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CORRESPONDENCE

PREPATENT PERIOD OF *TAENIA OVIS* IN DOGS

Sir, — As part of the New Zealand hydatid eradication programme, working and hunting dogs are currently treated with praziquantel[†] every 6 weeks, to remove any cestodes that may have been acquired during that period. This 6-weekly dosing programme was proposed in the 1967 report of the Committee of Inquiry into Hydatids Eradication⁽¹⁾, and was implemented progressively through New Zealand between 1972 and 1975.

Because the anthelmintic treatment does not cause the dogs to purge, any worms released by the treatment are generally deposited at a later defaecation. Viable eggs present in worms at the time of treatment may be deposited in the dog's favoured defaecation area.

During the course of an experiment, 8 dogs of various breeds, all approximately 3 months of age, were each infected with 6 *T. ovis* cysts. Six weeks later they were treated with arecoline hydrobromide (1 mg/kg) and praziquantel (1 mg/kg) administered together. After a period of 3, 6 or 9 weeks they were reinfected and the process of infection and purging was repeated four times as shown in Table I. The gravid segments of the worms obtained after each treatment were minced with scissors in 10ml of water, and the eggs from all worms were pooled. An aliquot containing approximately 2000 fully developed eggs (thick brown embryophore and oncosphere with hooks parallel rather than splayed) was given orally to each of 4 sheep. Cysts were found in all sheep at necropsy between 6 and 12 weeks after infection. These cysts were used for infecting the dogs for the subsequent infections.

After the fifth treatment, 4 worms were selected as being representative of the range of worms with gravid segments. The eggs were extracted from the gravid segments of each worm, and divided into two aliquots, which were fed to either a Romney or a Merino sheep, 9 months of age, which had been raised on pasture free of larval cestode infection.

Table II shows that each worm contained some eggs that were infective to sheep. Although the data does not lend itself to statistical analysis, there appears to be a difference in the susceptibility of the two breeds of sheep to infection with *T. ovis* eggs, which may warrant further investigation.

Table I shows that at each purge some dogs harboured tapeworms with fully developed eggs 6 weeks after ingestion of cysts. On two occasions free segments were seen in the purge indicating that in these dogs at least one worm had reached the stage of proglottid release (the end of the prepatent period). The combination of anthelmintics was used in an attempt to ensure that no worms were

[†]"Droncit" Bayer.

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retained that could contribute to the population of the subsequent infection. As controls, a further group of 8 dogs were infected once, treated with the anthelmintics 6 weeks later, and their faeces were monitored for 10½ months. No segments were observed, and no worms were found at subsequent necropsy.

The data thus confirm the observation of Rickard *et al.*⁽³⁾ in Australia that dogs can harbour worms containing eggs that are infective to sheep within 6 weeks of infection with *T. ovis* cysts.

Six-weekly anthelmintic treatment could therefore result in the release of eggs before the expiry of the normal prepatent period of 5-8 weeks⁽²⁾⁽³⁾⁽⁴⁾. Prepatent periods for cestodes in dogs receiving regular anthelmintic treatment must obviously be reassessed.

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TABLE I. NUMBERS OF *TAENIA OVIS* WORMS RECOVERED FROM PURGED-DOG FAECES SIX WEEKS AFTER INFECTION WITH SIX CYSTICERCI

Date of each infection	Corgie		Retriever	Dachshund	Collie		Alsatian		Labrador	
	X Collie	X Collie			X Kelpie	X Labrador	X Kelpie	X Labrador	X Alsatian	
27.9.78	2 m*	4 m	0	0	6	0	3 m	4 m	0	0
11.1.79	5 m	0	0	0	2 i**	0	5 m	4 m+	4 m	4 m
4.4.79	0	1 m	0	0	0	0	0	1 m	1 m	1 m
25.6.79	4 m+	6 m	1 m	0	0	4 m	6 m	1 m	1 m	2 m
28.8.79	5 m 1 i+	3 m	3 m	1 m	4 i	5 i	0	3 m	1 i	0

* m = Worms with some gravid segments containing fully developed eggs.

** i = Immature worms.

+ = Free segments in the purge.

TABLE II. INFECTIVITY FOR SHEEP OF EGGS FROM FOUR 6-WEEK OLD *TAENIA OVIS* WORMS

Worm No.	Length (mm)	Number of gravid segments	% of fully developed eggs	Number of cysts in carcase	
				Merino	Romney
T1-2	3150	20	3	42	0
P1-3	1800	44	5	1 059	317
O1-5	1150	28	19	503	120
P1-1	2090	50	28	>10 000*	>10 000*

* These animals died 14 days after infection.