

## CHAPTER 2

### ANIMAL EXPERIMENTATION IN AUSTRALIA

#### Introduction

2.1 Few statistics are kept of the extent and range of animal experimentation conducted in Australia. Consequently, the Committee does not have accurate figures on the number of experiments conducted or the number of animals of each species which have been used in experiments. It also follows that the Committee does not know with any degree of accuracy whether the use of animals in experiments is increasing or decreasing.

2.2 The Victorian and Western Australian Governments collect statistics on animal experimentation and the New South Wales Government will do so under its new legislation. The other States and Territories do not collect such statistics.

2.3 In this chapter the Committee sets out the statistics and other information available to it to form a rough picture of the pattern of animal experimentation in Australia.

#### Victoria

2.4 Detailed statistics on animal experimentation are currently collected by the Department of Agriculture and Rural Affairs in Victoria. These statistics are based on the biannual returns submitted by individual experimenters to the Department. These figures have been published in an annual report entitled 'Statistics of Animal Experimentation'. The figures are now available for the period July 1982-June 1987. The public

availability of detailed statistics for a five year period enables some conclusions to be drawn as to the broad patterns of use of animals as well as trends in Victoria.

2.5 Table 2.1 provides information on the number of animals used annually by species of vertebrate in Victoria from July 1982 to June 1987. The Victorian figures do not include animal experimentation carried out in Commonwealth establishments in Victoria.

2.6 The Victorian statistics are based on animals used, not on the number of scientific procedures carried out. Dr Crossing of the Department of Agriculture and Rural Affairs explained that:

The legislation provides for a series of related scientific procedures, or a scientific procedure. In other words, one can have a program made up of a number of similar scientific procedures or it can be classed as one experiment. We do not count experiments. What we are looking at is the usage of animals, because it is possible to describe a series of related scientific procedures as one experiment. It can be difficult to differentiate between those, so we look for the number of animals used, amongst other things.<sup>1</sup>

2.7 Table 2.2 summarises the number of animals used and percentage changes from year to year, by type of use, for the period July 1982 to June 1987.

Table 2.1: Numbers of Animals Used by Type of Vertebrate in Completed Experiments: Victoria, 1982-83 to 1986-87

Type of Vertebrate	Total					% Change				
	82-83	83-84	84-85	85-86	86-87	82-83/83-84	83-84/84-85	84-85/85-86	85-86/86-87	
Mouse	121 447	151 734	119 840	168 508	125 399	+24.7%	-21.0%	+40.6%	-25.6%	
Rat	37 077	52 819	38 622	51 995	39 429	+42.4%	-26.9%	+34.6%	-24.2%	
Guinea Pig	3 983	3 354	2 480	2 276	2 758	-15.8%	-26.0%	-8.2%	+21.2%	
Other Rodent	21	34	66	-	21	+62.0%	+94.1%	n.c.	n.c.	
Rabbit	2 641	2 482	2 177	3 276	4 179	-6.0%	-22.3%	+50.5%	+27.6%	
Cat	379	271	290	303	217	-28.5%	+7.0%	+4.5%	-28.4%	
Dog	781	597	551	788	663	-23.6%	-7.7%	+41.2%	-14.8%	
Other Carnivore	7	188	4	98	-	+2 685.0%	-97.9%	+2 450.0%	n.c.	
Horse, Donkey or Cross	57	24	8	109	9	-57.9%	+66.7%	+1 362.0%	-91.7%	
Bovine	1 827	1 007	994	1 165	1 398	-44.9%	-1.39%	+17.2%	+20.0%	
Sheep	9 214	5 886	12 355	10 646	7 788	-36.1%	+110.9%	-13.8%	-26.8%	
Goat	281	184	1 192	198	570	-34.6%	+5 489.0%	-83.4%	+287.9%	
Deer	-	-	-	12	-	n.c.	n.c.	n.c.	n.c.	
Pig	1 038	1 205	1 091	4 536	5 178	+16.1%	-9.5%	+415.8%	+114.2%	
Other Ungulate	-	30	-	-	-	n.c.	n.c.	n.c.	n.c.	
Marsupial	314	200	289	329	360	-36.3%	+144.5%	+13.8%	+9.4%	
Primate	9	3	10	21	41	-66.7%	-233.0%	+210.0%	+195.2%	
Other Mammal	107	172	26	12	2	+3.0%	-84.9%	-53.8%	-83.3%	
Domestic Fowl	23 593	23 804	24 430	28 547	35 622	-7.0%	+2.6%	+16.9%	+24.8%	
Other Domestic Poultry	206	89	9	97	-	-56.8%	-89.9%	+1 007.7%	n.c.	
Other Bird	63	261	131	61	107	+414.0%	-49.8%	-53.4%	+75.4%	
Amphibian	3 460	2 268	2 602	1 838	2 761	-34.5%	+14.7%	-29.4%	+150.0%	
TOTAL	206 505	246 612	207 167	274 815	226 502	+19.4%	-15.8%	+32.6%	-17.6%	

SOURCE: Victorian Department of Agriculture and Rural Affairs: 'Statistics of Animal Experimentation'.

Table 2.2: Numbers of Animals Used and Percentage Changes  
by Type of Use - Victoria, 1982-83 to 1986-87

	82-83	83-84	84-85	85-86	86-87
Research Investigation	189,901	218,031 +14.8%	184,880 -15.3%	259,885 +40.6%	203,679 -21.6%
Diagnostic Procedure	1,853	2,885 +55.7%	1,943 - 32.7%	881 -54.7%	801 -9.1%
Education	11,355	10,547 -7.1%	12,541 +11.9%	10,734 -14.4%	12,527 +16.7%
Production of Biological Products	1,655	1,594 -3.7%	2,807 +76.1%	2,251 -19.2%	3,001 +33.9%
Product Quality Testing	325	3,215 +989%	4,805 +49.5%	747 -85.4%	6,408 +857.8%
Other	1,416	10,340 +730%	191 -98%	317 +66%	86 -72.9%
<b>TOTAL</b>	<b>206,505</b>	<b>246,612</b> +19.4%	<b>207,167</b> -15.8%	<b>274,815</b> +32.6%	<b>226,502</b> -17.6%

SOURCE: Victorian Department of Agriculture and Rural Affairs:  
'Statistics of Animal Experimentation'.

2.8 The category of 'Education' in the Victorian statistics refers solely to animals used for educational programmes in tertiary institutions and does not include any animals that may have been used in primary and secondary schools.

2.9 The Victorian statistics for this period of five years do not show any decline in the use of animals in research. Although the annual totals fluctuate, in no year has the total number of animals used annually not dropped below the level of 1982-83, the first year for which statistics were collected.

2.10 An examination of the statistics of rodents issued by the Monash University central animal house (Table 2.3) shows a similar pattern of animal use for experimental purposes. This animal house produces animals not only for use within the University but also for sale to other institutions in Melbourne and interstate. The figures of animals issued (which exclude any animals euthanased as surplus) show a relatively stable output.

Table 2.3: Rodents Issued by Monash University  
Animal House 1982-1987

Year	Mice	Rats
1982	25,093	60,334
1983	20,545	53,942
1984	23,770	63,337
1985	24,440	60,763
1986	22,186	55,196
1987	28,962	57,246

SOURCE: Compiled by Committee from response to questionnaire

Western Australia

2.11 A summary of the numbers of animals used for research purposes were provided by the Health Department of Western Australia for the years 1981-1986 is contained in Table 2.4. There was no breakdown of the use of animals into categories of experiments.

Table 2.4: Numbers of Animals Used for Research Purposes  
in Western Australia 1981-1986

Type of Animal	1981	1982	1983	1984	1985	1986
Mice	1 723	2 263	2 495	1 430	2219	1644
Rats	2 753	3 290	2 253	2 176	2403	2236
Dogs	465	447	327	300	401	586
Cats	104	86	105	141	112	68
Sheep	8 979	7 696	12 138	14 034	10331	12788
Cattle	14	52	72	80	21	12
Other	1 966	2 587	3 217	2 907	2284	2177
<b>TOTAL</b>	<b>16 004</b>	<b>16 421</b>	<b>20 607</b>	<b>21 068</b>	<b>17771</b>	<b>19511</b>

SOURCE: Health Department of Western Australia.

2.12 The use of animals in the categories of experiments covered by the Health Department return has increased by about 25 per cent over the period of four years for which figures are available.

2.13 The number of animals recorded in these statistics is substantially less than the combined total of those provided to the Committee by Murdoch University and the University of Western Australia, which are shown in Table 2.5.

Table 2.5: Numbers of Animals Used in Experiments in the University of Western Australia and Murdoch University, 1980-84

1980	1981	1982	1983	1984
39,890	43,976	43,578	96,388	86,738

SOURCE: Compiled by Committee from responses to questionnaire.

2.14 According to the Health Department, the difference is explained by the instructions contained in the 'Notes on Completing the Annual Statistical Vivisection and Experiments Return Form' which include the following:

- Information is only required on operations and other experiments of a similar nature which are performed on living animals. Purely sacrificial procedures are not included, nor are necropsies, dissection or experiments on dead animals.
- Under the Regulations information is not required on any operation of the nature of an inoculation or feeding experiment.

The form of statistical return is directly covered by the provisions of Western Australian Prevention of Cruelty to Animals Act 1920-1976, sections 6 (1) F and 6 (1) G.

2.15 The statistics relate, therefore, only to a limited category of uses of animals for experimental purposes. Because they are not comprehensive, few conclusions as to overall trends in animal experimentation in Western Australia can be based on them.

## Universities

2.16 One section of the questionnaire on animal experimentation sent out by the Committee to universities, hospitals and research institutions, dealt with the extent and types of animal experimentation being conducted at those institutions.

2.17 The replies from the universities fall into three groups.

2.18 Four universities were unable to supply details of which animals were used for all facilities and departments for the five year period 1980-84. Included in this group were Griffith University, Macquarie University, the University of Melbourne and the University of Tasmania. To ensure consistency and comparability, any figures supplied by them were not included in the tables which follow.

2.19 Three universities were able to supply details of animals issued for the period 1980-1984 from their respective central animal houses but were unable to supply full details for all other departments and breeding units for this period. They were the University of Sydney, the University of New South Wales and the University of Queensland. The statistics for the central animal houses of these universities are provided in Table 2.6.

2.20 The statistics for animals used for experimental and teaching purposes for the other 12 universities in existence at the time the questionnaire was issued are provided in Table 2.7. Table 2.8 reports the annual percentage change in the number of animals used for each of the four categories in Table 2.7.

2.21 Table 2.8 reports the annual percentage changes for each category of animals.



Table 2.6: Animals Issued from Central Animal Houses at the University of Sydney, University of New South Wales and the University of Queensland, 1980-1984

	1980	1981	1982	1983	1984
Mice	67,771	53,939	61,945	54,205	53,275
Rats	29,180	28,934	29,692	31,690	33,242
Guinea Pigs	3,233	2,639	3,485	3,414	2,812
Other Animals	10,689	9,089	8,214	8,597	7,681
<b>TOTAL</b>	<b>110,873</b>	<b>94,601</b>	<b>103,336</b>	<b>97,906</b>	<b>96,010</b>

SOURCE: Compiled by Committee from responses to questionnaire.

Table 2.7: Animals Used for Experimental and Teaching Purposes by Australian Universities\*, 1980-84

	1980	1981	1982	1983	1984
Mice	198,698	182,133	195,494	216,644	205,546
Rats	99,344	94,132	106,262	111,682	118,172
Guinea Pigs	4,097	4,746	4,842	4,759	4,856
Others	43,839	36,751	46,182	56,796	45,245
<b>TOTAL</b>	<b>345,978</b>	<b>317,762</b>	<b>352,780</b>	<b>389,881</b>	<b>373,819</b>

\* Universities include: Newcastle, New England, Flinders, La Trobe, James Cook, ANU, Deakin, Wollongong, Monash, Adelaide, Murdoch, Western Australia.

SOURCE: Compiled by Committee from responses to questionnaire.

Table 2.8: Animals Used for Experiments and Teaching in Australian Universities\* % Change Year to Year

	1980-81	1981-82	1982-83	1983-84
Mice	-8.39%	+7.3%	+10.8%	-5.1%
Rats	-5.2%	+12.9%	+5.1%	+5.8%
Guinea Pigs	+15.8%	+2.0%	-1.7%	+2.0%
Other Animals	-16.2%	+25.7%	+23.0%	-20.3%
TOTAL	-8.1%	+1.1%	+10.5%	-4.1%

\* Universities as defined for Table 2.6.

SOURCE: Compiled by Committee from responses to questionnaire.

2.22 Few firm trends in animal use for experiments and teaching in Australian universities are apparent in the statistics presented in Table 5, 6 and 7. There are substantial variations in the numbers used from year to year for most species of animal.

#### CSIRO

2.23 As Table 2.9 shows, the CSIRO has an extensive involvement in the use of animals for research purposes. The Committee notes that many farm animals used by CSIRO for purposes of research were subjected only to normal husbandry practices. The CSIRO submitted that:

In laboratory tests it is taken that some intervention to the animals occurs, eg injection, bleeding, or dosage of a drug or infection Agent. In animal husbandry tests,

animals are subjected only to normal farming practices, with the possible exception of occasional weighings, for example in an animal breeding trial.<sup>2</sup>

2.24 Table 2.10 provides a comparison between the number of sheep and cattle used in laboratory tests with those used in animal husbandry research.

Table 2.9: Numbers of Animals Used by CSIRO,  
1981-82 to 1983-84

	1981-82	1982-83	1983-84
Cattle	3 797	3 560	3 587
Sheep	24 341	22 890	22 769
Goats	66	4	11
Pigs	202	196	191
Horses/Donkeys	5	5	5
Marmosets	38	18	48
Dogs	19	17	14
Rabbits	461	397	407
Guinea Pigs	1 063	1 092	1 298
Rats	9 991	7 216	7 157
Mice	118 530	130 904	110 863
Chickens	13 302	13 847	14 524
Other	-	152	-
	161 815	180 498	160 854

SOURCE: Table 4, CSIRO, Additional Information supplied to the Committee on 27 November 1985 in response to questions at hearing, 3 July 1984.

Table 2.10: Numbers of Cattle and Sheep Used Involving Interventions or Routine Husbandry, 1981-82 to 1983-84

Year	Cattle			Sheep		
	Inter-vention	Routine Husbandry	Total	Inter-vention	Routine Husbandry	Total
1981-82	527	2,207	2,734	6,675	8,471	15,146
1982-83	353	2,287	2,640	5,906	7,815	13,721
1983-84	397	2,326	2,723	4,969	5,706	11,175

SOURCE: CSIRO - Additional information supplied to the Committee on 27 November 1985 in response to questions at hearing, 3 July 1984, Table 6.

2.25 The CSIRO statistics show a pattern which appears to be common to the statistics supplied by the universities and the Victorian Department of Agriculture and Rural Affairs, of substantial annual variations without any clear long-term trend.

### Conclusions

2.26 The Committee believes that there is a need for the Commonwealth, State and Territory Governments to publish annually details of the numbers and particular uses of animals, by species, used in experiments in research and teaching. All experiments, including husbandry and observational, on living and dead animals should be included in the statistics. There is no difference, for statistical purposes, between animals which are killed before experiments are conducted on them and animals which are killed after having undergone experiments.

2.27 Statistics by themselves can be subject to various interpretations unless some analysis is provided by the Government to assist the reader. For example, alternatives to the use of animals might have been introduced in a range of projects but a single project involving a large number of rodents might distort the total figure giving the impression that alternatives were not gaining ground within the scientific community. Similarly, a marked increase in funds available for research in one year could increase the number of projects carried out resulting in an increase in the total number of animals used even though the average number of animals used for each project might have declined.

2.28 The scientific community has been wary about the publication of statistics of animal use in experiments because of the potential misinterpretation of those statistics by the public. The Committee believes that the public has the right to know the extent of use of animals in experiments in Australia and that the statistics should therefore be published. However, it would be preferable for some analysis to accompany those statistics to make them more meaningful to the public and to reduce the possibility of misinterpretation.

2.29 The collection of such statistics need not be onerous or expensive, either for the institutions or for the government departments or authorities responsible for animal welfare. Animal houses need to keep accurate records if they are to be managed efficiently. Ethics committees also need this information for their role in monitoring animal experimentation in their institutions. It should be, therefore, little more than an exercise of collating data for inclusion in statistical returns with some additional analysis of the statistics.

2.30 The Committee RECOMMENDS that the Commonwealth, State and Territory Governments publish annually accurate and comprehensive information on the extent and forms of animal experimentation conducted within their respective jurisdictions. In addition, government authorities should provide some analysis of the statistics to make them meaningful to the public, and to reduce the potential for misinterpretation.