

Fumigants & Pheromones

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Routing:



A Newsletter for the Insect Control & Pest Management Industry

A Cockroach's Life—Told by Himself

By Edward Simpson
(London, ca. 1850)



"I am six times stronger than a horse."

"I am perfectly aware of the unfavorable opinion which you all have concerning me, and I am afraid there is not one among you who will be willing to say a good word in my favor, or to look upon me with the smallest affection."

"I am not a true born Briton," but am one of Her Majesty's naturalized subjects. India is my native country, but it is very probable that my ancestors were brought here from the Levant (Eastern Mediterranean region). This was between 300 and 400 years ago. One old historian, in 1634, speaks of us as having been found in wine cellars and flour mills, so that we must then have been here some time."

"You will thus understand that although we are now universally met with all over England, both in

town and country, our distribution has been brought about entirely by human means. The laundress has been of very great assistance to us, whilst railway companies have carried us to all parts of the country free of expense, and with very little inconvenience to ourselves."

"The first thing I have to speak about is the egg from which I came. Sixteen eggs, containing my brothers and sisters, were laid by my mother in a large horny capsule of very remarkable construction. The scientific name of the capsule in ootheca, which means "egg-purse," and was carried by our mother at the end of her body. Some have compared it to that peculiar kind of tart known as a 'turnover.' When all the sixteen eggs were carefully arranged in this capsule, it was nearly half an inch long. The construction of the purse and the laying of the eggs occupied about a week. My mother carried this egg case about with her for seven or eight days, and then she dropped it into a warm sheltered crevice, and troubled herself no more about it."

"When first hatched we were quite white, with black eyes, but we soon became darker, and very much resembled our parents, and could run about and look after our food. Almost immediately after our

escape from the egg case we changed our skin; again, four weeks later; and a third time, at the end of our second, third and fourth years—that is, six times during the four years. Now, unlike the beetle, we do not, when full grown, leave off eating, and become quiet and motionless as pupae. We have no resting-stage at all."

"My wings gradually developed and grew more and more conspicuous, until at my seventh molting, i.e. just as I was five years old, I became as you see me. You will at once notice that I differ in appearance from my sisters in several respects. In the first place, as I have already said, they have no wings. These are large in my case, and underneath them are my wings, folded lengthwise. My antennae are rather longer than my body, whilst those of my sisters are shorter; and thirdly, should you see me standing by the side of

(continued on page 2)

IN THIS ISSUE:

- ✧ *Quotable Quote*
- ✧ *Mueller in Georgia*
- ✧ *Methyl Bromide Cuts in 2006*
- ✧ *Future of Pest Management*
- ✧ *Methyl Bromide Label Re-registration*
- ✧ *Fruit Fly Trap*
- ✧ *Regulators Visit FSS*
- ✧ *Fumigation Workshop*

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A Cockroach's Life

(continued from page 1)



one of my sisters you will notice that I stand rather higher on my legs. We are extremely active, and run with great rapidity—we hardly ever walk.”

“It is well for us that we can thus run, as it enables us to escape from our enemies. My strength also is very great, and it has been calculated that in proportion to my size I am six times stronger than a horse.”

“Our habits are strictly nocturnal. In the day-time we are never to be seen—that is to say, voluntarily! We frequent the kitchen more particularly for two reasons: one being our great fondness for warmth, and the other, that it is here we find abundance of food. Nothing comes amiss to us; our diet is much the same as yours, though our tastes are more varied. Our digestion is very good—when I said just not that nothing came amiss to us, I perhaps ought to have excepted cucumber, which sadly disagrees with us!”

“Our family is very large; I believe that I have at least 800 distinct relations in various parts of the world. We are also very ancient, but it is quite impossible for me to tell you how many generations have preceded me. All I can tell

you is that we were in existence, and formed half the number of insects living at the time when the primeval forests, which now supply you with coal, were flourishing in all their wondrous splendour and luxuriance. So abundant were my ancestors at the time, that the period of which I am

speaking has been called the “age of cockroaches”; but we existed long before that, and indications of us are said to have been actually met with in the state of the Silurian age.”

Here he paused, and before we had time to thank him for the information he had given us, *Periplaneta* was rushing away with a speed somewhat approaching that of an express train!

Note: *Insects Limited* maintains a library with old entomology books. Many are over a hundred and fifty years old including the first study of insects: ***Histoire Naturelle et des Insectes*** (14 vol.) by Latreille in 1801 along with Kirby and Spencer’s, ***ENTOMOLOGY*** (vol. 1-4) 1816; ***Fabre’s Souvenirs Entomologiques*** (vol. 1-14) 1879-1910; ***Jardine’s The Naturalist’s Library, Entomology*** (vol. 1 & 2); and ***Thomas Says’ American Entomologist*** (vol. 1 & 2), 1824. There are over one hundred rare books in *Insects Limited’s* entomology library: “We can’t know the future until we understand the past.”

Quotable Quote

“I want to conclude my testimony today by once again noting that the global effort to protect the ozone layer has seen spectacular successes. Protection of the ozone layer requires all countries to maintain their resolve and complete the phase out consistent with their treaty obligations...”

Jeffery M. Burnam,
Deputy Assistant Secretary for
Environment, Bureau of Oceans and
International and Scientific Affairs,
June 3, 2003, Congressional testimony

Response:

“I hope this includes the draw down of more than 10,000 tons of methyl bromide in stockpiles here the United States to be used up before more production and critical uses are permitted in accordance to the Montreal Protocol.”

David Donniger,
National Resources Defense Council,
Congressional Testimony,
July 20, 2004, Washington, DC



Over 50 methyl bromide railcars were discovered by EIA in Florida—each with a storage capacity of over 250,000 pounds (114 metric tons). For photos and more on this story go to: usinfo@eia-international.org

Editor’s note: I want to thank Mr. Albert S. Marulli, ATS, for bringing the above to our attention.

Mueller in Georgia



David Mueller, president of Insects Limited, Inc., of Westfield, IN recently visited the Republic of Georgia as a consultant for UNIDO of Vienna.

Georgia is a country in the former Soviet Union that is nestled between Russia and Turkey. It is about the size of Indiana and has a population of 5,000,000—mostly Christian people. Under the Soviet Union, it was a developed country but since the collapse of communism in this region, the economy in Georgia is developing. Under the Montreal Protocol, countries like Georgia are eligible for funding for projects to phase out ozone depleting substances like methyl bromide (MB), halons, and refrigerants (CFC's).

Mueller was asked to visit Georgia in July to assess its current use of MB and recommend a phase out program to eliminate post-harvest uses of MB.

Mueller is working with Georgia's flour mills and several grain storages where MB is presently used. Funding for this phaseout project will be determined in December by the Multilateral Fund under the Montreal Protocol.

Mueller said: "After the collapse of the Soviet Union in 1989, countries like Georgia had very little; no electricity, barely any food, bad roads and infrastructure, no jobs, but they did have a strong will to improve their quality of life. They are honest Christian people that love their country and they especially like America. The recent visit to Georgia by George W. Bush only accelerated that relationship."

During the former Soviet times, MB was used prima-

rily to control pests each year in the grain storage and gigantic flour mills built by the Russians in the 1970's to help feed Russians their bread. Georgians eat a lot of bread each day; it is their staple like rice is to Asia. A demonstration project to show how phosphine can be used to replace most uses of MB in Georgia grain and mills will lead to early phase out of MB in this developing country.

Since 1996, this is the twelfth mission that David Mueller has been asked to go on by the United Nations. Others include Vietnam (2), Ivory Coast, Philippines, Thailand (2), Mexico, Mauritius, Jamaica, Poland, Zimbabwe, and Georgia. Besides these countries Mueller has traveled to over 50 countries to attend meetings and give formal training to post-harvest pest managers on six continents.

Mueller stated: "I find it very rewarding to know that over 50 developing countries have phased out of methyl bromide in recent years. The Montreal Protocol is working and the ozone layer is showing positive results. There is more to do, in comparison, Georgia uses about 16 metric tones of MB and the United States has exemption for 2005 of 9,600 metric tones and stockpiles of approximately 15,000 metric tones. When countries like the United States make a serious commitment to reducing their consumption of MB, the developing and developed countries will both benefit even more from the phaseout of this serious ozone depleting substance."

Mueller has been asked by UNIDO to travel to Cuba in mid-September to review a post-harvest methyl bromide phaseout project on grain bins and flour mills by UNIDO (United Nations Industrial Development Organization).



This gigantic Russian built flour mill and grain elevator helps supply the 5 million people of Georgia with bread each day.

G L O B A L

Methyl Bromide Cuts in 2006

Montreal, 1 July 2005—The 189 member governments of the Montreal Protocol on Substances That Deplete the Ozone Layer have finalized an agreement under which developed countries will reduce their use of Methyl bromide in 2006 compared to 2005.

Executive Director Klaus Toepfer of the United Nations Environment Programme, stated: "The importance of today's decision is that it maintains the downward trend in Methyl Bromide use by developed countries." He went on to say, "This should send a positive signal to farmers and other users of Methyl Bromide that alternatives are increasingly available and should be adopted as quickly as possible. It should also encour-

age developing countries to stay on track with their own efforts to phase-out this harmful substance."

As a result of today's meeting, developing countries will receive exemptions totaling 13,014 metric tons for 2006. This compares with a total of 16,050 tons of exemptions received for 2005, representing close to a 20% decline in approved critical use exemption.

The U.S. has made strides to reduce its exemptions for 2006 by 20%. This represents a commitment of almost 50% reduction in exemptions now that methyl bromide alternatives are available for soil and post-harvest applications.

The biggest controversy at the meeting in Montreal was over stockpiles found in Florida by the Environmental Investigation Agency (EIA). They showed videos during the meeting documenting over 50 methyl bromide railcars—each with a storage capacity of over 250,000 (114 metric tons)—in addition to hundreds of Methyl bromide storage tanks on the outskirts of a city in Florida.

The Montreal Protocol requires a drawdown of existing stockpiles before new production is allowed. This could greatly affect the negotiations for further exemptions when the US makes requests for 2007 exemptions.

**Fumigation Needs**

Fumigation Service & Supply, Inc. offers fumigation service to grain, seed, flour mills, and food processing facilities. They fumigate over 100 structures each year. Each fumigator goes through extensive training and continued education to maintain his license and expertise. Their safety record is the standard in the industry.

Any new fumigant that comes to North America is likely to be

tested first by John Mueller and his crews. They were instrumental in testing, developing, and registering Cytec's cylinderized phosphine ECO₂FUME® and Dow AgroSciences'

ProFume™ (sulfuryl fluoride). This summer they have been asked to examine several new technologies that could result in future methyl bromide alternatives. They are partnering with Purdue University on two projects to evaluate sulfuryl fluoride in flour mills and the use of insect DNA mapping to evaluate customer complaints.

Besides offering commercial

fumigation service FSS sells fumigants and products to licensed and trained applicators. Their product catalog has over 150 items commonly used in fumigations from sealing tape to monitoring equipment, gas masks to bioassays. FSS maintains, on its website, a catalog of hard to find fumigation items (www.fumigationzone.com).

Training is something that FSS does best and often. From ten person regional skill building workshops to 300 person international conferences and workshops dot the calendar each year. Whether you need continuing education credits for your fumigation license or just want to hear about a new developing fumigation technology like ProFume or ECO₂FUME, FSS can fill your needs. Call 1-800-992-1991 if we can help you protect your stored products.

The Future of Pest Management



Dustin Cortlett

The Chicago branch of Fumigation Service & Supply, Inc is proud to announce that it has been developing a new method of inspection for food plants since January 2004. In conjunction with In Quiz It Software, FSS is using new technology to service food plants. This revolutionary method consists of a software program, designed to record and organize data to create a living history of the plant. Hand held PC's are used in union with the software to record notes during a plant inspection. The data is compiled by using the Hand held PC or Pocket PC to scan bar-codes that have been placed in every room and on every device imputing whether or not evidence or activity was found at that location. The program is capable of recording information ranging from pest control to sanitation and maintenance issues. It will also record when a pesticide or chemical is applied, automatically plugging in EPA registration numbers and the location at which it was used. The findings are then downloaded to a computer on site so that clients have full access to the tools and information the program has to offer. The accumulation of this information results in a wealth of data that is used to create trending for the plant. This would enable Quality Assurance managers to pull up the history of specific locations in their facility. Seeing reoccurring issues and what has been done in the past will aid in the knowledge and decision making abilities of those in the plant. This innovative way of inspection is, for the first time, leaving the information at the fingertips of our clients. With this

new technology our customers now have the power to retrieve the history of any given area and at the click of a button can then print accurate graphs to illustrate the data. This ground-breaking scanning system allows a plant to project what

kind of activity will be expected in the future with greater accuracy than ever before, resulting in a greater emphasis on prevention rather than control. For this reason, food plants that use this new system will have an advantage over others in the way their information is processed and used. FSS has been using this innovative method for over a year now with exemplary results. We will continue doing our part in advancing the practice of food protection,



setting the bar higher for what can be expected and achieved.

John Mueller stated: "This program differentiates from other scanning software in that we use a double bar-code system which helps insure proper program execution. This software does not just time stamp but actually consolidates a large amount of information and helps manage a more effective program."

Methyl Bromide Label Re-Registration

All pesticides are required by Congress to be reviewed every fifteen years by the EPA. Like phosphine, this MB label review will make major changes in the use of this structural and soil fumigant. It's anticipated that many of the same risk mitigation measures that were required of the phosphine coalition to defend will be issued for MB during this review. The final phosphine label review process took five years, \$5 million dollars, and numerous visits to Washington D.C. by dozens of stakeholders to finally resolve the present federal phosphine label. The progress of this review process will be covered in future *Fumigants & Pheromones* newsletters.



Methyl Bromide will go under label review this year by the U.S. EPA.

ProFume™ Fumigant

The U.S. EPA approved a new and expanded label for the methyl bromide alternative sulfuryl fluoride products called ProFume™. Dow AgroSciences announced that this new label will fill in some missing details about the use of this new flour mill and food processing facility structural fumigant. Any time a new label is approved, there are gray areas and questions about detailed uses that need to be addressed. Dow AgroSciences Regulator Affairs staff have worked hard since the initial federal label approval in January 2004 to collect those questions and submit improved language that will help the fumigator and the food industry understand where and when this sulfuryl fluoride can be used.

There have been over 100 total applications of ProFume performed since January 2004 with Fumigation Service & Supply, Inc. conducting over 50 of those. John Mueller, President of FSS remarked: "Even though ProFume comes in a cylinder, it is a completely different fumigant that Methyl Bromide. It has a different mode of action, special needs for scaling, and more extensive stewardship. The performance of ProFume has been excellent and we have not used Methyl Bromide



Purdue University graduate student Wat from Thailand, spent over nine months preparing for this sulfuryl fluoride mill fumigation. The 1000's of gas readings taken on this fumigation will help produce a model of how this methyl bromide alternative fumigant respond under real conditions in flour mills. Dr. Dirk Maier and this multidisciplinary team from Purdue received a three year grant from the USDA to conduct this study.

this year. We are fumigating about one mill per week this summer with ProFume and 3-4 on busy holiday weekends. One flour mill in Indiana has been fumigated 7 times with ProFume over the past four years. The key to success with this new fumigant is in the FumiGuide. This computer software has made a huge difference in how we do our fumigations today. The precision that it offers allowed for the right amount of gas to be used under the alternative to methyl bromide for our company and our customers."

See on-site fumigation pictures with ProFume on our website: www.fumigationzone.com

Museum Poster Available

This new insect identification poster is now available from Insects Limited. These common fabric and wood insects are found in museums, historical houses, and homes. The colorful pictures show 16 insects in their native surroundings. To get your Common Insect Pests of North America poster contact Pat Kelley at 1-800-992-1919, insectsltd@aol.com, or order on line at www.insectslimited.com.



Fruit Fly Trap



This is the time of year when fruit flies (*Drosophila spp.*) invade your home and commercial buildings.

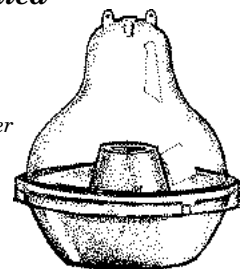
As we bring home seasonal fruits and vegetables we make an easy living for this persistent small fruit fly that lives on organic matter. The popularity of recycling has increased fruit fly infestations as receptacles of recycled soft drink cans often are not emptied or rinsed. History lesson: The label on the top of a ketchup bottle was placed there originally by the manufacturers to cover up the fruit flies that are endemic to the tomato ketchup industry.

Fruit Fly Solution:



"I have used this reusable fruit fly trap for five years in my kitchen and I have eradicated my fruit fly problem each year."

—Dave Mueller



Kit contents:

One yellow dome trap with one bottle Tanaco attractant.

IL-1590-01 \$18.50/ kit

Order the Fruit Fly Trap and many other non-toxic insect traps by calling 1-800-992-1991 or online at www.insectslimited.com

Regulators Visit FSS

Inviting the people that regulate your industry to come for a visit turned into an educational afternoon for everyone. Each summer the state pesticide and federal regulators meet to discuss common interest and changes in the law. This summer this group came to Indianapolis and visited Dow AgroSciences in the morning and FSS in the afternoon. During this visit they learned about the new Methyl Bromide alternatives and changes in phosphine labeling from John Mueller in a classroom setting. There was much discussed about the upcoming Methyl Bromide label reregistration.

The two areas demonstrated in a workshop setting was disposal of fumigants and improved gas monitoring techniques. The many changes in the fumigation field made for interesting discussions and questions during the workshop.

Bonnie Poli, USDA, Chief,



Bonnie Poli, Chief, Pesticide Records Branch, USDA, Washington, DC presents John Mueller and Dave Mueller with a USDA hat during the tour of their facilities by 45 state and federal pesticide regulators.

stated: "I would like to thank you and your brother John for taking time to show our group the exciting advances in the fumigation and insect control industries. The tour of your facilities was very informative and the demonstration

sections were both interesting and educational. I heard only good comments regarding your tour and many participants were very enlightened on the advances in fumigation technology."



Brian Wendell demonstrates disposal of spent phosphine fumigants to pesticide regulators.



Nathan Stocker explains the new methyl bromide replacement ProFume™ fumigant to representatives of 40 state lead agencies for pesticide regulation.

Fumigation Workshop



Fumigators from six states gathered in Western Kentucky to learn about changes in the field of post-harvest fumigation.

A continuing education fumigation workshop was held on July 22, 2005 at Kentucky Dam Village in Western, Kentucky. This program was in conjunction with the annual Kentucky Feed and Grain Association summer meeting. This meeting was organized by Insects Limited and Fumigation Service & Supply, Inc. of Indianapolis.

Fumigators attended from the grain, flour milling, feed milling, seed, pest control, rice, and processed food industries. Over 50 people attended this continued education meeting from six states. This is the eighth regional fumigation workshop presented by Insects Limited in 2005. Over 400 fumigators have attended these educational programs and workshops offered by Insects Limited so far this year. It is estimated that there are about 500 post-harvest fumigators in North America.

There is a licensing and continued education and insurance requirement for fumigators to maintain their fumigation license. Two certification exams must be passed before a person can receive his/her fumigation license. To maintain their licenses, they must regularly attend qualified continued education programs like this one in Western Kentucky.

Bremen 2007



8th Fumigants & Pheromones Conference

February 6-8, 2007
Bremen, Germany



Fumigants & Pheromones is published by Fumigation Service & Supply, Inc. and Insects Limited, Inc. We hope that the information that you receive from this newsletter will help you in your business, and you, in turn, will support our business efforts. If you have an associate who would be interested in receiving this newsletter, please contact the address below. We would welcome any comments or suggestions for topics. Address correspondence to: David K. Mueller, Fumigation Service & Supply, Inc., 16950 Westfield Park Rd., Westfield, IN 46074 USA.



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Fumigation Service & Supply, Inc.

16950 Westfield Park Road
Westfield, IN 46074-9374 USA
(1) 317-896-9300
e-mail: insectsltd@aol.com
websites: www.insectslimited.com
www.fumigationzone.com

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