The single oral LD50 dose for bronopol in the rat is 180mg/kg (Anon 1982). There is no published information on the LD50 for cattle. The lowest concentration of bronopol to cause gastric mucosal irritation in the dog was 40mg/kg (Moore *et al* 1976). All the calves received an equal feed of the milk – bronopol mixture resulting in 5 of the 8 calves dying within 16 h of feeding. The largest calf was the only survivor and would have had the lowest dose to body weight ratio.

Bronopol decomposes with the liberation of formaldehyde and the formation of bromonitroethanol (Bryce *et al* 1978). Formaldehyde causes acute gastro-enteritis in dairy cattle (Blood *et al* 1983). Bronopol is rapidly and extensively metabolised so that no unchanged compound is detected in the plasma or urine (Moore *et al* 1976), and this may explain the absence of bronopol in the kidney, liver and colon content.

The residue of bronopol in the milk mixture fed to the calves was calculated to be 8mg/kg under standard protocols (I Carruthers 1985 personal communication). However, the presence of substantial amounts of bronopol in the abomasal content suggests that overdosing with bronopol caused the gastro-intestinal, hepatic and renal changes, and the subsequent deaths of these calves. The remaining milk mixture in a bucket on the dairy floor could have similarly caused gastroenteritis and possibly mortality if drunk by the farmer's children. They regularly visit the dairy and were unaware of the toxic properties. Care should be taken in storing this chemical and the residues.

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Salmonellas from the cane toad, *Bufo marinus*

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Salmonellas have been isolated from the toad, *Bufo marinus*, in its native South American range (Bool and Kampelmacher 1958; Kournay *et al* 1970, 1977) and from introduced populations in the West Indies (Everard *et al* 1979). Since *B. marinus* commonly occurs in association with human habitation, Kournay *et al* (1970, 1977) suggested that it may be a significant source of contamination of the environment with salmonellas, thus posing a risk to people and other animals. This paper reports the results of a survey of salmonellas in *B. marinus* in Australia.

Free-ranging *B. marinus* collected from various locations in Queensland, New South Wales and the Northern Territory were killed, either by subcutaneous injection of sodium pentobarbitone, or by pithing. Samples of large intestinal content, collected aseptically, were inoculated onto brilliant green agar (BGA)* and into buffered peptone water (BPW)* and incubated at 37 °C for 18 to 24 h. One ml amounts of the BPW were then inoculated into 2 tubes of tetrathionate brilliant green bile broth (TBGBB), one of which was incubated at 37 °C and the other at 42 °C. After 24 h, samples of both were streaked onto BGA plates and incubated at 37 °C for 24 h. For some samples selenite broth was used instead of TBGBB. Suspect colonies were picked off for biochemical and serological tests. Biochemical identification was carried out using the Microbact 24E system† and serological identification using polyvalent O and H *Salmonella*-specific antiserum‡. *Salmonella* cultures were serotyped by the Salmonella Reference Laboratory, Institute of Medical and Veterinary Science, Adelaide.

From 19 of 150 toads (12.7%), 9 species of *Salmonella* were isolated, namely *S. aberdeen* (2 isolates), *S. anatum* (3), *S. chester* (1), *S. enteriditis* (1), *S. hvittingfoss* (1), *S. lansing* (1), *S. mgulani* (8), *S. oranianburg* (1) and *S. virchow* (3). Two toads each yielded 2 species, *S. chester* and *S. mgulani* in one and *S. mgulani* and *S. oranianburg* in the other.

Eighteen species of *Salmonella*, namely *S. abaetetuba, S. anatum, S. arizonae* 9a, 9b:1,3,11, *S. arizonae, S. armherstiana, S. caracas, S. enteriditis, S. kaapstad, S. litchifeld, S. london, S. mendoza, S. newport, S. oranianburg, S. panama, S. rubislaw, S. san diego, S. thompson* and *S. typhimurium*, have been isolated from *B. marinus* previously (Bool and Kampelmacher 1958; Kournay *et al* 1970; Everard *et al* 1979). The species we isolated included only 3 of these and 6 new records, but all 9 have been isolated previously from humans and livestock in Australia (Anon 1985). *Edwardsiella tarda* has also been isolated from cane toads (Kournay *et al* 1977), but not in this study.

Sharma (1979) showed that toads (*Bufo* spp not *B. marinus*) excreted salmonellas in higher numbers than most other vertebrates and could be a significant source of environmental contamination, particularly of water sources. In Australia, *B. marinus* attains high population density in newly colonised areas, in both rural and urban environments (Freeland 1986). Even after the initial population explosion, when numbers have declined and stabilised, cane toads persist as a common nocturnal terrestrial vertebrate. The cane toad thus has the potential to be a significant vector of salmonellas, as it progressively extends its range.

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CORRESPONDENCE

Trapping sheep blowflies using bait-bins

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I am seriously concerned about the methodology and inadequate presentation of data in a recent article by Anderson *et al* (*Aust Vet J* **67:** 93-97[1990]), which suggests that through the use of bait-bins, both blowfly numbers and the incidence of flystrike will be reduced. Anderson *et al* neither specified what type of strikes were included in their data set (that is, breech, poll, pizzle or body), nor indicated the frequency and methods by which sheep were monitored for flystrike. In addition, no measurement or index of sheep susceptibility to flystrike was