

Dear Member,

At long last I am writing to inform you of the activities within the Institute since its formation in April, 1979.

Most of the intervening period has been occupied with the processing of applications for the various categories of membership as defined in the Constitution. These have been somewhat delayed because applications have come in at a slow rate and members of the Council were not always available due to overseas absences, long service leave, accidents etc. All applications received have now been processed and a list of members, their category of membership and addresses is attached for your information.

In a few instances, classification by the Council has led to some heartburning, but the guidelines agreed to by the majority of prospective members at the inaugural Sydney meeting in 1979 have been strictly adhered to. At present there are 52 members elected to the Institute, 26 as full, 20 as provisional and 6 as associate members. This small number demonstrates the paucity of people involved in Occupational Hygiene activities in Australia, a situation which it is hoped will improve in the foreseeable future.

In N.S.W. formal presentations to the Government inquiry into Occupational Safety and Health were completed in about September last; the Commissioner proceeded overseas to examine the situation in the U.S., U.K. and several other countries. The report and recommendations should be completed within the next few months. There has also been concern ventilated in the Victorian Parliament of the lack of available services in this area. Maybe these episodes will be turning points.

A summary of the discussion concerning the Institute, its aims and intentions, which followed the annual meeting of Scientific Officers in Melbourne, prepared by Jenny Smith, has been received and is enclosed with this Newsletter.

Victorian members of the Institute held an informal meeting on 24 October 1980, primarily to suggest items that may be included with the Newsletter. As a result, three items of interest have been forwarded and are also enclosed, as a guide to studies which are of general interest to us all, even to the philosophical.

Gerry Coles from the Shell Co. was Chairman of the Occupational Hygiene and Toxicology session of the Australian Institute of Petroleum Congress in September 1980 at which Pam de Silva presented a paper on "Blood Lead Levels, the Haematocrit Correction and Lead in Plasma". Pam de Silva and Margaret Donnan have had published in the Medical Journal of Australia (20 Sept. 1980 2, 6 p. 315-318) a paper "Blood Levels in Victorian Children" which has received considerable publicity. Trevor Jones and Tony Findlay presented workshop papers at the International Conference on Cancer held in Sydney in November 1980. Tony performed so vigorously he fell off his motor cycle on the way home and suffered several broken bones and myriad abrasions.

It is intended to have a meeting of the full Institute Council in February in conjunction with the programmed Occupational Hygiene Sub-Committee (NHMRC) meeting. This meeting should set out a programme for activities of the Institute, format of newsletters, state sub groups etc. The Institute is grateful to John Erkin of Alcoa for a supply of headed paper on which you will receive future communications.

A report of the February Council meeting will accompany the next Newsletter. Any ideas will be welcomed.

*Trevor Jones*  
TREVOR JONES, President.

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5th November, 1980.

#### EXPOSURE TO MERCURY AT A DENTAL AMALGAM

##### CAPSULE MANUFACTURING FACILITY

Excessive exposure to mercury was found recently among a large number of employees in a factory which makes capsules containing measured amounts of mercury and silver alloy which dentists use to make amalgam fillings.

Employees' 24 hour urinary mercury levels have ranged up to 1.6 ppm. (According to the literature the threshold level above which symptoms of poisoning may appear is 0.3 ppm). Blood mercury concentrations have been measured up to 0.16 ppm in employees. 11 employees were medically examined by this Section but no symptoms of mercury poisoning were detected.

Improvements have been implemented by the factory to the extent of rebuilding the capsulating and packing areas. The new rooms have vinyl tile floors curving up the walls for several inches, exhaust ventilation at floor level and air locks between them and the rest of the factory. The practice of decontaminating the floors in these areas with a sulphur compound every night has been instituted.

On the analytical side, efforts have been made to resolve the question as to whether 24hr urine mercury concentrations should be corrected for specific gravity. Corrected and uncorrected urine mercury levels have been compared with blood mercury levels from the same people collected at approximately the same time. It has been concluded that a correction to a specific gravity of 1.020 should be made.

Acceptable limits for urinary mercury concentrations have been reasonably well determined both in this laboratory and overseas. However until now an acceptable limit for blood mercury as a result of occupational exposure has been less defined. By correlation with corrected urinary mercury concentrations an acceptable upper limit for occupational exposure for blood mercury has been determined as well as a level which corresponds with the 0.3 ppm (lower limit for appearance of symptoms) level in urine.

For various reasons it has been concluded that urinary mercury tests remain the best method for biological monitoring of occupational exposure to mercury.

(Jennifer C. Smith)  
SCIENTIFIC OFFICER.

29 October 1980

#### HEALTH REVIEW OF VULCANISING ACTIVITIES : SECV

Vulcanising processes are in the process of change. The traditional method of repairing rubber products such as conveyor belts has been to use hot processes wherein the applied natural or synthetic rubber patch melted and blended with the existing base. Over the last 10 years or so, cold vulcanising processes using polyurethane based adhesives have become much more competitive and are replacing hot processes in certain cases.

Precursors to the polyurethane include 4,4 Diphenyl methane di-isocyanate (MDI) and Toluene 2,4 di-isocyanate (TDI). The hygienic standard recommended for both these compounds by the NHMRC is 0.02 ppm as a ceiling value. Additionally, vulcanisers use a variety of other solvents and adhesives that can lead to exposure of Trichloroethylene, Toluene, Xylene, Methyl Ethyl Ketone and aliphatic hydrocarbons.

A detailed hygiene and medical assessment was recently made of a group of 20 vulcanisers at Yallourn, having up to 40 years service to -

- a estimate present exposure levels to the abovementioned compounds;
- b determine if there were any detectable physiological changes in the vulcanisers as the result of past exposure to these compounds.

Spot and time weighted average concentrations were measured over a week of operations using available equipment including a Miran 1A infra-red analyser, Drager tubes, Organic vapour badges and personal impingers. The recommended hygiene standards were not exceeded, although there were brief excursions up to 300 ppm when cleaning with trichloroethylene.

Ventilatory lung function tests were carried out on Monday morning and afternoon and Friday afternoon. Additionally, the doctor took a medical history and performed a physical examination of the operators. None of the employees involved in the survey had apparent clinical pulmonary disease related to isocyanate exposure. There was no evidence of skin disease which could be readily related to isocyanate or solvent handling. There was no evidence of peripheral neuropathy either with symptoms or on clinical examination. Evidence of noise-induced hearing loss was detected amongst the older employees.

Recommendations were made to improve handling techniques and ventilation, further investigate the causes of hearing loss and to routinely monitor the health of these employees.

October 30, 1980

Article intended in the form of a "Letter to the Editor", to be considered in the proposed Industrial Hygiene Institute Newsletter.

"THE OVERALL SITUATION"

(or the Big Cover Up)

Victor Borge refers to the doctor who has discovered the cure for which there is no disease. Legions of Australian workers and many more worldwide, wear protective clothing in the form of overalls, dust coats, uniforms and the like, to protect them against they know not what. I venture to guess that overalls are the most widely used of all protective devices. They are worn almost every workday, and the workers or their employers do not know what material they are made from, and just how much, how little, or what type of protection they really afford.

Have any of our members looked at the overall problem, or know of a study on available fabrics, which compares their protective qualities, such as flame, heat, chemical resistance, ease of laundering, garment life and so on?

L.G. LOPEZ