cruelty, lack of objectivity and potential abuse. Furthermore, it has often been argued that non-animal alternatives can be effectively used as substitutes.

However, results of toxicity rarely conform to a predetermined pattern. In a recent report,[1] toxicologists from a major chemical manufacturing company shared an unpredictable finding made in the course of evaluating one particular substance according to the 1989 guidelines of the United States Environmental Protection Agency.[2] These guidelines required acute oral and dermal tests, which revealed slight toxicity by the oral route (LD_{50} between 200 and 2000 mg/kg body weight) and practically no toxicity by the dermal route (LD_{50} greater than 2000 mg/kg body weight).

A completely different picture emerged from the Draize test.[1] When 100 mg of material was placed in the conjunctival sac of rabbit eyes for assessment of irritant properties, each animal "exhibited a sequence of clinical systemic signs indicative of severe neurotoxicity, commencing within 6 min of application and ending in death of the animals in 12 min". The only conclusion can be that a proper initial hazard evaluation of this chemical required not just an animal test but the actual Draize-type test; otherwise, the profound toxicity observed would have remained undetected no matter whether conventional LD_{50} tests, LD_{10} tests, or alternative non-animal tests were used. A ban on the Draize test (as exists in Victoria, for example), although clearly desirable for ethical and other reasons, would appear to have been premature on scientific grounds. The message is clear — we do not yet know how to predict the results of tests used to assess the hazards of chemical substances. If we did, the toxicologist need only be armed with insight and a computer — and a massive product liability insurance package.

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Alcohol consumption and driving behaviour of hotel patrons

To the Editor: Considerable concern has been expressed by health authorities over the level of alcohol consumed by Australians.[1] Drinking alcohol to intoxication is of particular concern, especially in places such as hotels and taverns, which are associated with an increased risk of assaults, road traffic accidents and drink-driving offences.[2]

A recent Western Australian survey of 307 patrons leaving 15 hotels and taverns in Perth on Friday and Saturday evenings[3] has shown that drinking enough to attain high blood alcohol levels (BALs) is the norm in such settings. The majority of patrons (307 of 414 approached (74%)) agreed to take part in the study; they were predominantly young (87% aged 18 to 35 years), and 76% were men. Average reported patron alcohol consumption on premises was 7.6 standard drinks for men and 4.9 drinks for women. Therefore, on average, men consumed almost twice as much, and women two-and-a-half times as much, as the daily amount recommended by the National Health and Medical Research Council (NHMRC).[1] Almost one in four patrons surveyed consumed alcohol on the premises well in excess of harmful levels (more than 10 drinks if male and 6 drinks if female). Analysis of BALs of patrons showed that more than half (56%) exceeded 0.05, and more than one-third (37%) exceeded the Western Australian drink-drive limit of 0.08. Despite all patrons in the sample being informed of their BAL and legal status with respect to driving, 23% of those whose BALs were over the 0.08 legal limit were subsequently observed to drive.

These results show that the majority of young patrons drinking in Perth metropolitan hotels and taverns attain blood alcohol levels considered in most States as dangerous for driving; on such occasions they consume amounts of alcohol well in excess of limits currently recommended by health authorities. While lowering very high levels of consumption on licensed premises should lead to a reduction of alcohol-related harm and offences, this situation is unlikely to be achieved without public debate and clear enforceable guidelines as to the responsibility of licensees in serving a legal but potentially lethal psychotropic drug.

Despite community support for police enforcement of existing liquor licensing laws,[4] very little enforcement activity has been apparent in recent years.[5] There is a need for a much clearer message regarding the service of alcohol to intoxicated patrons to be conveyed to licensees. At the same time, responsible server training programs should be expanded and barstaff supported through increased public awareness campaigns outlining the responsibilities of servers of alcohol.

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Hip arthrodesis: a variant on the Trumble method

To the Editor: I would like to present a 30-year follow up of an operation reported in the Journal of 7th December 1963.[1] This was perhaps one of the last hip fusions performed, since it was about this time that the late and great Sir John Charnley was developing hip replacement surgery — an operation that has restored painless hip movement to countless thousands of arthritis sufferers. My patient is now 60 years of age and she has had two children without any obstetrical problems due to the stiff hip. She has a strong fusion and is entirely without pain in the hip. She has no backache, a common complication with this operation in years gone by. There is no shortening of the involved limb and she performs most activities without difficulty. She has slight pain when walking up a hill.

As Figure 1 indicates, this remarkable (now extinct) operation was performed through a two-inch incision in the upper lateral thigh. The long Smith-Petersen pin transgresses the hip joint, thus immobilising it while the ischio-femoral fibula graft is "taking". Whereas with this operation the fibula graft is passed through a half-inch hole in the femur and then driven into a hole in the ischium, Trumble's original operation consisted of osteotomising the femur completely and driving a stab of iliac crest deeply into the ischium. Trumble's procedure meant six non-weight-bearing months, whereas the operation I performed was followed by immediate partial weight-bearing and knee exercises. With both procedures the sciatic nerve was at risk. The graft passes perilously close to the nerve on its journey from femur to ischium.

Figure 2 indicates that the hip joint itself is fused, even though the operation did not involve opening the hip joint. The rigid immobilisation enabled bone to grow across from the acetabulum into the femur, giving rigid fixation.

FIGURE 1. Preoperative radiograph showing [illegible] arthritis of the left hip joint with cyst formation [illegible] of the joint space and irregularity of the joint [illegible] (The right hip had a normal radiological appearance.)

FIGURE 2. Radiograph taken some 30 years after operation showing the position of the Smith-Petersen pin with the guide wire still stuck in it and the ischio-femoral graft well and truly moulded. The obliteration of the hip joint with bony trabeculae is a feature.

This now defunct operation of extra-articular ischio-femoral arthrodesis, used worldwide for many years, has a particular interest for Australians. It was first described by the late Melbourne neurosurgeon, Hugh Trumble. Trumble was perhaps one of the great original thinkers Australian medicine has produced. He was a neurosurgeon who had an interest in general surgery, orthopaedics and chest surgery. He wrote a multitude of papers. He was uncle of the younger Hugh Trumble, an Australian Test cricketer, the only one ever to have performed a "hat trick" twice in Test Matches between England and Australia. (To do it once is unique, twice ensures immortality.)

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