

*Brief Communication*

MYCOPLASMA OVIPNEUMONIAE DEMONSTRATED IN  
ICELANDIC SHEEP

For at least thirty years chronic pneumonia of suckling lambs has occurred in many sheep flocks in the north-eastern part of Iceland, Thingeyjarsýsla. Owing to the retarded growth rate of affected lambs, the farmers named it "kregda" which means "the poor eater". A similar syndrome has also been observed in some areas of South Iceland (*Gislason* 1963).

The morbidity of the disease varies from year to year but can be very high, whereas mortality is very low. Adult sheep are not clinically affected but have apparently acted as carriers of the disease into previously healthy flocks.

The clinical signs often appear in lambs during the first few weeks of life. They consist of coughing, increased respiratory rate and mucoid nasal discharge. The lambs are lacking in vigour and become unthrifty and small. The disease varies in severity. When brought back from summer pastures at 4—5 months of age some lambs have recovered whereas others still exhibit signs of respiratory affection and stunted growth. On post-mortem examination specific changes are as a rule confined to the lungs, often consisting only of small atelectasis-like streaks in the apical and cardiac lobes. In more advanced cases lobular and lobar consolidation and even abscesses are observed. The more severe lesions may be due to secondary invaders since organisms of the genus *Pasteurella* are often recovered from affected lungs. The macroscopic and microscopic features of the lesions (*Georgsson, G.*, to be published) appear similar to those described for a proliferative interstitial pneumonia of sheep in Australia reported to be associated with mycoplasma infection (*Sullivan et al.* 1973).

In view of these results we examined lungs of 4—5 months old lambs from 3 flocks for mycoplasmas, following the principles described by *Friis* (1975). The results are presented in Table 1. Flock I was from a farm in South Iceland where "kregda" had been a problem previously but was not clinically evident in the lambs slaughtered this time. The lungs displayed minimal

Table 1. Identification of *Mycoplasma ovipneumoniae* isolated from lung material of Icelandic sheep.

	Number of lungs examined	Strains' code No.	Atmosphere for solid medium	Serologic examination**					
				g.i.		m.i.		i.f.a.	
				op	d	op	d	op	d
Flock I South Iceland	11/8	1	air	4	0	80	<10	+	0
		2	air	3	0	160	<10	+	0
		3	air	3	0	320	<10	+	0
		4	air	7	0	160	<10	+	0
Flock II West Iceland	11/1	5	air	9	0	160	<10	+	0
Flock III North Iceland	3/3	6	air + CO <sub>2</sub> *	4	0	160	<10	+	0
		7	air	4	0	20	<10	+	0
		8	air + CO <sub>2</sub> *	6	0	40	<10	+	0
		M. ovipneumoniae	air	9	0	320	<10	+	0
		M. dispar	air + CO <sub>2</sub> *	0	8	10	2500	0	+

\* No colonies developed on inoculated solid medium incubated in pure air at 37°C.

\*\* g.i. = growth inhibition test, figures indicate zones of inhibition in mm.

m.i. = metabolism inhibition test, figures indicate reciprocal of titre.

i.f.a. = indirect immunofluorescence (colonies).

op = antiserum for *M. ovipneumoniae* (Y-98).

d = antiserum for *M. dispar* (462/2).

atelectasis-like changes. Flock II was from a farm in West Iceland where clinical "kregda" had not been reported and no lung lesions were seen at slaughter. Flock III was from a farm in North Iceland where "kregda" was a serious problem and the lungs tested had typical severe lesions. Of the 12 isolates obtained 8 were studied in detail. In broth the growth of the isolates was associated with heavy acid production, and on solid medium they all produced colonies of the "centreless" type. Broth cultures of the 8 isolates were passed through a 0.45 µm membrane filter and cloned once on solid medium. It was noted initially and confirmed after cloning that on solid medium 6 of the strains grew equally well in air alone and in an atmosphere of air + 5–10 % CO<sub>2</sub>. Two strains, however, only grew on solid medium when CO<sub>2</sub> was present.

The mycoplasmas were examined serologically using hyper-

immune rabbit antiserum against *Mycoplasma ovipneumoniae*, strain Y-98, and *Mycoplasma dispar*, strain 462/2. The growth inhibition test, the metabolism inhibition test, and the indirect epi-immunofluorescence test were used. Table 1 shows that all isolates could be identified as *M. ovipneumoniae*.

The need for CO<sub>2</sub> for cultures on solid medium exhibited by 2 of the isolates is not a feature of the type strain of *M. ovipneumoniae*. Being a characteristic feature of *M. dispar* it might indicate a relation to this species. No such relation, however, was disclosed by the serological methods applied.

The demonstration of *M. ovipneumoniae* in sheep from 3 different localities in Iceland indicates a wide distribution of this species among Icelandic sheep. Further investigations are needed to answer the question whether this mycoplasma is etiologically involved in the "kregda" syndrome.

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