

The BELS *Letter*

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Beyond the Periodic Table

By Ann Morcos, ELS

Our perception of reality is that a natural order exists for all things in the universe and that that order reveals a natural flow. The icon of chemistry, the periodic table, was developed as an aid in understanding the elements and their relationships to one another. But does the traditional periodic table reflect our perception of reality?

History of the Periodic Table

Several European scientists in the 1860s began grouping chemical elements according to their function. A. F. Béguyer de Chancourtois, a French geologist, developed a list of elements arranged according to increasing atomic weight. John A. R. Newlands, a British analytical chemist, noted that chemical groups repeated every 8 elements. Dmitrii Mendeleev, a Russian chemist, and Lothar Meyer, a German chemist, independently arranged the elements into 7 columns, each column corresponding to various chemical and physical properties. Their tables were similar; however, Mendeleev's revealed the periodic relationship between chemical groups. Mendeleev arranged the 63 elements known during his time on the basis of atomic mass rather than atomic weight, as others had done. He then grouped the elements into rows and columns on the basis of their physical and chemical properties. It was not known in Mendeleev's time what atoms were made of or why they behaved the way they do. Nevertheless, on basis of the patterns revealed by his arrangement of the elements, he was able to predict the existence and properties of new, yet undiscovered elements.

The periodic table provides valuable information. From the position of an element on the table, the electron configuration can be inferred. Elements in the same column have identical valence electron configurations and therefore behave in a similar way chemically. If you are familiar with how the table is put

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together, you can determine all sorts of information about an element, even if you have never heard of it.

Mendeleev's periodic table has changed over time, as the understanding of chemistry has evolved. Elements have been added as they have been discovered, more accurate values have been developed, references have been modified, column labels have been changed, and the position of some elements has been shifted. Over the years, many shapes have been used for the table, including 3D, spirals, circles, pyramids, and rectangles. However, the periodic tables used today in laboratories everywhere differ little from Mendeleev's table developed almost 130 years ago.

Has the time come for a new periodic table?

Charles William Johnson believes it has, and, in fact, has created one. Johnson specializes in international relations and oriental studies. He lived in Mexico for 20 years, where he studied and obtained degrees in Latin American studies, Oriental studies, sociology and international relations, was a researcher at the Institute of Social Science and taught in the social and political sciences at the School of Political Science in the theoretical fields of sociology and political science at the National Autonomous University of Mexico. Currently, he works as a bilingual interpreter and translator in New Orleans, Louisiana. Since 1992, he has been researching science in ancient artwork. He studied the ancient Maya long-count reckoning system (the manner in which the ancients reckoned time and space in their calendrical and astronomical systems of knowledge) and saw that it could be applied to the traditional periodic table. He saw that numbers within the periodicity of time in the ancient reckoning system were relevant to the numerical progression within the elements and the nature of periodicity within the periodic table itself.

Johnson calls his design the schemata of the elements. Using color-coded images, the design reveals new patterns of symmetry among the elements. New properties and characteristics of the elements can be illustrated that are not evident on the conventional table. When data are placed onto the schemata with their color-coded squares, properties and characteristics of elements become clear. Johnson's proposed schemata allow the visualization of periodicity with a proportional spacing among the elements. Other behavioral aspects of the elements can be visualized and

rendered into images at the atomic and molecular levels. New patterns of symmetry that are not detected on the conventional table become clear with Johnson's color-coded schemata.

So rather than there being only 1 periodic table, there can be scores, each depicting a different characteristic or behavior of the elements. In the book *The Schemata of the Elements*, Johnson presents over 150 different schemata that depict aspects and characteristics of the behavior of the elements.

Many "irregularities" seem to exist in the behavior of the elements and their atoms as shown on the conventional table. However, with the schemata that include the Lanthanide and Actinide Series (generally placed below the conventional table), it becomes clear that these irregularities are actually quite regular. The schemata including these series do not break up the numerical progression of the atomic numbers and electronic configuration of the elements.

Many new patterns and subpatterns of symmetry are being revealed for the first time. For example, the placement of elements 71 and 103 are clarified with the schemata. This is a significant advancement in knowledge; however, it is small when compared with the numerous other relationships the schemata reveal.

"I pondered the 'ancient reckoning systems' and stumbled on the idea for the schemata," said Johnson. "A periodic table of elements that coincides with our perception of reality has been needed for a long time. The symmetries found in the schemata and their visual patterns are reflected in everything we observe every day of our lives."

For more information and to see samples of the schemata, visit:
<http://www.the-periodic-table.com> and
<http://www.theschemata.com>.



A Note from the Prez

By Shirley Peterson, ELS

Jan Jerrells, our Webmaster extraordinaire, is in the process of shepherding the BELS Web site into a new era. We have, at Jan's suggestion, retained Donna Perry of DPDesigns - Internet Services (our Internet service provider) to do all the uploading, downloading, and other necessary technical tasks to keep the Web site content current and working. Jan will remain as Webmaster during the transition, handling all site changes, questions, and the like. Please remember to send any address changes (including e-mail changes) to **Mary Ann Schmidt**, our secretary, who handles the printed directory and sends changes to Jan for the Web site rosters. Members may submit changes using the change-of-information form on the Web site. Use the "CLICK HERE" link at the bottom of the Membership Directory page, Members-Only Area. The submitted form goes directly to Mary Ann for processing. The BELS ListServ program is now under the aegis of **Dawn McCarra Bass**. If you wish to add your e-mail address to, or remove it from, ListServ, please notify Jan, the Webmaster (see directions under FAQ on the Web site; e-mail Webmaster@bels.org), not Dawn. All electronic communications (Web site and ListServ) will remain under the direction of the Webmaster.

BELS is now without a PR person. **Angela Lorio** has bowed out, but has left us a comprehensive master plan for a public relations campaign. Thanks, Angela. Anyone interested in taking over PR is invited (with gusto) to communicate with **Shirley Peterson**, BELS president.

Meanwhile, we appreciate other volunteers who have taken over the important job of notifying non-BELS manuscript editors of certification exams in their areas. **Candace Levy** is working with the Editorial Freelancers Association, Copyediting-L, Freelance, and other groups. **Caroline Simmons** has taken on the task of notifying AMWA members through regional newsletters, and through one chapter's ListServ. Caroline is also working with the *Journal of Young Investigators*. **Diana Mathis** is announcing exams to CSE and STC members, in addition to working with **Rhana Pike** who has set up the March 30 certification exam in Sydney, Australia.

"The Notifiers" are contemplating recruitment through editorial offices of large research institutions. For that effort BELS needs a small, slick, illustrated pamphlet. A member who designs the pamphlet will, of course, receive credit on the pamphlet. Interested? Talk to Shirley.

Nancy Taylor, BELS treasurer, has for-