

SHORT CONTRIBUTIONS

ON THE OCCURRENCE OF COCCIDIAL OOCYSTS AND NEMATODE OVA IN SOFT AND HARD FAECES OF THE WILD RABBIT, *ORYCTOLAGUS* *CUNICULUS* (L.)*

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During a current study of the epidemiology of *Eimeria* spp., *Graphidium strigosum* (Dujardin), *Trichostrongylus retortaeformis* (Zeder), and *Passalurus ambiguus* (Rudolphi) in free-living populations of the wild rabbit in Australia, it was desirable that faecal samples should be taken repeatedly from individual animals and examined.

In order that the natural behaviour of the rabbits should not be grossly affected handling was reduced to a minimum. Faeces were forced direct from the rectum by manipulation. Owing to the regular coprophagy in the rabbit—coprophagy in the Australian wild rabbit has been discussed recently by Myers (1955) and Rowley (1956)—hard or soft pellets were obtained depending upon the time of day that sampling was carried out.

The question arose whether counts of nematode ova and coccidial oocysts could be accepted from both types of faeces as an indication of the level of infestation, or whether the counts might differ significantly in each type owing to the possible adjustment of the parasites to the coprophagy habit. A series of comparative counts was therefore carried out. Eighteen field-caught rabbits, each with a naturally acquired infestation with *Eimeria* and nematode spp., were used. They were kept in the laboratory in separate cages placed over fly-wire screens. Hard pellets were collected from the screens during the morning and at the same time soft pellets were obtained direct from the rectum.

A modified McMaster Laboratory flotation technique (Gordon and Whitlock 1939) was used to examine all samples. Whilst for the preparation of suspensions from hard faeces an electric mixer could be used (Kauzal and Gordon 1941), owing to the small quantity of soft pellets usually obtained these had to be ground manually in small centrifuge tubes by means of a glass rod.

In all 129 comparative counts were carried out, results being expressed as numbers of oocysts or ova per gram of faeces. The mean of all counts for each rabbit is shown in Table 1. Although there is some variation between the counts made on soft faeces and those on hard there is no bias towards either type; and as it is common for counts made on a single animal to fluctuate widely day by day, the variation is in our experience within limits which can have no effect on the final evaluation of the level of infestation. In the present study the number of oocysts in an individual rabbit varied from 220/g to 20,000/g on two consecutive days; and nematode ova varied from 500/g to 1000/g.

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Mr. M. L. Dudzinski of the Division of Mathematical Statistics, C.S.I.R.O., Canberra, kindly carried out a statistical analysis of the data obtained. The result indicates that there is no significant difference between the counts from the two types of faeces.

TABLE 1
COMPARISON OF THE MEAN DAILY OUTPUT OF OOCYSTS AND OVA IN SOFT AND
HARD RABBIT PELLETS EXPRESSED AS NUMBER PER GRAM

Rabbit	Oocysts		Ova		Number of Comparative Counts
	Soft Faeces	Hard Faeces	Soft Faeces	Hard Faeces	
1657	10	0	5	5	4
1658	125	5	0	0	4
1659	70	0	10	5	4
1660	4302	1020	82	84	9
1661	3120	269	8	11	15
1662	0	0	7	0	3
1663	1444	218	76	56	9
1664	278	423	123	88	13
1665	549	245	328	366	13
1666	155	75	45	104	11
1667	238	147	343	618	12
1668	1193	522	365	427	12
1669	55200	53168	0	0	5
W2	833	300	60	33	3
W3	6087	760	450	413	3
W5	47	47	0	0	3
W6	4010	753	0	0	3
W7	260	80	260	107	3

It may be concluded that the coprophagy habit does not induce any periodicity in output of coccidial oocysts or nematode ova and therefore either type of faeces produced by the rabbit can be used satisfactorily for the estimation of the relative level of infestation with the endoparasites mentioned above.

References

- GORDON, H. McL., and WHITLOCK, H. V. (1939).—A new technique for counting nematode eggs in sheep faeces. *J. Coun. Sci. Industr. Res. Aust.* **12**: 50-2.
- KAUZAL, G. P., and GORDON, H. McL. (1941).—A useful mixing apparatus for the preparation of suspensions of faeces for helminthological examinations. *J. Coun. Sci. Industr. Res. Aust.* **14**: 304-5.
- MYERS, K. (1955).—Coprophagy in the European rabbit (*Oryctolagus cuniculus*) in Australia. *Aust. J. Zool.* **3**: 336-45.
- ROWLEY, IAN (1956).—Coprophagy in the rabbit, *Oryctolagus cuniculus* (L.), in Tasmania. *C.S.I.R.O. Wildl. Res.* **1**: 133.