.ac.cy/htp2009
- June 18-20, 2009, Second Biennial Conference of the Society for Philosophy of Science in Practice, University of Minnesota.

Information from: Hasok Chang, h.chang@ucl.ac.uk
 June 24-28, 2009. Tenth IHPST Conference, Notre Dame University, Notre Dame, IN
 Details at: ihpst09@nd.edu, and www.nd.edu/~ihpst09
 July 12-16, 2009, Biennial Meeting of the International Society for the History, Philosophy and Social Studies of Biology, Brisbane, Australia
 Details at: www.ishpssb.org
 July 28- August 2, 2009, XXIII International Congress of History of Science and Technology, Budapest.
 Details at: <http://www.conferences.hu/ichs09/>
 August 31-September 4, 2009, ESERA Conference, Istanbul Turkey.
 Details at: <http://www.earli2009.org/>
 September 7-10, 2009, Eighth International Congress on Research in Science Education, Barcelona.
 Details at: <http://ensciencias.uab.es:80/congreso2009/>
 October 21-24, 2009, Second European Philosophy of Science Association Conf., Amsterdam
 Details at: www.epsa09.org
 October 28-30, 2009, First Nordic History, Philosophy and Science Teaching Conference, Helsinki
 Details from Dr Ismo T Koponen, ismo.koponen@helsinki.fi
 June 7-9, 2010, The Genius of Archimedes: 23 Centuries of Influence on Mathematics, Science, and Engineering, Syracuse Italy
 Details at: <http://www.archimedes2010.org/>
 June 24-27, 2010, History of Philosophy of Science Society (HOPOS) Conference, Budapest
 Details at: <http://www.hopos2010.ceu.hu> <http://www.hopos2010.ceu.hu/>

18. IHPST Executive

After twenty years of very productive, but informal existence, the IHPST Group has held its first elections. The following members were elected to the indicated positions on the Council:

President:	Michael Matthews (m.matthews@unsw.edu.au)
Past-president:	William McComas (mccomas@uark.edu)
President Elect:	David Rudge (david.rudge@wmich.edu)
Secretary:	Pierre Boulos (boulos@uwindsor.ca)
Treasurer:	Robert Carson (rcarson@montana.edu)
Directors :	Peter Heering (peter.heering@uni-oldenburg.de) Fanny Seroglou (seroglou@eled.auth.gr)
Student Member:	Roland Schulz (rmschulz@shaw.ca)
Programme Officer:	Don Howard (dhoward1@nd.edu)

Members of the Nominating Committee:

Elisabeth Cavicchi	(ecavicch@mit.edu)
Ismo Koponen	(ismo.koponen@helsinki.fi)
Igal Galili	(igal@vms.huji.ac.il)
Mark Lattery	(lattery@uwosh.edu)

19. IHPST Graduate Students

The IHPST Group is keen to facilitate the research and scholarship of graduate students in the fields of Nature of Science studies, and Historical, Philosophical and Sociological studies and their utilisation in pedagogical and theoretical issues facing science teachers and curriculum writers.

One idea that has emerged out of Council discussion is to create a register of such students that would list their names, contact details, and thesis area or topic. This might be placed on the IHPST web site and progressively up-dated for each student as they progress through their studies. Where completed theses are required to be placed in public domain on the web, such retail would finally be given.

Such a register would enable students to make contact with each other; see who is doing comparable research; perhaps share results of literature searches; perhaps share drafts of work in progress; and perhaps be put in direct contact with more senior IHPST members who could add to local supervisor's comments on the project.

The IHPST Council Student Member, Roland Schulz (rmschulz@shaw.ca), has agreed to oversee this project. Thus beginning graduate students through to nearly-finishing students, are invited in the first instance to email Roland so as to commence this new initiative.

20. IHPST Email List

The email list is used sparingly, perhaps once a month, to send group information such as contained in this Newsletter. It is a closed list, not an open discussion list.

If you receive this email message and wish to remove yourself from the IHPST list, send a message to: majordomo@explode.unsw.edu.au . In the body of the message, not the subject line, simply write: 'unsubscribe ihpst-group'.

Alternatively, if you have friends, colleagues or students who would like to subscribe to the list, tell them to send a message to: majordomo@explode.unsw.edu.au . In the body of the message, not the subject line, simply write: 'subscribe ihpst-group'.

21. Newsletter Items

This IHPST Electronic *Newsletter* goes to 2,000 email addresses on the IHPST list, and it is also posted to various science education, philosophy of education and HPS lists. Items for inclusion in the *Newsletter* are appreciated. These can be items for the 'Opinion', 'Recent Research', 'Recent Books', 'Books' or 'Conferences' sections.

Please email newsletter material as an attachment (or journal subscriptions or publication orders) to the editor: m.matthews@unsw.edu.au