

NOTES FROM John McIlroy's work on the Sensitivity of Australian Animals to the poison 1080 (Sodium Fluoroacetate) - 1981-86

John McIlroy was a research scientist working at the CSIRO Division of Wildlife Research at Gunghalin near Canberra. During the period from 1980-86 he conducted a series of dose-response experiments to assess the sensitivity of 1080 on a representative range of Australian animals, covering species in all the main vertebrate taxons. He published 9 scientific papers in this series.

Death by 1080 Poisoning

Clinical observations were made on the experimentally poisoned animals.

“Most commonly, affected animals suddenly became hyperexcited, with rapid breathing, bouts of trembling and sometimes periodic circling within their cages. Again, some animals may then recover while other begin to vomit, convulse, or both. With some animals, particularly the eastern native and tiger cats and Tasmanian devils, the first symptoms is the sudden onset of vomiting.

Convulsions were triggered by disturbance, such as the opening of a door, sudden movement by an observer, or convulsion by a neighbouring animal. In rough order, these symptoms include: restlessness; increased hyperexcitability or response to stimuli; bouts of trembling; rapid, shallow breathing; incontinence [involuntary passing of urine and/or faeces] or diarrhoea; excessive salivation; twitching of the facial muscles; nystagmus (involuntary eyeball movement exposing the whites of the eyes) or bulging eyes with large (dilated) pupils and rapid blinking plus, in domestic cats, discharge of mucus from the eyes); slight lack of coordination or balance; abrupt bouts of vocalisation; and finally, sudden burst of violent activity such as racing around the cage, or biting the cage mesh or other objects. All affected animals then fall to the ground in a tetanic seizure, with hind limbs or all four limbs and sometimes the tail extended rigidly from their arched bodies. At other times the front feet are clasped together, clenched or used to scratch frantically at the cage walls. This tonic phase is then followed by a clonic phase in which the animals lie and kick and ‘paddle’ with the front legs and sometimes squeal, crawl around or bite at objects. During this phase the tongue and penis may be extruded, the eyes rolled back so that only the whites show and the teeth are ground together. Breathing is rapid but laboured, with some animals partly choking on their saliva. Finally such animals begin to relax, breathing more slowly and shallowly and lying quietly with the hind legs still extended but apparently semiparalysed (paresis).

From then on individual animals either: (1) gradually recover; (2) die shortly afterwards; (3) after a short or long delay (e.g. 5 min or 3-4 h) experience another one or two series of convulsions and then die shortly afterwards or eventually recover; (4) remain lying quietly, scarcely breathing or moving, until death up to 6 days later.