

# LEAD Action NEWS

LEAD Action News is the journal of the Lead Education and Abatement Design (LEAD) Group.  
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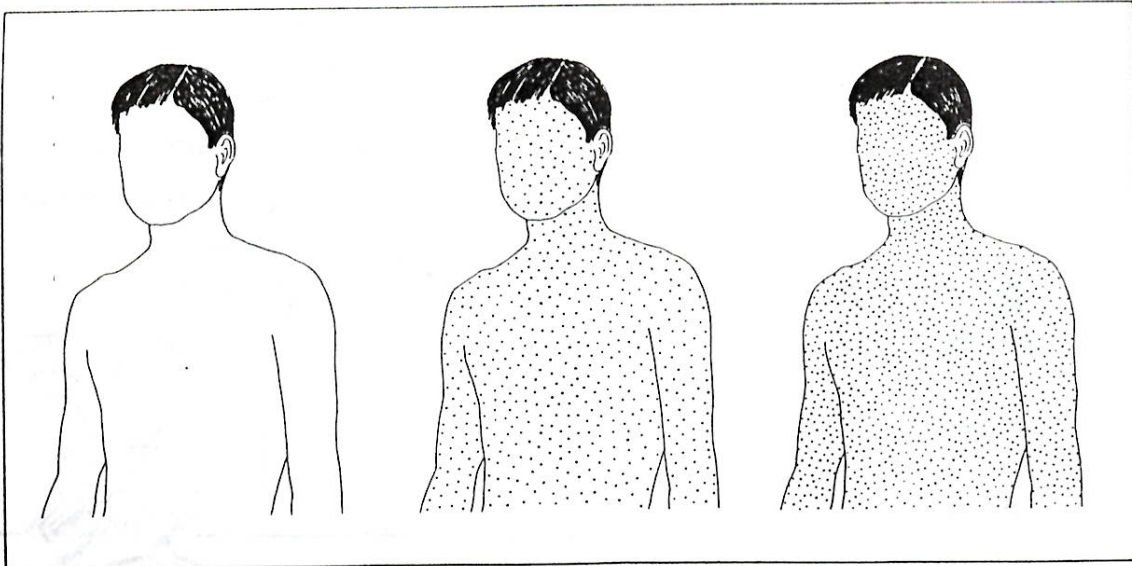
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## Editorial

Fancy having less than 40µg of lead as your total body burden? (See figure). Sorry, you were born in the wrong century! But if The LEAD Group achieves its aims then every child born next century will be far less contaminated with lead than the middle figure below. As will the ducks and dogs, flora and microbes, in short, all living things. Please subscribe or re-subscribe to LEAD Action News as your contribution to a lead-risk-reduced ecologically-sustainable future.

We also welcome your input and views, comments and corrections on articles. After some enquiries from callers and some verbally reported success with the homoeopathic remedy for lead poisoning, the taking of lead, I'd be very interested in more information. If you know of any cases, please send a written record including blood lead levels before and after homoeopathic treatment. The theme for our next issue is Lead and Women, Women and the Environment. ●



Body burdens of lead in ancient people uncontaminated by industrial lead (left); typical Americans (middle); people with overt clinical lead poisoning (right). Each dot represents 40µg of lead. [Reference: "Measuring Lead Exposure in Infants, Children and Other Sensitive Populations". publ. National Academy of Sciences, Feb 1993. Source: Patterson et al., 1991; adapted from NRC, 1980.]

# Acknowledgements and Thanks

## Helpers

**Input:** Thanks to Karen Florini of Environmental Defence Fund (U.S.), Theresa Gordon of NO-LEAD and Andrew Katelaris and Michael Glass of The LEAD Group for sending in contributions.

**Cartoons and Graphics:** Thanks for made-to-order ones from Augustina Jones, and Eric Evans. Thanks again for the kind permission to reprint from Cathy Wilcox and Simon Kneebone. Please contact The Editor for permission to reprint graphics.

**Desktop Publishing:** Typing, layout, laser printing and proofing kindly provided as a free service by Desktop Workshop. Extra typing by Nana and Cathy.

**Childcare and Enabling:** Thanks again to Greg.

**Photocopying and Distribution:** Steve Shamoos, David Ratcliffe and Mangala Vadivale.



A **BIG CHEER** - for 1993 members who resubscribe or attend the AGM.

And **THREE CHEERS** if you invite someone else to subscribe.



All LEAD Group members are invited to the Annual General Meeting on the first Wednesday in February at 8.00 pm

# AGM

February 2, 1994.  
4 Rothwell Avenue  
Concord West

RSVP  
by Monday January 31, 1994.  
Phone: (02) 550-0095

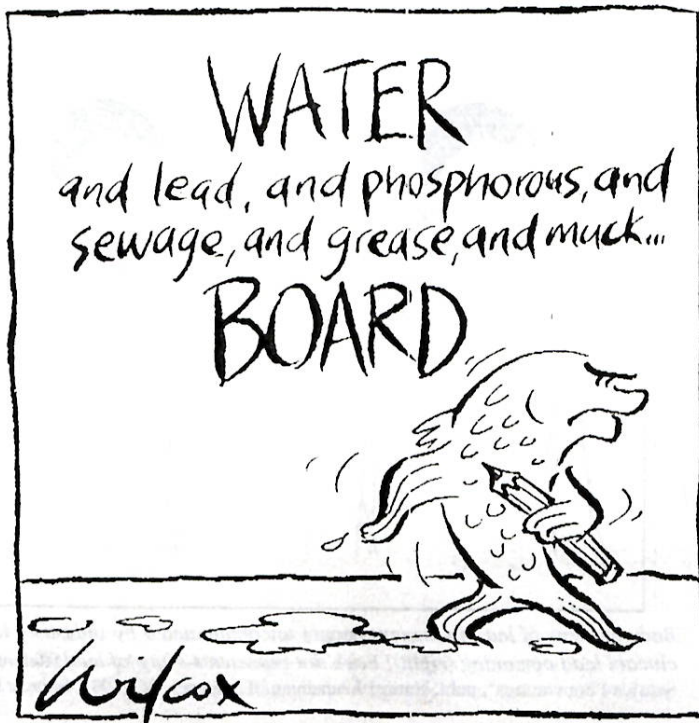
## Grant Awarded

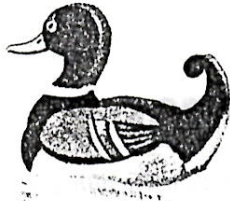
The LEAD Group Inc. is pleased to announce that we have been awarded our first government grant - one of the Grants for Voluntary Conservation Organisations (GVCO). The \$10,000 grant can be used for administration costs in 1994.



**THANK YOU to The Federal Department of Environment, Sport and Territories (DEST).**

Thanks also to Glyn Mather and Herbert Beauchamp of Total Environment Centre; Ros Kelly, Federal Environment Minister; Jim Norman of DEST; Paul Wright, Kerry O'Donnell, Chloë Mason and Fred Salome of The LEAD Group and Anne Reeves for their helpful advice in making the grant application. Thanks to Noela Whitton for offering to raise funds. ♣





## Duck Shot



The following section on environmental exposures is part of the Australian input into an OECD document on lead. It shows the need for action on lead shot, especially in NSW, Queensland and Tasmania.

### Environmental Exposures

Sources of ecosystems or non-human exposure to lead include leaded petrol, battery breaking plants, lead smelters, lead shot, and lead fishing weights. These have impacted on water, air and soil quality and, in turn, have impacted on aquatic and terrestrial (including avian) life.

Lead toxicosis, following ingestion of lead shot, has long been recognised as a significant cause of mortality in waterfowl. As in other countries, Australia has needed to deal with problems caused in certain areas through the use of lead shot in hunting. For example, following ingestion of lead shot, lead toxicosis has been observed in Magpie geese, Black swans, several species of duck (including Black duck and Musk duck) and Hardhead. The level of ingestion of lead shot and the concentration of lead in the tissue of several species of waterfowl has been shown to be above criteria used in other countries at which action is taken.

To date, there has been no national approach to reducing risks of lead exposure to the non-human environment. As is generally the case with chemicals management in Australia, action is initiated at the State level.

Two States do not allow waterfowl hunting and two States have partial bans on the use of lead shot for

waterfowl hunting. Monitoring in three of the four States indicates that the level of ingestion of lead shot is equal to or greater than the levels set in the US at which management action is taken. In the remaining State, monitoring has indicated that there are no known incidents at this stage (refer to the following table for details).

The rationale for these actions is primarily:

- domestic scientific studies that have demonstrated elevated concentrations of lead in waterfowl tissues;
- domestic and overseas studies that demonstrate the consequences of elevated concentrations of lead in waterfowl tissues;
- similar actions undertaken in overseas countries have proven to be effective in reducing the risk; and
- public pressure from conservation groups in some States.

The rationale behind the total bans on all waterfowl hunting is based on animal welfare and conservation arguments and the type of shot is secondary. At some hunting grounds, steel shot is obligatory and consideration is being given elsewhere to voluntary use of steel and other non toxic shot.

[Reference: *Risk Reduction Monograph No.1: Lead Background And National Experience With Reducing Risk*, Environment Directorate, Organisation For Economic Co-Operation And Development (OECD), Paris 1993 pp143-144]

STATE/TERRITORY	ACTION UNDERTAKEN
South Australia	Partial ban current, total ban possible by 1994.
Northern Territory	Use of lead shot is banned in two of its four hunting reserves and a complete ban on use of lead shot for water fowl is proposed from 1996
Western Australia	Hunting of all waterfowl banned as of 1991.
Australian Capital Territory	Hunting of native wildlife banned.
Victoria	Following consultations, proposal is to ban lead shot at some public wetlands from 1993, ban lead shot for waterfowl from 1995 onwards throughout the State and undertake hunter education and community education programmes to reduce impact.
Remaining States	Situation being monitored.

## Lead in the Wild

- *In the US up to three million waterfowl die each year from lead poisoning.*
- *The US Department of the Interior reports that for every bird that hunters manage to kill, 250 grams of lead pellets from shotguns ends up in the environment.*
- *Biologists sampling the top few centimeters of the bottom of wetlands, ponds, and lakes have found in some areas about 250,000 lead pellets per hectare! Lost lead fishing weights also litter the bottom.*
- *After the hunting season is over, ducks and other waterfowl in search of food swallow these pellets. Three to ten days later, poison reaches the bloodstream and is carried to major organs - the heart, the liver, and the kidneys. By days 17 to 21, the bird falls into a coma and dies.*
- *Bald eagles can get lead poisoning from swallowing the lead shot that lurks in the bodies of the waterfowls they eat.*

[Points extracted from an excellent article entitled "Lead Poisoning: Are you and Your Children at Risk?" in *Awake!* November 22, 1992. Printed by Watchtower Bible and Tract Society of Australia, Box 280, Ingleburn NSW 2565. Reprinted with permission.]

## Sludge Snags

Can you believe that a Japanese research team have developed a way of creating sausages out of sewage sludge? One hopes they also recycle the heavy metals they must surely remove from the sludge.

In an effort to show that human waste is recyclable and has many applications, the researchers have added soybean protein and other additives to sewage, to create a meat substitute with the appearance, texture, smell and taste of beef. Just add steak sauce!

If you find this all too revolting, don't panic, the sausages will probably only be used in a crisis. Moral of the story - don't get involved in a crisis!

[Reference: Waste Management and Environment (WM&E) magazine Dec 1993]

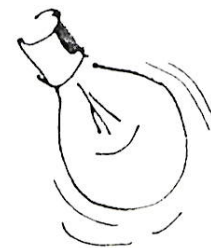
## Nursery Rhyme

There was a little man, and he had a little gun,  
And his bullets were made of lead, lead, lead;  
He saw a little duck, upon a little brook,  
And he shot it right through the head, head, head.



[Reference: Deans Mother Goose Book of Rhymes]

## Recycling Light Globes



Ever since light globes appeared on our "Lead: It's Everywhere - list of sources" (LEAD Action News Vol 1 No. 1, 1993) I've been feeling guilty about throwing old light globes in the rubbish bin. The cat's eye shaped contacts are made of lead. It seems some Melbourne councils are now recycling both council and ratepayers' globes with a machine called the "Lamcrusher", designed and manufactured in Victoria by Seldco.

The machine crushes the globes while dousing them with water to neutralise any sodium. Special filters then remove heavy metals so effectively that the waste water can be discharged into the sewerage system. Seldco is working on a process to recover and reuse heavy metals from the filter.

[Reference: WM&E magazine Jan 1993]

# Contaminated Defence Site

by Michael Maskell on behalf of ADI (Aust Defence Industries) Residents Action Group

## Australian Defence Industries Land Development

*Extracts From A Speech Given At The Public Meeting - Sunday 24 October 1993 at Cambridge Park Hall in Sydney's outer west.*

*Re: Australian Defence Industries Land Proposed Development*

*Organised By ADI Resident Action Group*

*(Residents From Communities Surrounding The Site)*

The residents of the areas surrounding the ADI site between St Marys and Penrith will not tolerate development without consultation with us the existing community.

This community has a right to be heard. The development of the site for housing and industry has implications far outside the boundaries of the A.D.I. site.

It affects the **entire** surrounding community, a community that already has **overcrowded and incomplete roads**, a community that has **overcrowded peak hour rail services**, and a community that is already subject to **unsatisfactory levels of air and water pollution**.

We are concerned particularly about the existing extensive pollution found on the site, and in particular the presence of mercury, cadmium and other heavy metals.

Will the clean up procedures create a pollution hazard itself, in particular dust clouds of contaminated soil being created during removal, is there any possibility that such dust clouds could

cause asthma or future birth defects and if so who accepts the responsibility?

Importantly where will the contamination be dumped?

A major concern of **any** large scale development in an area such as this **must** be the impact on road traffic. **our roads are overcrowded**, particularly during peak times.

It is reasonable to expect that in any additional population, almost all of the workers will have to commute to their place of employment.

This will obviously have an adverse affect on our existing local roads as well as an affect on the two main arterial roads, the great western highway and the M4 tollway.

Air pollution in the Nepean basin is already too high and with the ADI development, it will **definitely rise**, not only from additional road vehicles, but also from industrial and domestic sources.

We are also concerned about the fate of the flora and fauna on the ADI site, how many of the oxygen generating trees will be devastated?

And what impact will there be on existing surrounding areas with the loss of trees that form a natural wind break?

So, we are very concerned about the impact on our community, we should have the right to at least be consulted.



## Vic Police may try Mace

"Victorian police may be armed with a Mace-type chemical spray to defend themselves, after two fatal shootings by police within 24 hours. The police announced the move yesterday in response to criticism of their weapons procedures following the shootings."

Cartoon by Cathy Wilcox

SMH Wed 5th Jan 1994, page 1.



# Recent US Regulatory Activity on Lead

By Elizabeth O'Brien

*Whilst the recommendations of the NSW Working Groups are being looked at by the NSW Task Force on Lead in preparation for decisions by cabinet on a management strategy, it is interesting to look at recent US regulatory activity on lead.*

## US Federal Legislation Pending

### ❖ Lead Exposure Reduction Act 1993

Approved July 1993. Covers:

- product labelling to state health risks.
- mandates EPA (US Environmental Protection Agency) to develop new use notification procedures
- restricts continued use of lead-containing products
- bans lead in most paints, toys and game pieces, curtain weights, inks, glass coatings, packaging and lead solder used in plumbing systems.
- phase out of lead (up to 13 years) in paint used on motor vehicle parts, and equipment used for agricultural, construction and industrial forestry purposes.
- phase out of lead (up to 5 years) in some expressed glass coatings - architectural, automotive window, mirror backings.

EPA to:

- survey all lead-containing products and develop inventory within 180 days of enactment.
- develop list of exposure concerns within six years of enactment.
- be notified by manufacturers, processors and importers of lead, of new uses, or if product contains a higher concentration of lead than allowed by EPA. Exemptions include stained glass products, firearms and radiation shielding containers.

### ❖ Excise Tax on Lead

- Legislation to impose an excise tax on lead and lead products, and create a lead abatement trust fund.
- Would amend the Internal Revenue Code on these products manufactured or imported into the United States by imposing a tax of 45 cents per pound.
- Trust fund will use tax revenues to assist states and cities in rectifying lead paint hazards in low income housing and day care centres.

### ❖ Tax on Lead Produced

Another bill which imposes a flat tax as lead is produced at the smelter was referred to Committee in June 93. Involves a levy per ton of lead and will raise \$1 billion a year which will be used to remediate lead

paint exposure after performing identification and children's medical surveillance.

### ❖ Federal Housing Reauthorization Act

- EPA is trying to develop regulations under the Residential Lead Based Paint Hazard Reduction Act contained in Title X ("ten"), which focus on the concentration of lead in soil and dust in the belief that the mere presence of residential lead-based paint is not a health hazard, and that the primary pathway for lead uptake by children is ingestion of soil and dust. Dust exposure would form the basis for abatement action.
- The Act also sets down the requirements for training and certification of abatement workers and assessors. Many states are currently proposing bills to comply with this legislation.

### ❖ No New Permits for Incinerators

Last May EPA announced an 18 month freeze on new hazardous waste incinerator permits and new controls for existing incinerators, boilers and industrial furnaces including cement kilns. Up to 80% of the fuel used in cement kilns is hazardous paint waste. Incinerators in the US burn more than 70% of the hazardous waste.

### ❖ Community Right-to-Know

The Emergency Planning and Community Right-to-Know Act of 1986 develops plans for public safety following chemical accidents, provides for public access to information on hazardous substances and inventories of hazardous substances.

### ❖ Toxic Release Inventory (TRI)

In 1993, more than 28,000 facilities reported information on approximately 320 chemicals to TRI. Congress expanded the TRI reporting requirements in 1990 to include data on recycling and pollution prevention activities. The expansion of the TRI program is supported by the EPA so that communities are able to "separate the information on chemicals in waste streams" from "that which is actually released". TRI reporting has been credited with exceptional reductions in toxics emissions simply because industry is forced to measure what it is losing in its waste stream.

### ❖ Pollution Prevention Act of 1990

The EPA has endorsed the pollution prevention hierarchy which includes reuse/recycling, source reduction, treatment and disposal. Sufficient attention must now be given to pollution prevention strategies in all federal regulations. Also, many states have passed

bills to encourage pollution prevention, with other states such as **New York** considering such legislation.

#### ❖ **Paint Waste Recycling**

EPA proposed "universal waste" rule, which would exempt certain wastes from strict hazardous waste management requirements. e.g. it proposes to include paint wastes, such as solvent-borne waste paint as universal waste so that such wastes could easily be diverted to encourage recycling.

#### ❖ **Construction Workers Lead Exposure**

In May 1993 the Federal Occupational Safety and Health Act Construction Industry Standard for occupational exposure to lead was promulgated. Many states seek to protect construction workers in the same way that other workers have always been protected by the general industry standard for lead eg **Virginia, Michigan, California, South Carolina and Indiana.**

### **Proposed Legislation and Regulations - States of USA**

#### ❖ **Approval of Family Day Care Homes**

An emergency rule has been issued by the **Massachusetts** Executive Office of Health and Human Services, Office for Children updating the standards for the licensure or approval of family day care homes, including rules regarding lead paint abatement.

#### ❖ **Compulsory Blood Screening**

A proposed **North Carolina** bill requires lead poisoning screening of pupils prior to kindergarten and 7th grade.

#### ❖ **Fees from industry for Blood Screening**

A bill passed in 1991 by the **California** Legislature authorizes the collection of "fees" from industries that have contributed or are currently contributing to environmental lead contamination to fund a program to screen children under the age of six for elevated blood lead levels. In earlier drafts of the bill, it required the paint industry to contribute 47% and the petroleum industry to contribute 53% of the total assessment. In the final rule, this was changed to 15% from the paint and 85% from the petroleum industry.

#### ❖ **Recycled Paint**

In **California** it is proposed that all state agencies are required to purchase re-refined automotive lubricants and recycled antifreeze, solvents and paints.

#### ❖ **Bridge Paint Removal**

A **New York** bill makes provisions regarding bridge paint removal projects and provides for the study of paint removal techniques.

#### ❖ **Tax Credit for Lead Hazard Reduction**

An **Ohio** bill (Oct 93) and a **Rhode Island** bill (July 93) in relation to lead poisoning prevention create a tax credit for lead hazard reduction conducted according to applicable regulations. Another **Rhode Island** bill (July 93) provides a tax credit for homeowners for residential lead removal or abatement.

#### ❖ **Blood Lead Screening Procedures**

A **Rhode Island** regulation (June 93) amends lead poisoning prevention regulations to establish environmental lead standards, procedures and intervals for blood lead screening, procedures for laboratory testing and reimbursement by insurers, and procedures for conducting environmental lead inspections and/or lead hazard reduction activities.

#### ❖ **Blood Screening Upon Parent Request**

A **Vermont** bill (June 93) establishes a program for training and certification of lead hazard abatement workers and makes blood lead screening and testing of children available on request of parents.

#### ❖ **Lead Hazards Disclosure in Sale or Lease**

The same **Vermont** bill (June 93) provides for inspection and testing of child care facilities and ensures that lead-based paint hazards are disclosed in the sale or lease of pre-1978 housing.

#### ❖ **Unlawful Discriminatory Practice**

An **Ohio** bill (Oct 93) provides that it is an unlawful discriminatory practice to refuse to sell or rent housing because it will be occupied by a young child or pregnant woman and requires lead screening of certain young children.

#### ❖ **Toxics-in-Packaging**

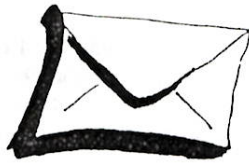
A **Pennsylvania** bill (June 93) prohibits packaging that includes inks, dyes, pigments, adhesives, stabilizers, or any other additives containing lead, cadmium, mercury or hexavalent chromium which has been intentionally introduced as an element during manufacturing. Similar bills exist in many states. In **New York** a bill on Environmentally Sound Packaging (June 93) requires packaging to be reusable or recyclable.

#### ❖ **Employee Trip Reduction Plans**

A proposed regulation by the Maryland Department of the Environment aims to implement an employee commuter options program affecting work sites employing 100 or more employees. The requirements of the program are for the affected employers to conduct surveys by mid-1994 and to submit employee trip reduction plans by November 15, 1995.

[Reference: Journal of Coatings Technology, Jul-Oct 93]●

## Letters



Michael Glass sent in this letter from his American penfriend. It was written in response to Michael's news of his son's elevated blood lead level and their consequent move from Sydney's inner west to the Blue Mountains, 70kms inland.

824 Lakeview Drive, Apt. 304B  
Parkersburg, WV 26104-1648,  
U. S. of America



Dear Michael,  
I was shocked by your news and distressed for you and Marie Louise, and I'm sorry to have taken so long to tell you so. "Outrageous fortune" played fast and loose with its slings and arrows in striking little Alan. I applaud your swift action to get him to a safe environment. It is good to hear that his blood lead is nearly at an acceptable level.

Lead poisoning appears to be threatening the entire civilized world. The United States is also concerned about the danger to small children. We have learned at first hand about the protective measures being taken in West Virginia. Almost immediately after I got your letter telling about Alan we learned Diana's and Tom's youngest child, Travis (the same age as Alan), had been tested and found to have a very high blood lead level. He was hospitalized for ten days of medication by i. v., with a catheter. Diana also went into the hospital, to see that Travis stayed hooked up. At the end of the ten days there had not been enough improvement for Travis to be released and he and Diana had five more days in the hospital. The next test showed enough progress for Travis to leave the hospital and have medication by mouth. In the meantime, the other four children were tested, as were Diana and Tom, and their house and grounds were inspected. Three of the other children have unacceptable lead levels but did not have to be hospitalised. The house was condemned for occupancy pending remedial work and Diana and Tom and the five children had to make a prolonged visit to Eppa and John. Contamination was attributed to chips and dust from old painted panels Tom removed while remodelling and modernising the building (the old school-house I once mentioned to you). The house has now passed inspection and the Grandt family is back home. All the children are having medication and being tested periodically.

Mary Ellen Melville  
[Reprinted with permission.]

August 7, 1993

The following correspondence is published here with permission of the authors, as both Anne Reeves and Mr Carbon are complimentary about The LEAD Group.

Mr. Barry Carbon  
Executive Director,  
C.E.P.A. (Commonwealth  
Environment Protection  
Agency)



Dear Mr. Carbon,  
Re: Support For **Lead Group** "Counselling And  
Advisory Consultancy Proposal"

As a member of the Nature Conservation Council Executive and President of the National Parks Association of NSW I was pleased to be part of a meeting with you earlier this month.

One of the points you stressed was your belief in empowerment of people through access to information and open processes for comment.

One of the community groups that I have become aware of in my capacity as a member of the National Health and Medical Research Council is The Lead Group.

The Lead Group, as well as playing a major role in raising awareness of the problems we face from the mobilisation of lead in the environment, and particularly as they affect young children and their families, has been providing information to concerned people. In order to do this, they have been assisted by a responsible and experienced team of advisors.

This educational and counselling service work has been provided essentially on a voluntary basis, at considerable cost of personal time and financial resources of those involved. The service has also been used as a referral option by trained practitioners and others as providing the best option for concerned individuals in many many instances.

I am writing now to urge the active support of CEPA through provision of sufficient financial resources to enable The Lead Group to continue its work in this area. I am aware, and very pleased, that The Lead Group has been included for the first time in the list of GVCO group funding. However the sum provided (in the order of \$8,000) is in no way sufficient to underpin the kind of work proposed in the draft submission prepared by The Lead Group under the heading of "Counselling and Advisory Consultancy Proposal". I understand a copy has been provided to CEPA.



I respectfully request that you take a personal interest in this issue, which I see as an example of what a community group can do to provide soundly based ongoing service filling a major gap in the current National Lead Education Programme.

Yours sincerely,  
Anne Reeves, OAM

24 December, 1993

Dear Anne,  
Re: Extra Funds For Lead Group



My people think that The Lead Group have done a great job so far. They recognise the human energy which has been involved, and that the contribution vastly exceeds the financial support given.

You are right, I am a strong advocate of empowerment of people. As well as invitations for the ongoing involvement for the Lead Group, I will ensure that they have access to our information packages.

On the basis of competition for limited funds, I can't see us funding more than the \$8-10,000 dollars as previous. I know that this will not fund the work proposed in The LEAD proposal. But compared to our response to many other groups working on many other worthy issues, our response is quite generous.

I know my response does not meet your request; nor does it satisfy the request of LEAD. I do hope that you do not read this as diminishing my admiration for the work of LEAD, and many other community based groups.

Yours sincerely,  
Barry Carbon.

30 December 1993

## Local Council Initiative

Leichhardt Municipal Council issues a leaflet entitled "Lead and Your Child - Problems and Remedies" with all BA (Building Application) approvals.

In addition, the following warning is placed on all BA permits: "Council advises extreme caution when renovating or removing old lead-based paints as the inhalation or ingestion of lead particles is hazardous, particularly to children".

The LEAD Group urges everyone to ask their own council for information about lead and refer unenlightened council employees to Leichhardt Council, 7-15 Wetherill Street, Leichhardt NSW 2040 (Ph: 02 367 9222) for a copy of the leaflet.

## Top Lead Producers, 1991 (in Metric Tons)

### Ore Concentrates

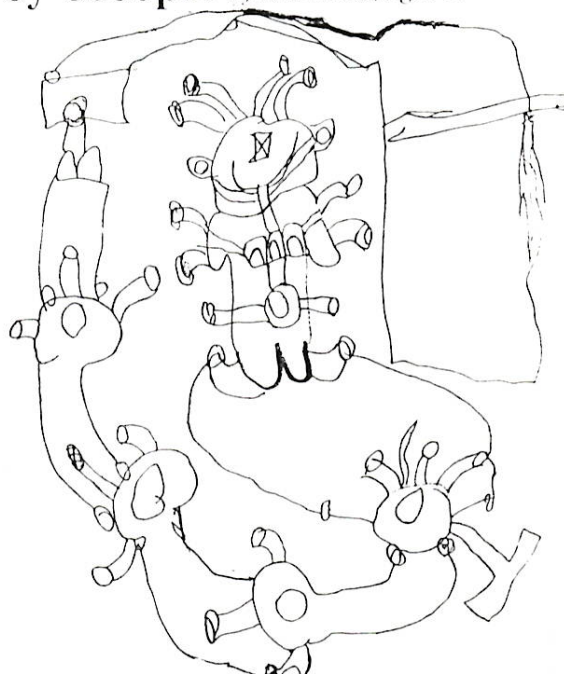
1.	Australia	571,000
2.	U.S.	477,000
3.	U.S.S.R.*	400,000
4.	China	380,000
5.	Canada	235,000
6.	Peru	203,000
7.	Mexico	158,000
8.	North Korea	120,000
9.	Yugoslavia	90,000
10.	Sweden	79,000

### Refined Metal (% primary)

1.	U.S.	1,229,000	(28%)
2.	U.S.S.R.	630,000	(60%)
3.	Germany	403,000	(43%)
4.	United Kingdom	335,000	(48%)
5.	China	330,000	(80%)
6.	Japan	328,000	(67%)
7.	France	260,000	(62%)
8.	Australia	240,000	(92%)
9.	Mexico	195,000	(82%)
10.	Canada	191,000	(52%)

\* 1991 data, the most recent available, include the former U.S.S.R. and Yugoslavia as single reporting entities. [Source: US Bureau of Mines]

## Toy Scooper *by Eric Evans, aged 5*



This robot scoops the toys off the floor, washes them and puts them back on the toy shelves.

# The History Of Lead

by Christopher Winder

*This is the first of a series of articles by Dr. Winder on the history of lead. Reprinted with permission, from his book "The Developmental Neurotoxicity of Lead" MTP Press 1984.*

## The Middle Ages

Following the fall of Rome in the fourth century, the use of lead declined in Europe and remained at a low level for about 600 years. After the ninth century lead began to be mined in Eastern Germany (the lead-rich regions of Spain were not accessible as they were in Moslem possession). It is known that white lead was used in England in the thirteenth century as there is reference to its use in the Close rolls of Edward I (1274). The practice of adulterating wine with lead and its salts had become widespread, and was banned by the Papal Bull in 1498. Nevertheless, this continued and epidemics of lead colic were by no means infrequent. These were known as poitou colic, the entrapado of Spain, the huttenkatze of Germany, the bellain of Derbyshire and the dry bellyache of the New World. Periodic outbreaks of what are now seen to be lead colic included Poitou colic (1592), Devonshire colic (1793), West India dry gripes (1786), Jamaica dry bellyache (1786) and Madrid colic (1796). Poitou colic, or 'colica pictonum' was described by Francois Citois in 1616 who thought it was due to unripe grapes. However, it was long afterwards discovered (Tronchin, 1757) to be lead colic.

In England, Devonshire colic was described by John Huxham (1739), but its true cause was not ascertained. This was left to Sir George Baker (1767) who demonstrated that the cider of Devon contained lead, while that of other areas did not. This was due to the common practice of lining cider presses with lead which subsequently dissolved into the mixture. He was responsible for the abandonment of this practice, and thus for the disappearance of the colic. In France, Tronchin (1757) also discovered many wines were able to dissolve the glaze of storage jars, which were compounded with litharge. He demonstrated that a type of colic known as 'bellon', which was associated with such wines, was caused by lead.

In the New World, a law was passed in Massachusetts in 1742 to prevent the distilling of wine in lead heads or pipes (McCord, 1953). This was not heeded further

south, and 'West India dry gripe' was first described by Thomas Cadwalder. This was an account of lead poisoning from the habitual consumption of Jamaica rum distilled through leaden pipes (Cadwalder, 1745). In Jamaica itself, John Hunter (1788) described the same 'dry bellyache' in the garrison and indicated the same causes. Even today, lead poisoning can be found in alcoholics who drink 'moonshine' distilled through lead apparatus.

Lead was still being used medically and in the early part of the nineteenth century for its action on the blood. Salts of lead were found to be haemostatic and were used for the treatment of ulcers because of their ability to coagulate albuminous material. Until recently, lead compounds could be found in the British Pharmacopoeia, including 'lead and opium solution' (a mixture of Goulard's water and laudanum) and 'Diachylon' Plasters, which use lead oxide as a base. However, the 1980 B.P. does not list any lead or lead-containing preparations.



*Illustration by Augustina Jones*

Throughout history, lead was used for water and sewage piping. As was mentioned by Vitruvius and Pliny, this practice was not good public health. In modern times, the continued use of lead in plumbing does not appear to be based on ignorance of its toxicity. In an address to the fourth National Quarantine and Sanitary Convention in 1860, Jacob Bigelow (1786-1879) noted 'but where shall we fly to escape from east winds and dogdays, from lead pipes for water contrived to kill everybody except the animalcules.' Today lead piping is still present in older houses, although in decreasing quantity as these are gradually cleared. In the construction of new buildings, lead has at last been replaced (by copper) about 2000 years after its ill effects were first noted.

These uses and abuses made many physicians aware of the nature of lead poisoning. Grisolle (1836), and Burton (1840) recognized the well known blue line on the gums, now called the Burtonian line. This line is a layer of reduced lead sulphate particles that stain the epithelial cells of the gums. Interestingly, the Burtonian line is not a specific marker of lead poisoning, and it is seen in other conditions. A blue line may also be seen around the anus.

The best description of lead poisoning was made by Tanquerel des Planches (1839) who published his work on 1217 cases of lead poisoning in Paris (translated Dana, 1848). This work is the classic in the field, and his studies were so complete that later investigators have added little to the clinical knowledge of symptoms and signs of the disease, as summarized below from a present day clinical source (Price, 1978). Devergie and Hervy (1838) used some of the postmortem material from this study to show that lead was present in the tissues of individuals dying of lead intoxication as, for example, following chelation therapy. The histological features found at autopsy were also briefly mentioned. These were expanded by later workers (Kussmaul and Maier, 1872; von Monakow, 1880).

### Clinical features of lead intoxication in man

#### *Acute poisoning*

This usually follows intense short-term exposure, but may represent an exacerbation of a chronic intoxication as, for example, following chelation therapy. The initial symptoms include a metallic taste in the mouth, vomiting, colic and the passage of black stools. Circulatory collapse may occur, and encephalopathy is a well recognized feature. Sequelae include hepatitis, renal failure and anaemia. Residual neurological disorder is frequent.

#### *Chronic poisoning*

The features of frank lead poisoning include haemopoietic, gastrointestinal, renal, and neurological involvement.

*Haemopoietic:* lead inhibits haem production, giving rise to the excretion of D-amino laevulinic acid and coproporphyrin III. Features of anaemia include pallor, a reduction of haemoglobin with the occurrence of punctate basophilia in erythrocytes and an increase in reticulocyte count.

*Gastrointestinal:* the main symptom is colic. In some cases it may be so severe as to be mistaken for an acute abdominal emergency.

*Renal:* renal tubular damage may produce a Fanconi syndrome (with aminoaciduria and glycosuria), and hypertension has been described as a sequel of lead-induced renal damage.

*Peripheral neuropathy:* wrist drop, due to radial nerve involvement, is a classic manifestation of chronic lead neurotoxicity. Clinical and experimental studies support the view that lead induces peripheral nerve lesions.

*Central nervous system:* the manifestations of saturnine encephalopathy include headache, irritability, insomnia, apprehension, confusion, nightmares and fits. High exposure levels (at least 200 ug Pb/100 ml in children and 500 ug Pb/100 ml in adults) are usually found. Recovery from encephalopathy is often incomplete, and residual neurological damage is frequent. ●

## Lead in Literature



### "The Alchemist" by Pablo Coelho

*The following are brief extracts from the book "The Alchemist", English version copyright © 1993 by Pablo Coelho and Alan R. Clarke, published by Harper Collins, NY. Reprinted with permission.*

The next day, the boy returned to the well, hoping to see the girl. To his surprise, the Englishman was there, looking out to the desert. "I waited all afternoon and evening," he said. "He appeared with the first stars of evening, I told him what I was seeking, and he asked me if I had ever transformed lead into gold. I told him that was what I had come here to learn. He told me I should try to do so. That's all he said. 'Go and try'." The boy didn't say anything. The poor Englishman had travelled all this way, only to be told that he should repeat what he had already done so many times. p99-100

"This is the first phase of the job", he said. "I have to separate out the sulfur. To do that successfully, I must have no fear of failure. It was my fear of failure that first kept me from attempting the Master Work." p103

"And then there were the others, who were interested only in the gold. They never found the secret. They forgot that lead, copper, and iron have their own destinies to fulfil. And anyone who interferes with the destiny of another thing never will discover his own." p145

"This is why alchemy exists," the boy said. "so that everyone will search for his treasure, find it, and then want to be better than he was in his former life. Lead will play its role until the world has no further need for lead; and then lead will have to form itself into gold. That's what alchemists do. They show that, when we strive to become better than we are, everything around us becomes better, too." p158

They went into the kitchen at the back of the monastery. The alchemist lighted the fire, and the monk brought him some lead, which the alchemist placed on an iron pan. When the lead had become liquid, the alchemist took from his pouch the strange yellow egg. p162

When the pan had cooled, the monk and the boy looked at it, dazzled. The lead had dried into the shape of the pan, but it was no longer lead. It was gold. "Will I learn to do that someday?" the boy asked. "This was my destiny, not yours," the alchemist answered. "But I wanted to show you that it was possible". p163 ●

# Smoking and Lead

It has long been known that cigarettes contain lead (probably from lead arsenate used as an insecticide on tobacco crops) and that smokers contain more lead than non-smokers (see graph) and passive smokers, including children, similarly have a higher blood lead that those not exposed at home.

In LEAD Action News Vol 1 No. 3 Spring 1993, we cited an example where lead workers who smoked had average blood lead levels of 50µg/dL compared to an average of 30µg/dL for non-smokers. This may be due to lead particles on hands, face, hair, clothing etc and in the air, being vaporised by the burning cigarette tip and the fumes being more bioavailable on inhalation than the ever-present lead particles.

Recently, a caller said two adult males had blood tests after renovating a house together. The smoker had a

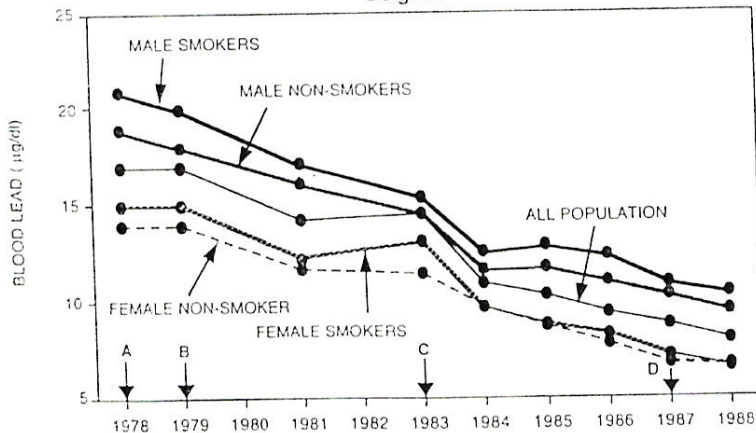


blood lead of 45µg/dL while the non-smoker, who also took a range of dietary supplements daily, had a lead level of less than 10µg/dL.

Should renovators be advised not to smoke on the job?



Average Blood Lead Levels, 1978-88  
Belgium



Change in maximum permissible level of lead in gasoline:

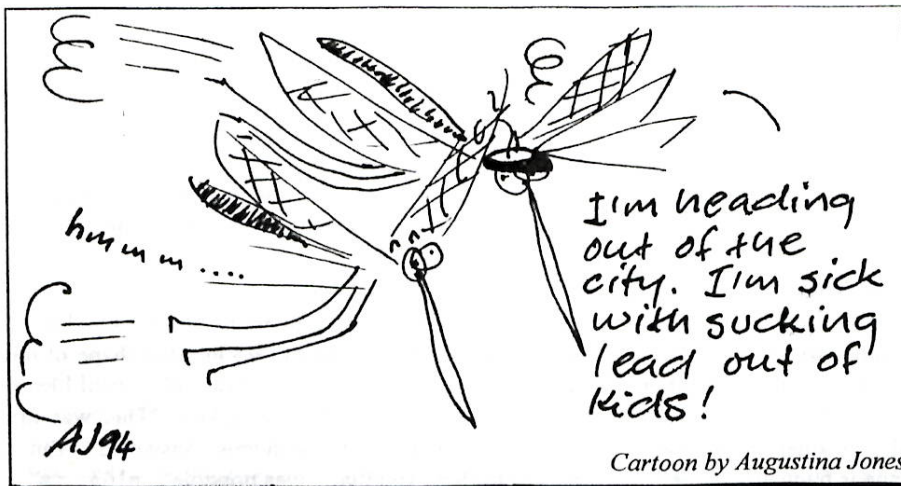
- A - to 0.55 g/l
- B - to 0.45 g/l
- C - to 0.40 g/l
- D - to 0.15 g/l

[Ref: OECD Risk Reduction Monograph No. 1: Lead 1993. Source: Belgium Ministry of Health and Environment, 1989]

## Quotable Quotes

“ ... ”

"Seinfeld" Ch 10 Jan.11 1994



Did you know that authorities in LA now advise people to stay indoors during the smog alert.

Now maybe I'm way off, but don't you think, wouldn't you assume that the air in the house pretty much comes from the air in the city where the house is? Do you realise it is now possible for parents to say to their children "Alright kids I want you in the house and get some fresh air. Summer vacation! Everybody indoors!"

# Co-ordinator's Report - January 1994

by Elizabeth O'Brien, National Co-ordinator, The LEAD Group

## Our achievements in 1993

### Members, Subscribers, Donors and Information Recipients

In 1993, as in 1992, The LEAD Group acquired over one hundred members from across Australia and your subscriptions were a great help in covering the running costs which were not covered by donations. This and the still vital volunteer labour at the Community Lead Information Centre enabled us to give free counselling by phone, fax or mail, plus free information sheets by mail or fax, to around 500 enquirers whose needs were not met by any government agency or private enterprise. It is great to see as subscribers, community health centres in Sydney and Melbourne as well as local councils and corporations (especially as the corporate subscription rate is four times the individual rate). Thanks again to all who donated funds to The LEAD Group in 1993. For a listing of the larger donations made, members can refer to the Treasurer's Report to the AGM (Annual General Meeting).

### Consultants and Network

The highly qualified team of experts on The LEAD Group's Technical Advisory Board, who are available for advice on technical and policy matters and who give our statements and publications credence, increased in number in 1993, with the happy addition of such lead luminaries as Professor Graham Vimpani and experts such as Dr Jill Maddison (veterinary research) and Peter Caldwell (until recently the Chief Engineer of NRMA) plus multi-media star Dr Karl Kruszelnicki. Some of our consultants must remain anonymous. Many of them joined in the hard slog of committee work at both state and federal level in 1993 and ably represented the community while seeking to achieve The LEAD Group's objectives. Thanks so much for this excellent work.

Our supportive network of environmental, health, community and public interest groups has continued to grow, with the addition of the Nature Conservation Council (NSW), Coalition for Urban Transport Sanity (Sydney), Victorian Conservation Council, The Environmental Youth Alliance, Friends of the Earth, Family Resource and Network Support (FRANS), and the Toxic Chemicals Committee of the Total Environment Centre. Additionally, I represented the interests of The LEAD Group at meetings organised by

the Consumers Health Forum, between community groups and the Central Sydney Division of General Practice and The LEAD Group advised several community or resident groups on issues such as the siting of preschools on busy roads, effects on residents of living near contaminated ex-defence sites or industries such as cement production and battery manufacturing and the ramifications of Victorian school closures.

### Committee

The Committee has again been hard-working and I'd like to thank them all but especially Kerry O'Donnell and Fred Salome. Members are always welcome to any of our Committee or Finance Sub-Committee meetings. Meetings are at 8:30pm on the first Wednesday of the month with Full Committee meetings in even-numbered months and Sub-Committee meetings in odd-numbered months. The Committee for 1994 will be voted in at the AGM on the first Wednesday in February at 8pm (Feb 2nd, 1994). The use of the venue has been kindly donated by Fred Salome - 4 Rothwell Avenue, Concord West. RSVP by Jan 31st.

### Other Volunteers and Pro Bono Service Providers

We have been exceptionally fortunate in 1993 to have David Ratcliffe as Office Manager of the Community Lead Information Centre, a fantastic contribution as he works nearly every day, as a volunteer. Up until June, Wan Yi volunteered one day a week for office work. For the past 6 months, Mangala has done a great job regularly filing our newspaper clippings, whilst many people must be thanked for sending them in, but especially Noela, Lynnie, Greg and Michael. We can't afford a clipping service so please help the cause by donating press clippings and TV and radio tapings. Thanks to Lyn for her generous video tape copying. Steve, Mangala and David have been very reliable and efficient in photocopying the newsletters, while many people have done word-processing, including Carol, Rebecca, Noela, Shirley, Deidre, Ann, Gail, Nana and Cathy.

Augustina and Vivien have been particularly obliging with last minute graphics and I cannot thank our volunteer desk-top publishers enough - Rebecca Peters, Desktop Workshop and Ann Warburton. Thanks also to the Volunteer Centre of NSW for providing a regular

influx of new volunteers; the old team of Noela, Greg, Lynnne and Di provided hundreds of hours of free childcare to allow me to prepare for meetings and I'm sure the State and Federal governments would like to thank them.

It was through the pro bono legal advice from John Grimes of Sly and Weigall that The LEAD Group became an incorporated association in September 1993 and the pro bono accountancy advice from Spiro Sakiris of Economos and Co may have had a part to play in The LEAD Group's successful application for one of the Grants for Voluntary Conservation Organisations. Many thanks to PIAC (Public Interest Advocacy Centre) for organising these two services.

### Media coverage

Peak media coverage of the lead issue occurred around the time of the Council meeting of the National Health and Medical Research Council in June and the Lead (in petrol) Roundtable in Canberra in July 1993. ABC TV's reporter Gavin Gilchrist won an award for his *News* reports on lead and if Julian Cribb from *The Australian* didn't win one, he should have. It was all shoulders to the wheel in the second half of 1993 with representatives of the network and the Technical Advisory Board and myself heavily involved in consultation with governments, and consequently a quieter time in the media. Nevertheless, some of us did find time for an appearance on *Live it Up* (Channel 10) hosted by Trish Goddard, for interviews for an article in *Parent's Magazine* which sparked a lot of interest, and requests for further information. Dr. Garth Alperstein and I have been consulted by a writer from *GP*, so hopefully we will see the fruits of that in a TV show soon.

### Talking to Industry

The LEAD Group arranged meetings with four of Australia's five petrol refiners and the Australian Institute of Petroleum in the 2nd quarter of 1993. The petroleum industry expressed their willingness to reduce lead in petrol by reducing the research octane number (RON) of leaded petrol and said that this could happen very quickly, virtually overnight. For the rest of 1993 we evidenced some of the dogfight between the petroleum industry and the vehicle manufacturers over the reduction in RON, at committee meetings with both NSW and Federal Governments. Finally on 1st January 1993 lead in petrol levels were reduced in all states by around 25%. (See Table.)

The petroleum industry representatives we spoke with earlier in the year also made various guesstimates of

the percentage of pre-1986 vehicles which could run on unleaded petrol (or other fuels), all or some of the time, or as a shandy (in the same tank full) with leaded petrol. The guesstimates varied from 60-90% of the pre-1986 fleet. Though we battled valiantly for the rest of the year, in the upcoming federal education campaign, only 24-30% of the pre-1986 fleet drivers will be advised to use unleaded petrol.

### Publications

In 1993 we have published the first four issues of LEAD Action News plus a range of Information Sheets which are constantly updated as bits of the information in them becomes superseded (usually due to our lobbying efforts). Titles have included: Facts Sheet, Facts Sheet about Lead in Petrol, Seven Point Plan for Australian Parents for the Prevention of Lead Poisoning in Our Young Children, Is Your Child being Exposed to Lead?

### Speaking Engagements and Info Stalls

Among the speaking engagements for myself and, in some instances, for members of The LEAD Group, were: parents meetings at a number of preschools, organisers meetings for several Family Day Care districts, staff meeting of FRANS, Abbotsleigh School old teachers and students discussion group, Soroptimists, Meadowbank TAFE childcare students, Toxic Chemical Load Conference organised by the Toxic Chemicals Committee, a Law Conference organised by Sydney Uni law students, Link-up (transport) conference organised by the Total Environment centre, Lead in Blood Conference run by Standards Australia, and Korrana Special Needs Unit professional staff meeting. Unfortunately a talk for prisoners studying for a certificate in "Understanding Children" at Mullawa Women's Prison was cancelled due to lack of supervision.

Info stalls at Balmain Festival and Summer Hill Fete saw a lot of free information and advice go out. Thanks to Jason, Lynnne, Carmel and Pam for help in manning the stalls and to Debrah and Carmel for cake-baking.

Lead in Petrol (g/L)		
	1993 levels	1st Jan. 1994
N.S.W.	.4	.3
Queensland	.4	.3
A.C.T.	.4	.3
Victoria	.3	.25
S.A.	.55 ave	.45
W.A.	.55	.45
Tasmania	.45	.3
N.T.	.5	.45

## State Governments

Results of The LEAD Group's survey of state and territory plans for lead abatement were published in LEAD Action News Vol 1 No 1 and a report of the community consultation process in the Working Groups of the NSW Lead Taskforce was published in LEAD Action News Vol 1 No 3. Meetings continue for the Lead Education Working Group though the 8 other Working Groups seem to have had their last meetings. In all I attended over 40 half-day or full-day meetings and five other unpaid community reps together would have attended around the same number. Four of The LEAD Group's Technical Advisory Board members who run their own consultancies had to forego paid work to attend meetings though other of our technical advisors were able to attend as part of their job.

## Federal Government

The first half of the year saw a flurry of activity by the Royal Melbourne Institute of Technology (RMIT) team who were chosen by a committee of the NHMRC to consult the community on lead and make recommendations. The LEAD Group members and nominees attended meetings across the country. The RMIT report made a valuable contribution to the deliberations of the Lead Roundtable and the June Council meeting of the NHMRC and will soon be available in paperback. The Environment Minister, Ros Kelly ably picked up the ball and ran with it and a new section for Lead Abatement was created in CEPA (Commonwealth Environment Protection Agency) which will even take over the National Blood Lead Survey of children once the NHMRC has written the survey protocol. I am now the only community representative on the NHMRC's National Blood Lead Survey committee, and on CEPA's Technical Working Party and the Consultative Committee on Lead in



Petrol although I am joined by environmentalist Peter Allan from ACF, on the latter.

I am one of many community representatives, environmentalists and advisers to politicians across Australia on the Reference Group to the Government Working Party on Lead (involving the Democrats and the Greens). It is a pleasure working with Imogen Zethoven, adviser to Cheryl Kernot, Democrats leader.

Thanks for your continuing support. We will continue to strive to achieve our aims.

---

## Poet's Corner

Oh, have some pity, I'm on a committee  
Which means that from morning till night,  
We attend and amend and contend and defend  
Without a conclusion in sight.

We confer and concur, we defer and demur,  
And re-iterate all of our thoughts,  
We revise the agenda with frequent addenda,  
And consider a load of reports.

We compose and propose, we suppose and oppose,  
And the points of procedure are fun,  
But though various notions are brought up as motions,  
There's terribly little gets done.

We resolve and absolve, but we never dissolve,  
Since its out of the question for us.  
What a shattering pity to end our committee  
Where else could we make such a fuss!

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# THE LEAD GROUP

INCORPORATED

The Lead Education and Abatement Design Group  
Aiming to eliminate childhood lead poisoning in Australia by  
the year 2002 and to protect the environment from lead

from

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PO Box 63 Dulwich Hill  
NSW 2203

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