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SCALACS

September 2020

**A Joint Publication of the Southern California and
San Gorgonio Sections of the American Chemical Society**

Southern California Section



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September 16, 2020**

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Southern California and San Gorgonio Sections of the
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Southern California Section

Chair's Message



Dear Southern California American Chemical Society members:

I hope you have managed to enjoy your summer while staying safe and healthy. September is traditionally the beginning of our event calendar for the fall. We are still not planning any in person events, however. We are collaborating with the local section of the AIAA to have zoom meetings occasionally on Saturdays; these will be announced by email and on our website.

We are also having our annual Tolman dinner as a virtual meeting on September 16th. Professor Andy Borovik of the University of California at Irvine is this year's recipient. He will make a short presentation. Look for details elsewhere in this newsletter, or on our website, or via email.

The ACS national meeting that just finished was an all virtual meeting. Our local section councilors participated and voted on issues that came before the council. You can view the Councilor Talking Points on our website at https://scalacs.org/?page_id=44.

National Chemistry Week is coming up in October; look for announcements of virtual activities you can participate in.

Ballots for the election of section officers will be emailed out next month. We are still looking for candidates for Member -at -Large and Councilors. It is a great way to become familiar with section activities and section governance to see if you would be interested in doing more.

Have a safe and healthy fall.

- Brian Brady
Chair, SCALACS 2020

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Southern California Section

Congratulating Our 50/60/70 Year Members

We normally have a luncheon to honor our 50, 60 and 70 year members, but with Covid-19 still an issue, we felt it was ill-advised. We do want to congratulate our long term members though whose contributions to chemistry and the community have spanned many years.

We want to remind our older members that we have a spot on our website for reminiscences by our Senior Members. If you have an anecdote, story or remembrance of your career as a chemist that you would like to share, please send it to Nancy Paradiso in the Section Office at office@scalacs.org.

We congratulate these members on their tenure and thank them for their long-term support of the American Chemical Society:

50 Year Members

G. A. Binninger
Rick L. Carpenter
Carcy L. Chan
Ray W. Exley
Robert H. Green
Robert I. Hallem

Yau Kwan Ho
Joseph Horwitz
Jay A. Labinger
J. Dale Mitchell
Eugene B. Nebeker

60 Year Members

F. Bruce Anderson
Peter C. Fletcher
Harold Goldwhite
Stanley E. Gordon
Subbarao Makineni

Francis S. Markland Jr.
Carl J. Schack
Leonard Spolter
Irwin H. Suffet

70 Year Members

Rudolph A. Marcus
Mary Louise Rothchild
James Bok Wong

Herman Graff
Bernard Schneier
Jack Blecher

Southern California Section



**Virtual Presentation of the
2019 Richard C. Tolman Award
to**

**Professor A. S. Borovik
University of California, Irvine**

September 16, 2020

6:30 pm virtual Social Hour

7:00 pm Presentation of Award and Address

Tolman Address:

**Molecular Complexity and Inorganic Chemistry:
Utilizing Non-Covalent Interactions to
Control Function**

**For Prof. Borovik's biography, abstract, please see the
April issue of SCALACS or our website,**

https://scalacs.org/?page_id=29

**To make a reservation to attend the virtual
presentation, please sign up at**

<http://bit.ly/RSVP-Toman2019>

**You will receive a confirmation email with the
zoom meeting link.**

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Southern California Section



Congratulations to the Southern California Section 2020 Fellow Michael Morgan

We would like to congratulate Michael Morgan, our local section member who was awarded a fellowship at the Virtual ACS National Meeting in August.

Michael is a chemistry teacher at Francisco Bravo Medical Magnet High School, and is honored for his contributions to science/profession and for contributions to the ACS community. Here's the citation:

Contribution to the science/profession: Exemplary and passionate science educator and master teacher with over 30 years of high school chemistry and physics teaching, building character and chemistry careers.

Contribution to the ACS community: Champion and trainer of chemistry teachers, thought leader in chemical education techniques, and inspirational example for future teachers.

Call for Nominations SCALACS 2020 Election

The Nominations, Elections and Awards Committee of the Southern California Section is still soliciting nominations for the election of 2021 Section officers (Chair-Elect and Secretary), Members-at-Large of the Executive Committee, and Councilors. For more information on these positions, see our website:

https://scalacs.org/?page_id=4291.

If you wish to propose names (including your own) for consideration, send them to Nancy Paradiso in the Section Office at office@scalacs.org by **September 15, 2020**. We offer you a great opportunity to network with other chemists and promote chemistry.



This Month in Chemical History

Harold Goldwhite, California State University,
Los Angeles
hgoldwh@calstatela.edu

I recently bought an elegantly illustrated new book by Brian Clegg entitled “Scientifica Historica”. (With a title like that I couldn’t resist). The subtitle gives it away: “How the world’s great science books chart the history of knowledge”. Since imitation is the sincerest form of flattery I intend to devote a number of columns to the world’s great chemistry books. (Clegg’s work, covering all the sciences and mathematics, is a bit thin on chemistry). I don’t have the luxury of abundant illustrations in my all text format, but perhaps I can work a few in if my editor allows. The period I plan to cover, at least initially, is from antiquity through the 19th Century. The title will be taken seriously; only books will be included. There are papers and pamphlets that I may mention in passing, but books are the theme. Of course my choices are idiosyncratic and you may vigorously disagree – or maybe you just won’t care. I’ll try to cover two titles per column, or I’d be at this for years. And perhaps, when I’m done, I’ll assemble the columns with illustrations and see if I can find a publisher.

I start with Plato because his dialog “The Timaeus” was the only Platonic book, in dialog form, known for centuries in early and medieval Europe. The science historian J. R. Partington, calls this dialog “perhaps the first extant treatise on chemistry”. While Plato credits earlier philosophers with various element theories it is in Timaeus that he firmly asserts the existence of four elements: earth, air, fire, and water. It is “out of four things of this kind [that] the body of the universe was created”. I place such emphasis on the four element theory because, with relatively minor variations, it held sway over the minds and works of alchemists and chemists for some 2000 years. Indeed, in another book I will get to much later in this series, in the late 17th Century, Robert Boyle decided it was worth his effort to attack the four element theory in his book “the Skeptical Chymist”.

Plato was apparently not an experimental scientist. He mistrusted, like many later philosophers (Descartes comes to mind), knowledge gained solely from observation and experiment. Knowledge had to fit into a philosophical overarching scheme. Plato devised such a scheme in which 5 “Platonic” solids, the faces of which were regular geometric figures like equilateral triangles or squares, represented the four elements, and the foundation of the universe. An illustration: the tetrahedron, with its four triangular faces and sharp points, represents the penetrating element fire. The triangles or squares that are the basis of an element can unravel and form into another shape. Consequently
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This Month in Chemical History

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the transmutation of one kind of matter into another is quite possible As Partington says “ alchemy in germ goes back to Plato”.

Perhaps my choice of Plato as the author of my first great book of chemistry was not a surprise. But my second choice may be. It is a narrative book-length Latin poem written by Titus Lucretius Carus, hereafter abbreviated to Lucretius (ca. 100 BCE to 55 BCE) who wrote “De Rerum Natura” in about 57 BCE. In this work Lucretius incorporates many ideas that come from the Greek philosopher Epikouros (Epicurus in Latin) who lived about 340 BCE to 270 BCE and who himself drew from the ideas of Demokritos (Democritus) who, alas, did not leave us a book. And neither did Epikouros. So at third hand, via Lucretius, we get our understanding of the atomic theories of these early Greek philosophers. (It is worth noting that Aristotle criticized at length and dismissed the atomic theory of Demokritos on grounds that it included a void – a concept firmly rejected by Aristotle).

So to Lucretius and his mentors. “Nothing is ever begotten out of nothing by divine power” and the workings of the world take place without intervention by the gods. This is a radical idea, foreshadowed by some of the earliest Greek philosophers, and quite opposite to conventional thinking of the period. “Nothing is ever annihilated, but all, things on their dissolution go back into [the elements]. Void exists! The elements are made of “atoms” that are in ceaseless motion. (Lucretius did not use Demokritous’ term; he speaks of seeds and first beginnings). Matter and space are infinite. Atoms differ in size, shape, and weight. There is a limit on the number of their shapes. Sense impressions like color, taste, smell etc. are not properties of atoms but are the effects of numbers of atoms on the percipient. Atoms may collide and become attached and thus, by accretion, things are created. Lucretius’ poem explains at length how many natural phenomena can be explained on the basis of this atomic theory. Because of the widespread acceptance of Aristotle’s ideas on pretty much everything from ethics to logic; from politics to poetry; from physics to biology, and because even his views on the creation of the universe were, in some sense, compatible with Christian doctrine, Aristotle became the major figure in philosophy in the early and medieval Christian church. Hence his views on the void, the constitution of matter, and his rejection of atomism became the orthodox doctrine in Europe until the 17th. Century. (See Robert Boyle mentioned above).

Plato and Lucretius – Greek and Roman – two pillars of the ancient European world. Their speculations laid the basis of both theoretical and experimental alchemy and chemistry for millenia. These are truly great books of the precursors to chemistry.



Insights Into IP Law

Keith Orso*, Irell & Manella LLP
KOrso@irell.com

Before the summer break, this column began addressing a patent law doctrine called the “on-sale bar.” Under the on-sale bar doctrine, a court in the United States may invalidate patent claims covering an invention that was commercially exploited for more than a year before the inventor applied for a patent. The doctrine is designed to encourage inventors to disclose their inventions to the public promptly in patent applications, and to prevent inventors from effectively extending their monopolies by profiting extensively from their inventions in secret and then obtaining government-issued rights to exclude others from practicing their inventions for even longer.

The “on-sale bar” is triggered when an invention that is “ready for patenting” (e.g., as evidenced by proof of drawings or other descriptions that would enable a person of ordinary skill in the field to make the invention) is subject to a commercial offer for sale.

Does an offer to license and supply product constitute a commercial offer to sell? In one case, involving a controlled-release naproxen formulation, the drug company that was developing the formulation wrote a letter to another drug company seeking to establish a partnership to help develop the formulation and bring it to market. The letter set forth licensing fees, clinical trial payments, and pricing that would allow the potential partner to maintain a particular gross margin. The trial court ruled that this had started the clock on the on-sale bar and invalidated a corresponding patent.

The court of appeal reversed the ruling, holding that the letter was simply an offer to enter into a license under a patent for future sale of the invention covered by the patent when and if it was developed and therefore was not an offer to sell the patented invention that could trigger the on-sale bar. The court found that the letter was not offering to sell naproxen tablets, but rather was offering to grant a license under the patent so the recipient could become a partner in clinical testing and eventual marketing of such tablets at some indefinite time in the future. The letter in question lacked any mention of quantities, time of delivery, place of delivery, or product specifications beyond the general statement that the product would be a 500 mg once-daily tablet containing naproxen.

The court noted that disguising a sales price as a licensing fee would not avoid triggering the on-sale bar, but stated that the drug developer in this instance did not engage in such subterfuge.

* The author earned engineering and chemical engineering undergraduate and graduate degrees, and is a patent attorney and partner at the law firm of Irell & Manella LLP. This column does not constitute legal advice and does not necessarily reflect the views of the firm or its clients.

San Gorgonio Section

Chair's Message



This message will be appropriately brief as there is not a lot of new information or scheduled events/activities to discuss. As I am writing this message (mid-August) we are looking forward to participating (virtually of course) in the Fall National American Chemical Society Meeting, which was originally scheduled to be held in San Francisco. As all local sections grapple with how to provide useful activities and information for their members, I am hopeful that some ideas for virtual mechanisms to do this may be forthcoming in our discussions with other sections at the national meeting. We will be considering potential arrangements (e.g. virtual San Gorgonio Section Annual Meeting, usually held in November) at our upcoming board meeting. We welcome any suggestions from the members as well.

It is perhaps worth mentioning that the National American Chemical Society website provides access to a wide range of resources and information, including archived Webinars on a variety of subjects which may be helpful in this time of distance teaching and virtual interactions.

Also, as a reminder you can access the local section information on the websites shown below--a link to the National ACS website is provided therein:

---ACS San Gorgonio Local Section website: <http://www.sgacs.org>

---ACS San Gorgonio Local Section Instagram: <https://www.instagram.com/sangorgonioacs/>

As always I welcome any questions, suggestions or comments from members of the section or other interested parties. My email is: rm.riggins@yahoo.com. Feel free to contact me at any time.

- Ralph Riggins
Chair

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Bi-Section Chemists' Calendar

For more information on these events, please check our website at
www.scalacs.org

September

- 16 SC Virtual Tolman Award Presentation honoring Prof. A. S. Borovik, UCI—see Page 4

October

- 18-24 National Chemistry Week—2020 Theme “Sticking With Chemistry”

To find virtual events, please see our websites:

www.scalacs.org

www.sgacs.org

www.acs.org