

# **A Festival of Chemistry Entertainments**

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# A Festival of Chemistry Entertainments

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Sponsored by the  
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# Foreword

The ACS Symposium Series was first published in 1974 to provide a mechanism for publishing symposia quickly in book form. The purpose of the series is to publish timely, comprehensive books developed from the ACS sponsored symposia based on current scientific research. Occasionally, books are developed from symposia sponsored by other organizations when the topic is of keen interest to the chemistry audience.

Before agreeing to publish a book, the proposed table of contents is reviewed for appropriate and comprehensive coverage and for interest to the audience. Some papers may be excluded to better focus the book; others may be added to provide comprehensiveness. When appropriate, overview or introductory chapters are added. Drafts of chapters are peer-reviewed prior to final acceptance or rejection, and manuscripts are prepared in camera-ready format.

As a rule, only original research papers and original review papers are included in the volumes. Verbatim reproductions of previous published papers are not accepted.

**ACS Books Department**

# Preface

This collection seeks to perform an act of magic. Imagine the iconic clip of a muscular man hitting a gong at the beginning of a J. Arthur Rank film to announce to viewers that they are entering a different realm. The sound of the gong signals that you are being transported away from the everyday into the world of movies. Elements of chemical whimsy can have the same effect when you encounter them amidst the serious business of science.

Suppose you're looking up articles on iron carbonyls, and you note with pleasure that one of the articles is written by someone named Steel. While browsing a table of contents, you see an article on FAKE molecular orbitals; that is obviously intriguing. You look into it and find out that FAKE is an acronym for Fast Accurate Kinetic Energy. The first is a case of whimsy by accident; the second is whimsy by design. Between these two is a middle ground, illustrated in a paper by Harry B. Gray and a visiting scientist in his laboratory, Zvi Dori. Those attuned to whimsy will immediately recognize that this is a paper by Dori and Gray (Dorian Gray). That sort of thing is the subject of these chapters. Once you become attuned to looking for whimsy, finding it leaves you with a sense of delight that makes the days chores a little less.

This book is a festival of whimsy. At the sound of the gong, enter the festival, and celebrate.

In Chapter 1, Bill Carroll pays homage to Ken Reese, purveyor of whimsy for us for many years on a weekly basis in the form of 'Newscrips' in *Chemical and Engineering News*. For many of us, the back page of *C&EN* was the front page, as we turned to Ken Reese's column first for items that would inform and entertain us.

Chapter 2 is the story of what whimsy lurks in the records of Chemical Abstracts Service. Most people think of CAS as being a somber, very serious, and most unlikely place to find delightfully and sometimes quite wicked and witty thoughts about matters. As an example, some years ago Chem Abstracts issued a book of drawings as a molecular coloring book. One of the illustrations was adamantane, but an adamantane that had been compressed flat in 2 dimensions, creating an interesting pattern of shapes. Not content to suggest only that people color in the shapes, the book's creators instructed the artist to color the forms in such a way that no two adjacent shapes have the same color. This article contains unexpected facts and records found in the deep data mines of CAS.

On three occasions the physician Howard Shapiro, accompanied by his acoustic guitar, sang his paper at ACS meetings. Chapter 3 presents the lyrics along with explanatory notes for several of Howard's musical renditions. References are provided to YouTube links so you may actually hear the music in addition to reading the lyrics and the stories behind them.

Virginia Orna is a chemist and internationally renowned expert in medieval dyes and pigments; she is also an expert constructor of crossword puzzles. Virginia, who has had puzzles accepted by publications as diverse as CHEMTECH and *The Sunday New York Times*, walks us through the design and completion of chemically based puzzles in Chapter 4. She also answers some of the frequently-asked questions from puzzle-solvers about the art and science of teasing our brains with crosswords.

The world is full of pranks by authors, editors, and even groups of people involved in the production of journals. In Chapter 5, Natalie Foster offers a collection of humorous entries into the chemical literature that include animals as co-authors, jokes that have become part of the folklore of chemistry, and an entire issue of a flagship journal that was devoted to humor.

The American Chemical Society in its machinations is a totally human endeavor that is not immune to humor. Former ACS President Mary L. Good concentrates on politics in Chapter 6, which is more thoughtful than humorous, although her description of Linus Pauling's appearance at the 100<sup>th</sup> Anniversary of the ACS certainly qualifies as whimsical. The goings-on in the ACS over many decades are a thought-provoking description of what we have done in the past and may provide insight about what we may do in the future.

Chapter 7, the final chapter, is pure Jack, as he mops up the topic of whimsy in chemistry with a potpourri of items from his vast library. Much of Jack's accumulated memorabilia was lost in Hurricane Katrina, but the memory lives on in the literature and folklore of our discipline. As Jack sounds the gong at the end of his chapter, you will be returned to the serious but hopefully not somber world. As you read and watch and study in the future, may you continue to hear the sound of the gong and capture the whimsy.

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# Jack Stocker: A One-Man Festival of Chemistry



Chemistry has always boasted an amazing and entertaining set of peripatetic raconteurs who add class, sparkle, and warmth to our national meetings. Derek Davenport, Hubert Alyea, Max Gergel, Howie Peters, Bill Carroll, and Bassam Shakhashiri are but a few members of that cohort. Bowtie-wearing, beret-topped Jack Stocker, however, was chief of this club of colorful characters. In the halls, in the nearby streets, or on the exposition floor of a chemistry meeting, if you saw Jack ambling into view, clad in his green sweater vest, tweed jacket, lapels laden with buttons and badges, you knew you were about to be treated to an entertaining conversation on chemage (more later), fascinating examples of nomenclature, humorous yarns, and even cutting edge chemistry told with an historical bent.

Sometimes Jack would be passing out membership cards for the International Dull Men's Club ("We Celebrate the Unremarkable"); sometimes it would be slightly ribald badges ("Book Lovers Never Go to Bed Alone"), and sometimes paperbacks on the secrets of New Orleans cooking ("First You Make a Roux"). He



traveled with pockets and bags full of props, hand-outs and fascinating paperbacks he'd acquired at book shows with each friend's interests in mind. You always left with more than you came with when you encountered Jack at a meeting. Jack was never dull! You treasured every moment in his presence.

Jack was, in fact, a Renaissance man, a chemist with many interests and many friends among academics, book collectors, historians, Mardi Gras crews, and ACS loyalists. Jack made the cover of *C&EN* (21 November 2005) over the headline "Faces of the Storm" about the tragic aftermath of Hurricane Katrina in the infamous Ninth Ward of New Orleans. Most of book-lover Jack's >20,000 volume collection of fantasy and science fiction books was destroyed when Katrina breached the levees. He was hard at work rebuilding his personal library (heavy with genre fiction) when he passed.

Jack was always generous to a fault and had supplied several of his friends with copies of his files and book holdings. Those friends helped him begin the rebuilding of his flood-destroyed library. Jack called his science trivia collection "chemage," a made-up word linking chemistry and garbage, whose creation he attributed to one of one of his young son's response to the question, "What does your father do?" Jack was charmed by his son's insight and for the many years he traveled on the ACS Tour Speaker circuits he entitled his lecture "Chemage."

From 1958 till his retirement in 1991 Jack taught at the University of New Orleans. During his long teaching and research career (organic electrochemistry) he took sabbaticals at Oak Ridge National Labs and at the University of Lund (Sweden). Among Jack's many entertaining stories were his remembrances of turning a decommissioned air base into a new New Orleans' university and helping it grow from granting associate degrees, to undergraduate and graduate degrees, and ultimately to being a broad-based research institution. He was proud of the University of New Orleans for its achievements in chemistry education but he especially enjoyed serving as advisor to the UNO Student Science Fiction and Fantasy Club. The group became known as Survivors of the Big Bang or SOB2.

Elected to the ACS National Council by the Louisiana Section in 1972, Jack held the New Orleans seat until his death. He served in countless local section, regional, and national committee assignments including Nomenclature, Nominations and Elections, Meetings and Expositions, Economic and Professional Affairs, and the Committee on Science. From his personal experience, Jack wrote a procedures manual on how to run a successful regional ACS meeting. For decades it was the definitive reference for countless Chairs of such meetings. Jack himself served as Chair of the Division of the History of Chemistry in 1990. He was elected to the Council Policy Committee and appointed as the ACS Representative to the Chemical Heritage Foundation (CHF) Council. Jack knew the ACS inside and out.

Jack loved history and he especially loved books. He enjoyed participating in the Bolton Society, a bibliophilic group within CHF before which he frequently spoke and where he displayed rare books on chemistry and science fiction from his pre-Katrina collection. Jack organized and chaired a symposium "Chemistry and Science Fiction" at the April 1992 ACS National Meeting in San Francisco. In his paper for that symposium and in the ACS symposium volume he edited, *Chemistry and Science Fiction*, he discussed many of the best examples from his

collection. At the time of his death he was editing this book on *A Festival of Chemistry Entertainment* derived from a symposium he organized and chaired at the ACS National Meeting in spring 2008 in New Orleans.

*A Festival of Chemistry Entertainment* is more than the fruit of Jack's last and most successful symposium. It's also a memorial presentation by his friends to Jack and to a subject he held dear – the use of humor and whimsy for the entertainment and education of chemists. Enjoy! Or as Jack would have said, *laissez les bon temps rouler!*

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## Chapter 1

# Reese's Pieces: The Best of C&EN Newsprints and K. M. Reese

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Ken Reese was the heart, soul and wit behind Newsprints, the end-page collection of "Not Exactly the News" that has enjoyed over 70 years as a Chemical and Engineering News staple. This paper collects and comments on excerpts from the author's favorite columns from Newsprints and its predecessors.

When I started my career as a chemist, I had a very difficult time reading the literature. I found that most of the JACS and JOC articles I read were unintelligible and put me to sleep. So I developed the habit of reading the experimental section first, because I could at least understand the physical manipulations even if the theory was over my head.

I developed a similar approach to C&E News. I started each issue by reading Newsprints, because I could understand it. Turns out, I wasn't alone. I'll bet the back page was the front page for many other chemists as well.

Being lazy by nature, when I found the 50<sup>th</sup> anniversary article the assignment appeared to be duck soup (Figure 1). And when I found that Ken had already written the history of Newsprints as well (Figure 2), I decided I could stand up here, read these two articles to the audience in about 25 minutes, leave five minutes for questions and get on with the business of enjoying the rest of the day.

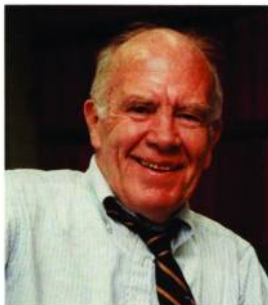
However, Jack told me he had something a bit more original in mind, and since he's my idol I said, "OK. You're a rock star, Jack. You want a research paper, a research paper it's gonna be." And off I went to the C&EN archives.

## Newsletters Marks 50th Anniversary

Kenneth M. Reese,  
Newsletters editor

This month marks the 50th anniversary of the Newsletters column in *Chemical & Engineering News*. The column first appeared in C&EN, as NEWS-Scripts, on July 10, 1943; it was on the back page and has stuck there like glue ever since. The magazine had acquired its name only 18 months earlier. During 1923-41 it had been the News Edition of *Industrial & Engineering Chemistry*, C&EN, like its predecessor, originally was published twice monthly, on the 10th and 20th; it became a weekly with the issue of Jan. 6, 1947.

Material of the Newsletters genre appeared in the News Edition from the beginning, but under different



Reese: editor since mid-1967

tion schedule will be followed" than on the semi-monthly schedule and touched on the extra work thus imposed on the staff. Still, the author wrote, "The satisfaction of serving you, the reader, more promptly and efficiently, will more than repay us for our additional labor."

By 1949, Newsletters was beginning to loosen up from time to time. In the column for March 7 of that year, for example, the reader could learn "that you can't draw air through a tube if your head is more than three feet below the surface of a body of water." This revelation appeared in the Department of Obscure Information, which was originated by the late Will Shearon when he was C&EN's reporter in Houston. Many ACS editors have worked on Newsletters, but the passage of

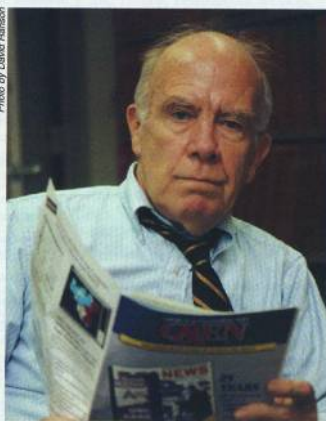
Figure 1. Newsletters 50th Anniversary: July 10, 1993 (1).

### Newsletters

## 'Best of Newsletters' Reflects Changing Times

**Editor's Note:** Newsletters does not go back for a full 75 years. But it is one of the longest running editorial features in *Chemical & Engineering News*. It first appeared in its current form on the last editorial page of the July 10, 1943, issue. It has appeared there in every issue since, without fail.

Partly because some people tend to take an initial browse through a magazine from back to front, Newsletters over the years has maintained a substantial and loyal readership. But a far bigger contributor to the feature's generally high reader acceptance has been the singular, if somewhat irreverent views, of the world in general—and the chemical scene in



"If I use pure Ivory soap  
In this liquid isotope  
Will it lather?"

"Or should I prefer Lifebuoy  
As in the ads they sometimes doey  
Will it lather?" (Nov. 20, 1938)

#### The war years

World War II would erupt less than a year later, and the War Production Board of that period stirred endless comment by its often necessary but sometimes picayune intrusions into people's lives. The board once decreed "that belt loops may be placed on slacks, shorts, and ski pants (except for male children).

"After watching [a] three-year-old in these days of nonelastic elastic in underpants, we are convinced the system of 'a grab and a hitch' is as much a first law of nature as self preservation. He does it like a veteran. We face the edict of no belt loops for male children calmly and unafraid." (July 10, 1944)

Figure 2. "Best of Newsletters," C&EN 75th Anniversary Issue, January 12, 1998 (2).

C&EN is a marvelous magazine. As with similar publications such as the Baseball Encyclopedia and Jokes for the John, you can open any issue of C&EN and find something interesting to read, especially if you pick Newsprints, or those other perennial favorites the Editors Page and its two-week later reflux, the Letters to the Editor pages.

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## NEWS-*Scripts*

The Axis lost plenty when Rommel decided to fraternize with his Italian colleagues on the Continent rather than to remain in his "pleasant" Tunisian surroundings. Back in 1938 French Morocco, Algeria, and Tunisia shipped about 400,000 tons of phosphate to Germany, 900,000 tons to Italy, 750,000 tons to France, and 352,000 tons to Holland. Herr Hitler will find it rather difficult obtaining an ersatz for these quantities.

The Government is expected to take an eight-million-dollar loss under the new ruling on ethyl alcohol whereby producers will sell their entire output to the Government on a cost-plus-fixed profit basis.

The latest Washington "Battle of the Century" between Vice President Wallace and Secretary of Commerce Jones is hardly likely to help our plans for strategic material importations.

When the lights go on again all over the world those South American chemical markets may not be there. In São Paulo, Brazil, there are more than 100 chemical and pharmaceutical items whose production has either begun or has been expanded since January 1941.

The July 25th issue of CHEMICAL AND ENGINEERING NEWS will feature "The Symposium on Malaria" presented at the Detroit A. C. S. Meeting. Another "Action on the American Chemical Front"—don't miss it!

And just about ready for publication is an article entitled "Time and Motion Study for Chemists"—pretty controversial stuff, but quite novel.

B. F. Goodrich in the first five months of '43 paid employees \$16,980 for their ideas and suggestions.

The National Association of Foremen will stage their national convention over a nationwide network. It will be limited to one hour!

Better build up the stockpile of bituminous coal. The fall outlook is far from promising.

A stubborn rust spot that wouldn't wash out of a towel is one reason why some smokeless powder now loaded in cartridges used by American troops retains its terrific hitting power indefinitely. Fred Olsen of Western Cartridge ran out of distilled water and filled a test tube containing nitrocellulose with tap water containing rust. Soon he discovered that impure nitrocellulose treated with rusty water produced a more stable nitrocellulose than he had ever previously made. Then late that night Dr. Olsen realized that rust behaves like a dye and that the instability of nitrocellulose was related to how tightly certain impurities were held by the nitrocellulose. He soon discovered that the most satisfactory results were obtained by dyes belonging to the chemical group of amines. Finally, diphenylamine was tested with perfect results. Good thing Dr. Olsen was not an eight-hour work-day addict.

The muddle over corn supplies is a situation with many angles. Producers of butyl alcohol (highly important to the war effort) must use wheat which complicates the picture.

WPB urges our aluminum and magnesium producers to eliminate holidays for the rest of the year if they are behind production schedules. This is a big if and uncertain in its meaning, for it was only a few months ago that magnesium production was cut because we were turning out too much.

Rationing of soap will be unnecessary because of increased shipments of fats into this country. At one time the OPA had rationing machinery all set to function, but the improved shipping conditions have made this unnecessary. The salvage program has been successful in bringing in about 6% of our total production of tallow and grease.

The threatened wartime dearth of engineering students may be averted with the Army's rovent action in agreeing to turn back to industry about 10% of the students now training. This will amount to about 13,000 students and most of them will be engineers. The men will not be released until completion of the courses sponsored by the Army.

The 2nd quarterly statement of Union Carbide and Carbon Corp. contains several interesting statements. Sales have increased over 1939 some 180%, but in the same period taxes have gone up 1,330%. The actual figures are, 1939: sales 170 million, taxes 7 million; 1943 rate: sales, 500 million; taxes, 100 million.

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Figure 3. First Newsprints column, July 10, 1943.

Shown in Figure 3 is the first Newsprints column from July of 1943, although there were other columns of not-strictly-the-chemical-news that appeared almost from the beginning of C&EN's predecessor, the News Edition of I&E C.

March 29, 1929 marked the debut of "Our Poets Corner." A second column, "Emanations" appeared in September of 1930. Eventually, Emanations absorbed Our Poets Corner and continued even after the debut of Newsprints. Later, the not-strictly-the-chemical news columns were consolidated under Newsprints.

In this particular location of the magazine, Newsprints superseded a wildly interesting feature called "Miscellaneous," which was basically the 1930's-40's chemistry enterprise Craigslist. Newsprints was, at least, a literary step up.

Here's an excerpt from the first Newsprints column (3):

*The July 25<sup>th</sup> issue of Chemical and Engineering News will feature 'The Symposium on Malaria' featured at the recent Detroit A. C. S. meeting. Another "Action on the US Chemical Front"--don't miss it. And just about ready for publication is an article entitled 'Time and Motion Study for Chemists'—pretty controversial stuff, but quite novel.*

Not exactly edge of your seat exciting, but it was during the war. It got better.

Incidentally, those were the days of ads on the C&EN cover. Say what? We have ads plastered to the cover today? Good heavens.

Now, while this chapter is about Ken and Newsprints, it's always fun to look through old magazines. Consider the impact of this ad from 1943 (4) (Figure 4): What do I know about tetrahydrofurfuryl alcohol?

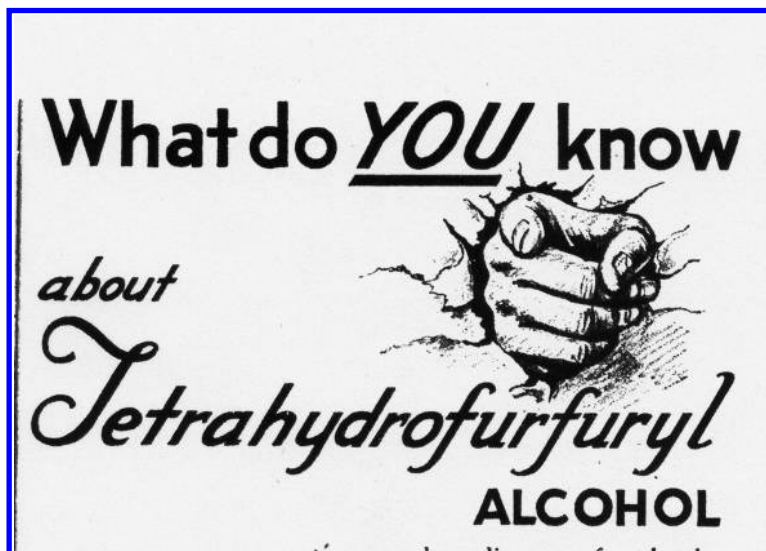


Figure 4. A provocative ad, 1943.

Not much, but it seems that it's derived from the parts of oats that aren't tasty with sugar, cinnamon and raisins (Figure 5).



Figure 5. The source of tetrahydrofurfuryl alcohol.

What about the applications (Figure 6)? Today, polyvinyl butyral is the resin between two layers of glass that makes windshields safer because when they break they tend not to shatter. If you're otherwise in the oatmeal business you must be in a great position to make tetrahydrofural alcohol, having a corner on oat hulls.

<p><i>The Furans</i></p> <p>FURFURAL</p> <p>FURFURYL ALCOHOL</p> <p>TETRAHYDROFURFURYL ALCOHOL</p> <p>HYDROFURAMIDE</p> <p><i>Write for this Free Booklet</i></p>	<p>ticizer in the manufacture and use of polyvinyl butyral coated fabrics. You should have first hand knowledge of this chemical which has the following typical properties:</p> <p>Specific gravity (25/25).....1.052          Boiling range (99%).....170-180°          Flash point.....75-80°C.          Refractive index (25/D).....1.4502          Color.....Virtually water white</p> <p>If you have need for a solvent as capable as Tetrahydrofurfuryl Alcohol, let us know. Inquiries regarding specific applications are welcome.</p>
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Figure 6. Physical properties and derivatives of tetrahydrofurfuryl alcohol.