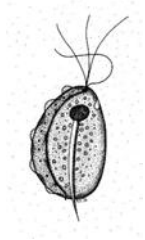
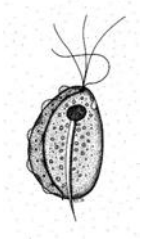
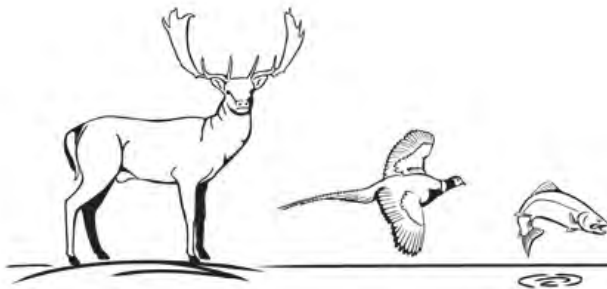
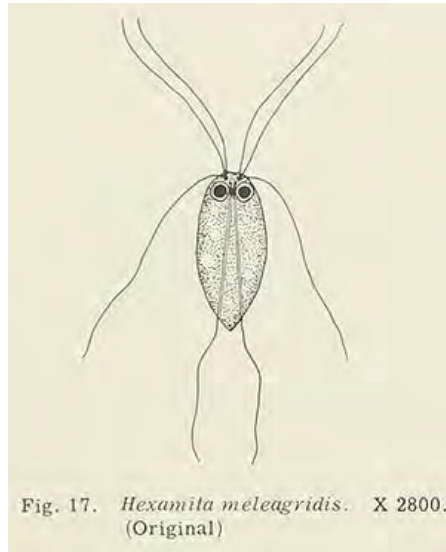


The Complexities and dilemmas of our relationship with Motile Protozoa in Gamebirds



Some thoughts from a Small Practice



Dr Mark Elliott BVSc VetMFHom MRCVS
South Downs Veterinary Consultancy

What exactly are we talking about when we diagnose disease caused by/involving motile protozoa?

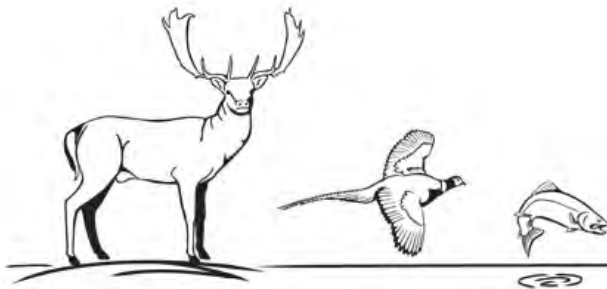
Hexi / Trich / Spironucleus / etc etc.

Terminology is confused amongst interest groups,

Experienced Vets in the same room do not necessarily agree diagnoses when presented with video footage

Experienced Vets in the same room can have differing views as to significance of infection presence.

Experienced Vets in the same room can approach treatment differently



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What exactly are we talking about when we diagnose disease caused by/involving motile protozoa?

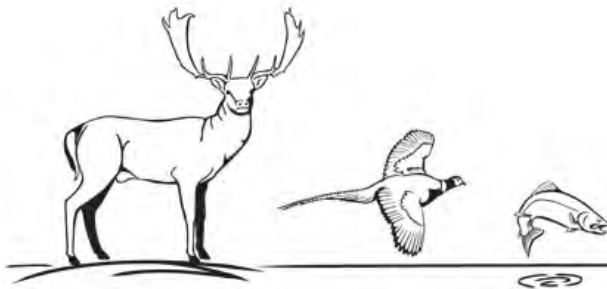
Lack of information and agreement impacts on our ability to investigate and have confidence in new ideas and treatments

We cannot say for sure how the treatments we are giving work

If cannot say for sure how the treatments we are giving work, how can we interpret concerns such as resistance to treatments?

Much of current practice is entirely based on practitioner observation and experience passed down

This leaves us open to restrictions and even removal of some key medications in the climate of concern over AMR



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Our case is helped by:

The responsible use of Medications

A commitment to transparency and monitoring

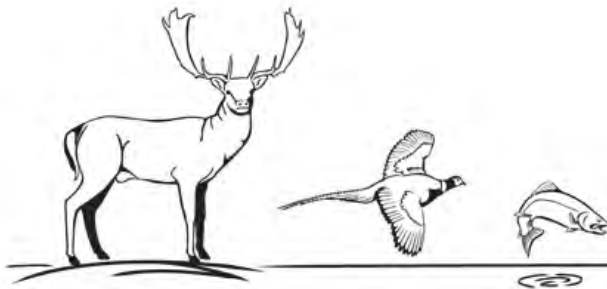
Education of all those involved in the industry.

And will be helped by

Industry Vets/GWCT Working Party

Establishment of research to better understand the diseases, their significance, and why we use the treatments we do at the levels we do.

New treatments may result?



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Can we diagnose effectively in the Field?

Hexamita – Acute onset, Small Intestine, Dehydration/starvation effect

(Hexamita in Pheasants – GWCT Research website publication), rapid treatment responses to correct doses

Trichomonas - slower onset, Caecum, slow wasting, slower treatment response. Increases antibiotic use

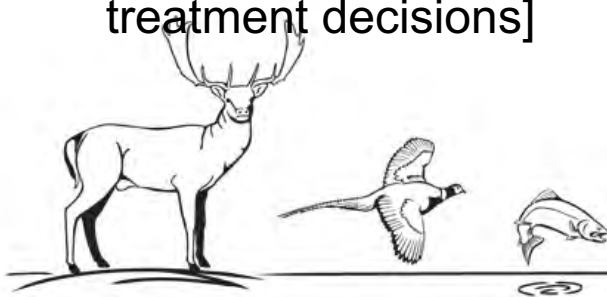
Blastocystis – probably not a significant player, responds/clears quickly. May enhance anaerobic conditions facilitating other protozoa to reach higher levels (Taylor MA et al. Vet Record (1996) 138, 624,625 Blastocysts in Game Birds)

Brachyspira - Mild illness, complicating concurrent disease, rare on its own. More of an issue of release pens and older birds

(Welchman et al. Vet Record (2016), 10.1136/vr.103496 Intestinal Spirochaetes (Brachyspira spp.) in Pheasants in Great Britain.)

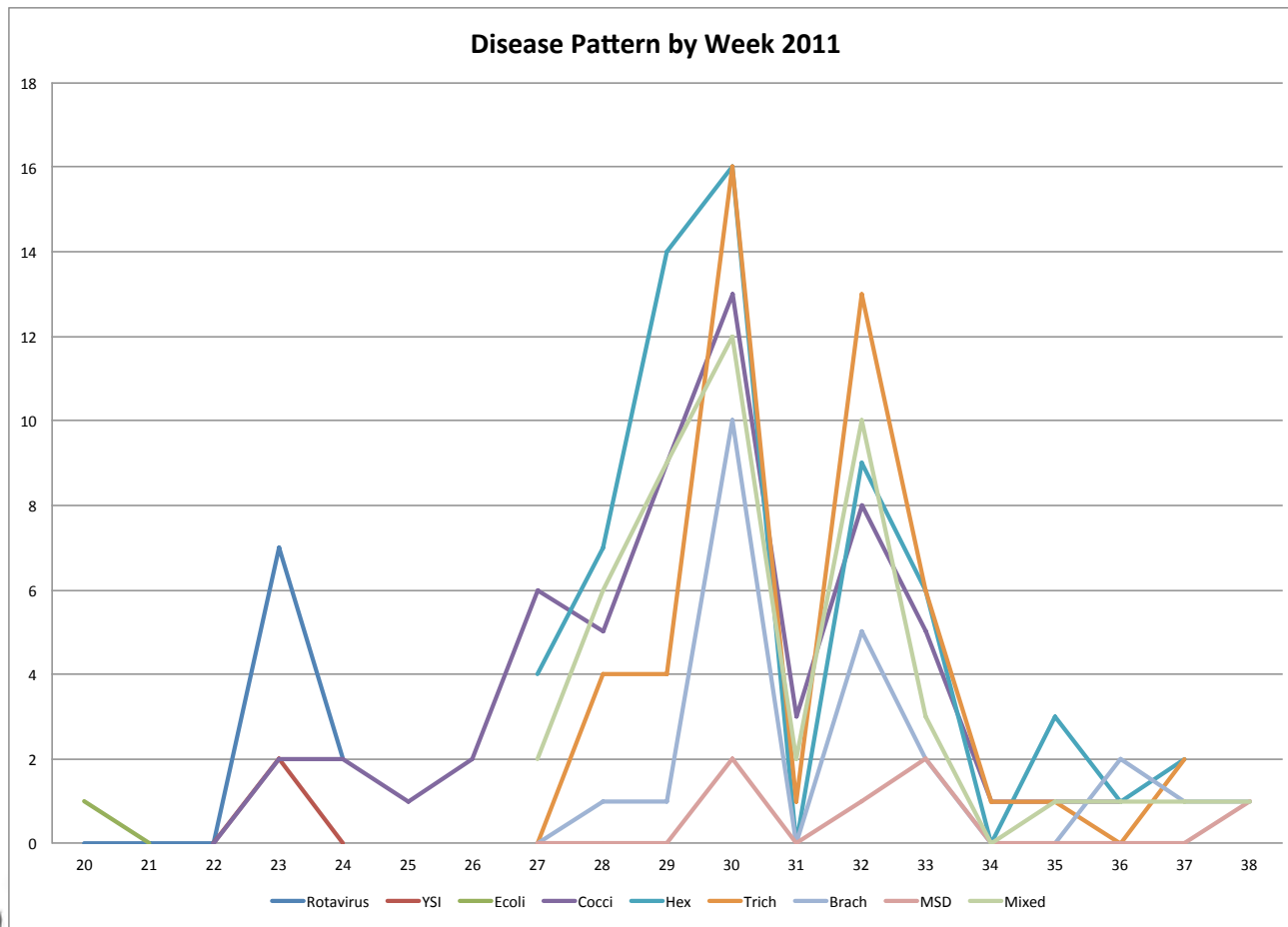
[**Sarcina** – emerging disease as part of the complex, hastens bird decline? Leads to relapsing motile protozoan problems if not treated, complicates treatment decisions]

[Videos of Diseases]



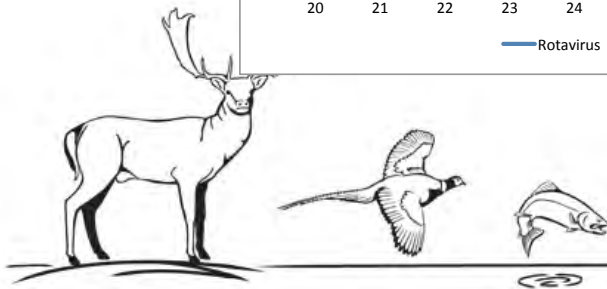
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What can we do with Field Data?



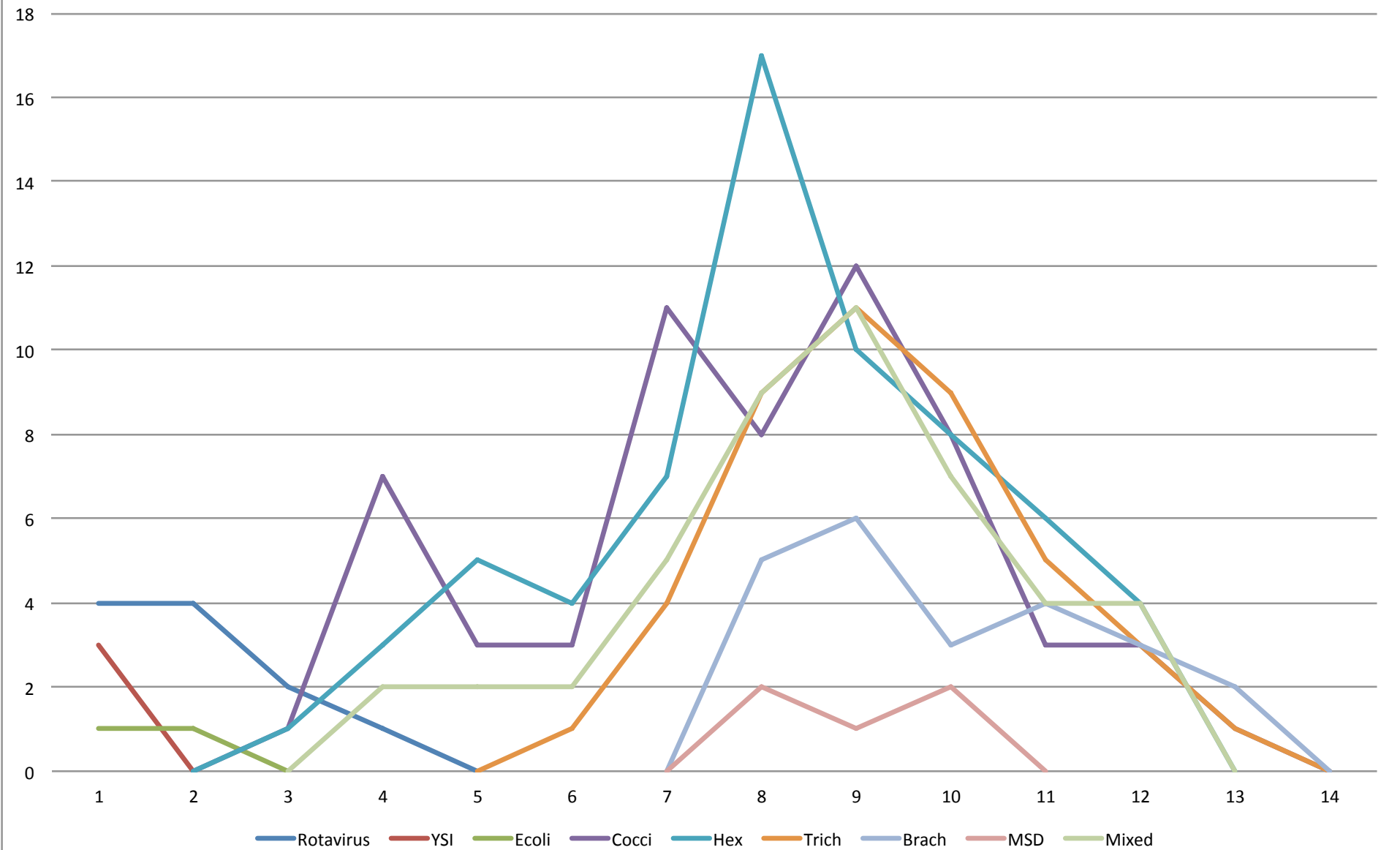
2011/12
Data from
practice
records
Dr M Elliott

Analysis part
of a Student
project by
Dr Ben
South

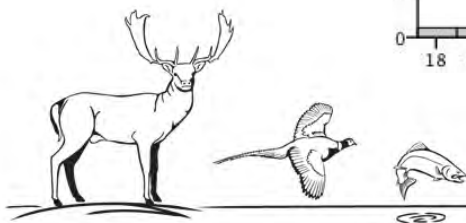
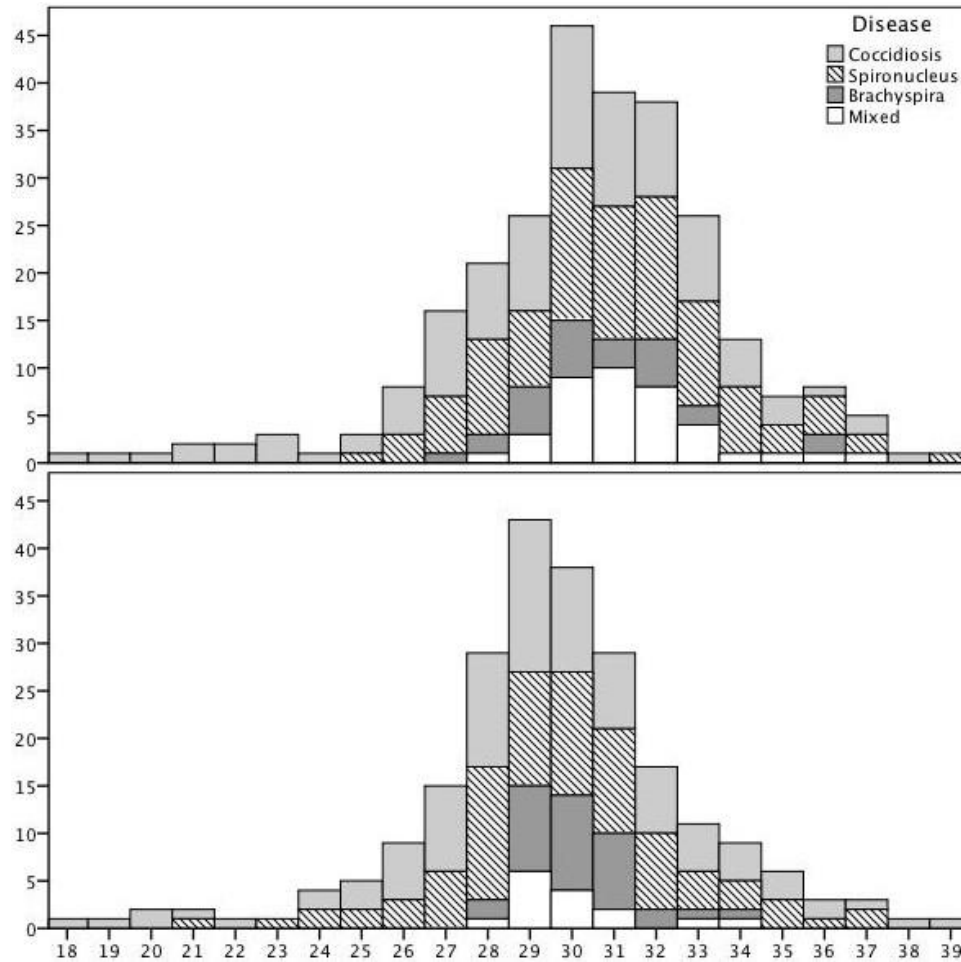


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Disease Pattern by Age 2011

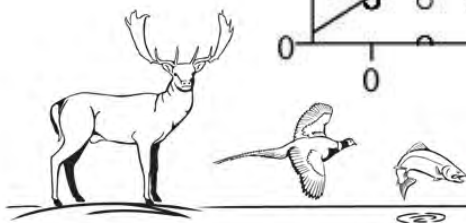
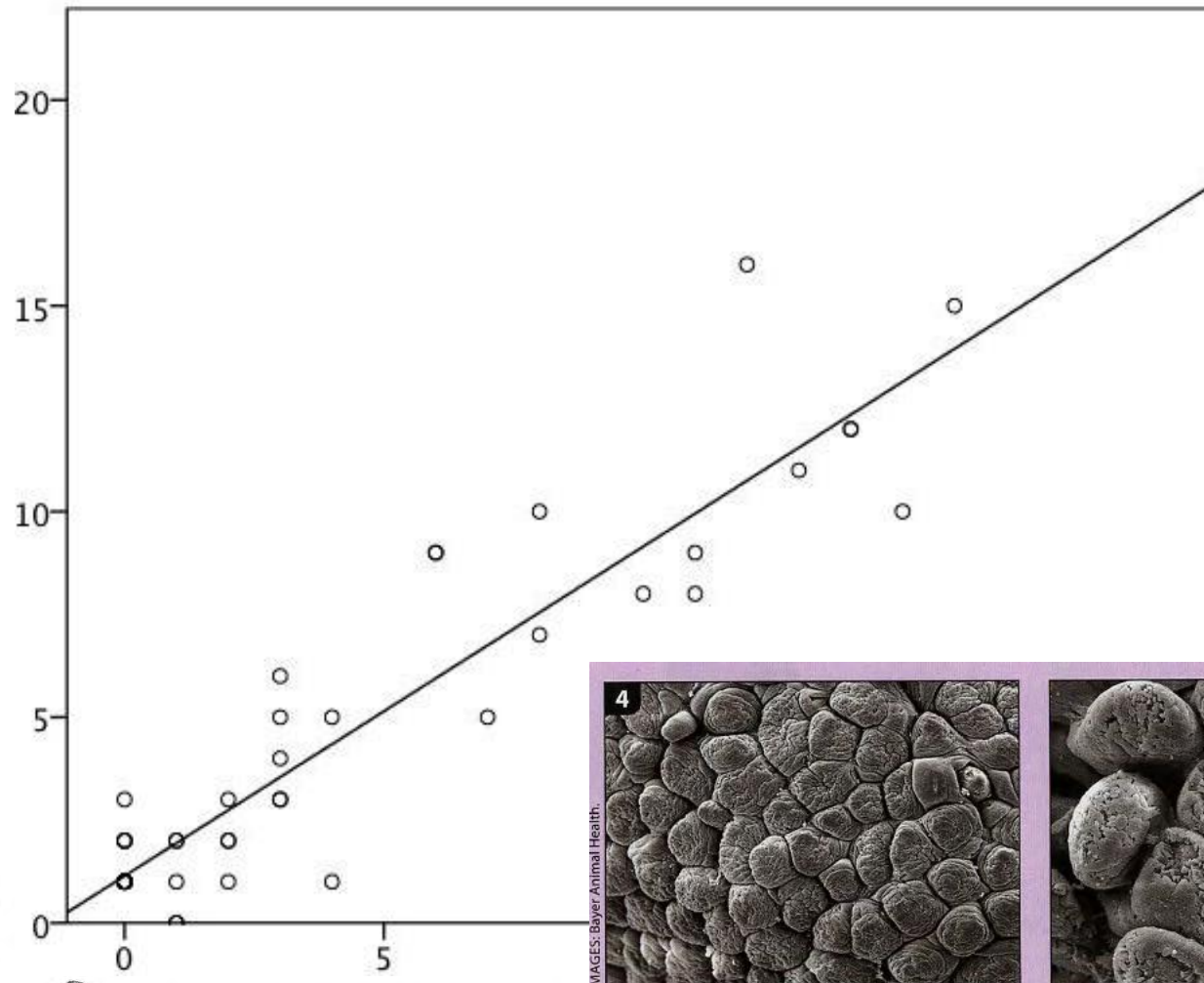


Comparison of the total number of disease cases identified during the rearing seasons (May – October) of 2011 and 2012.



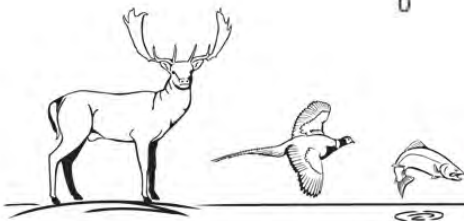
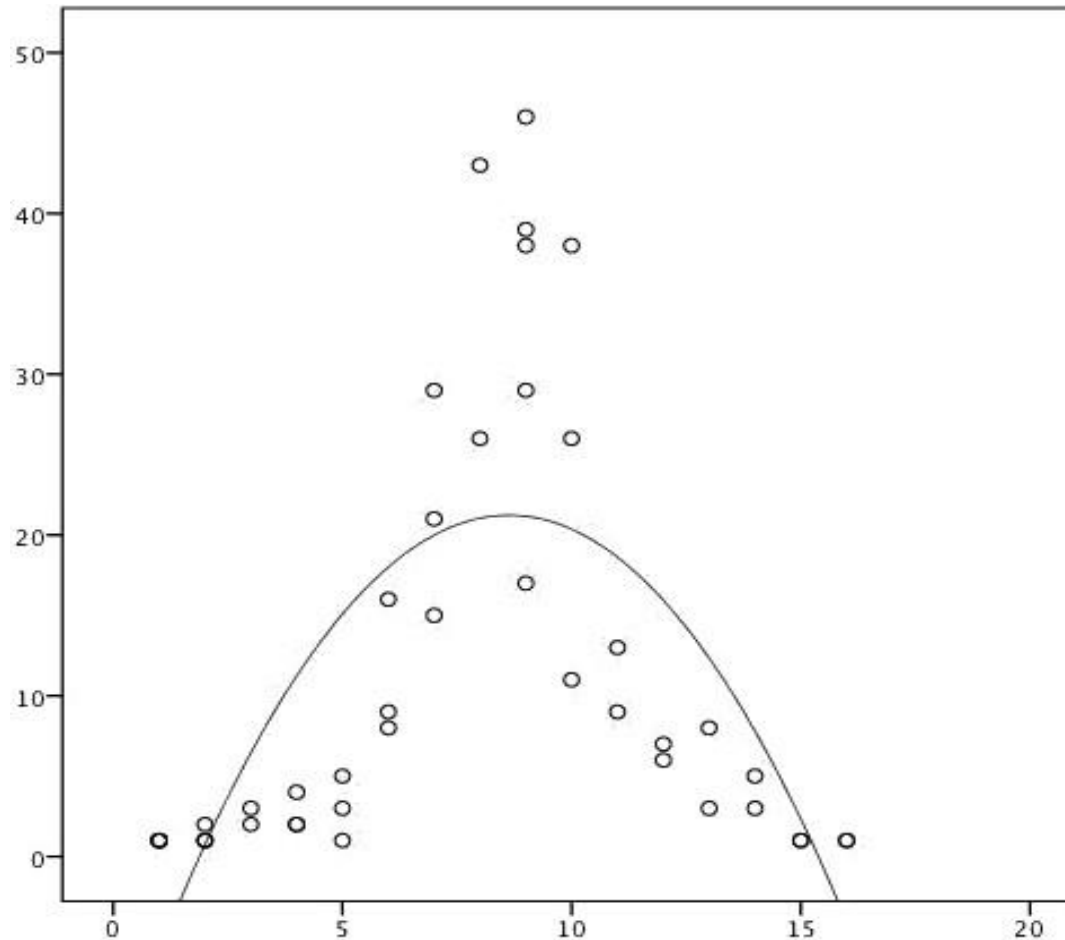
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The positive correlation between presence of Coccidiosis and Spironucleus.



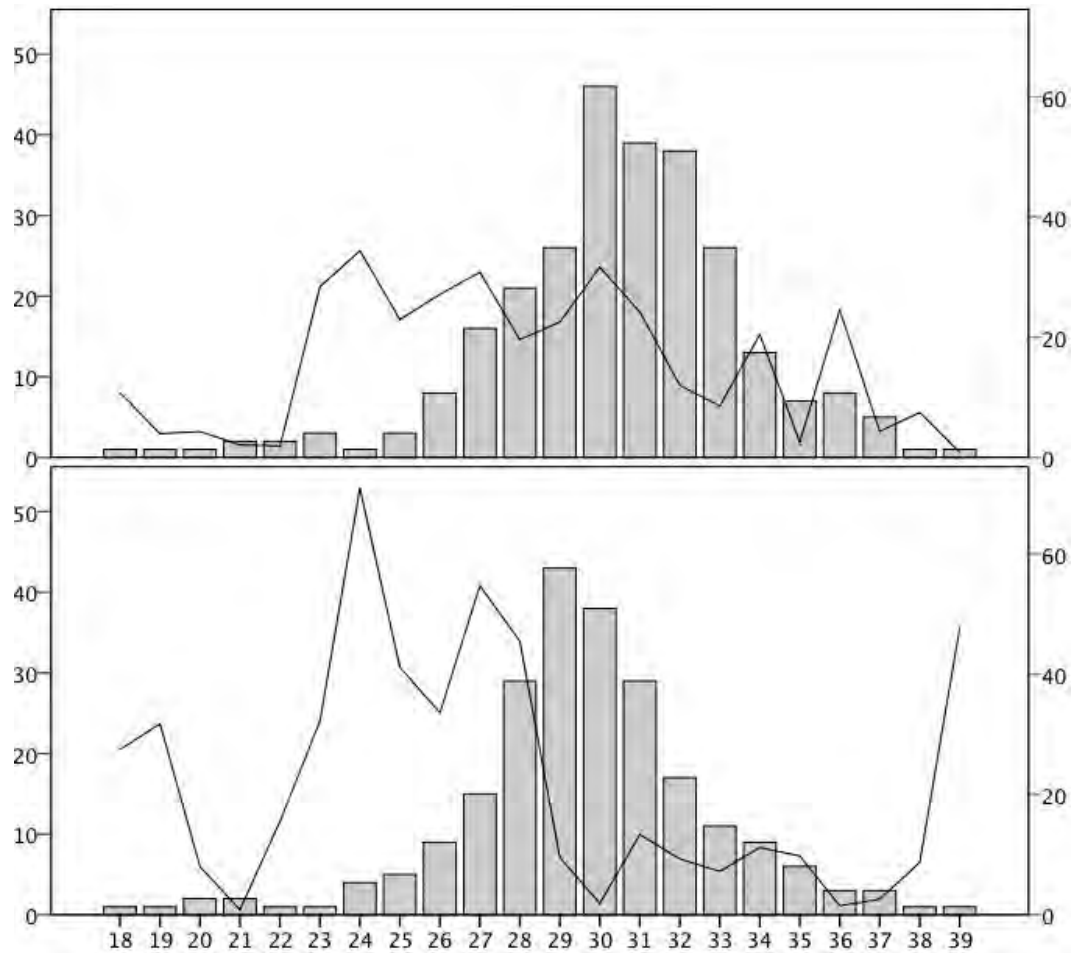
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The distribution of positive disease cases (2011 & 2012) associated with age

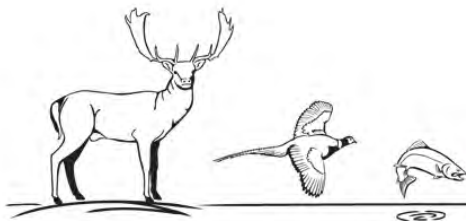


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A comparison of the relationship between weekly precipitation and the outbreak of disease during the rearing season in 2011 and 2012.

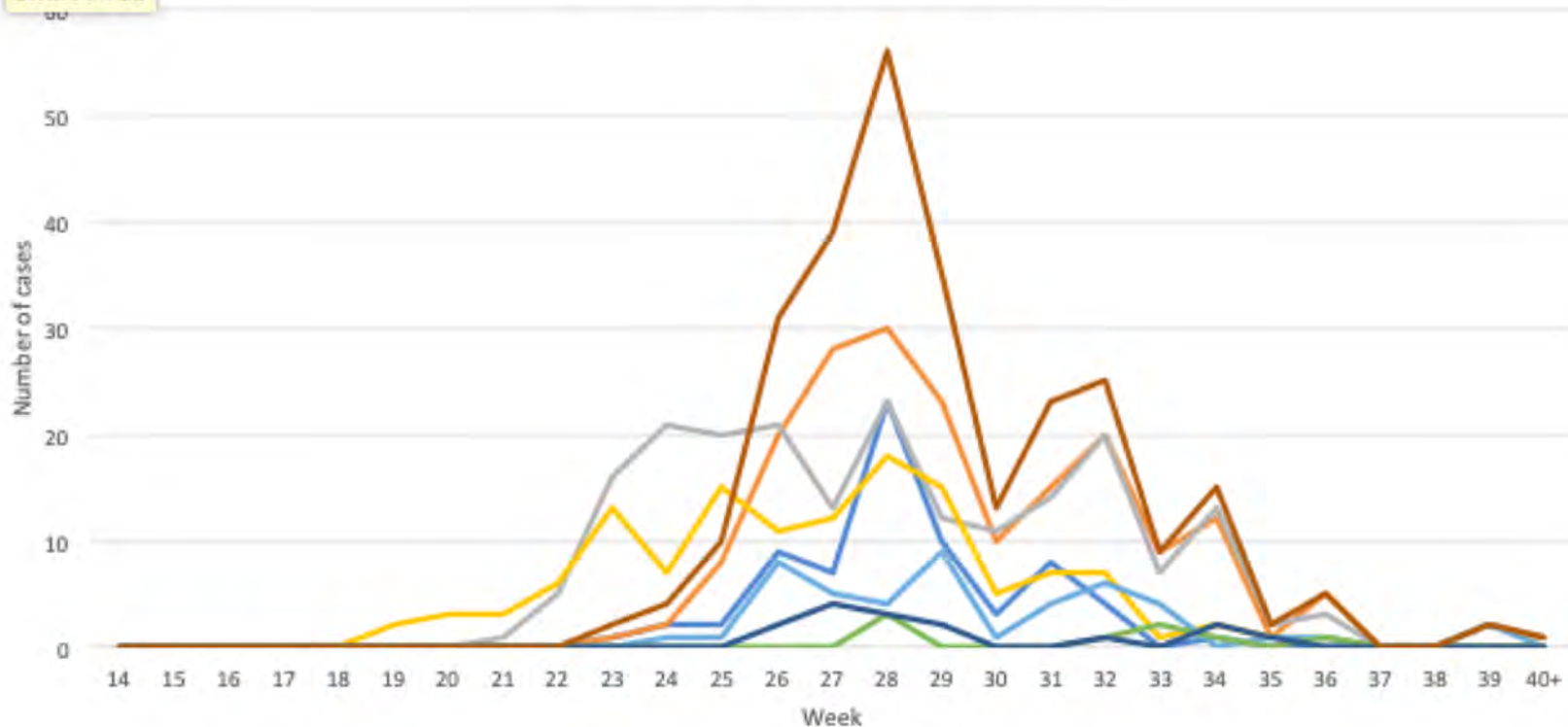


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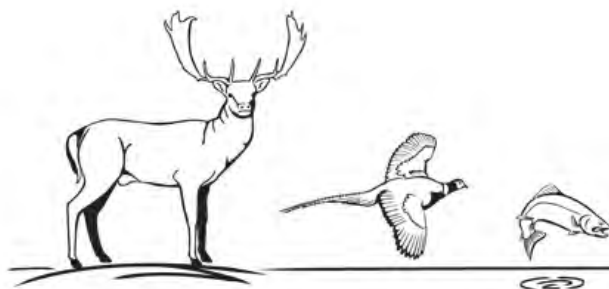


Disease Pattern by Week 2018

Chart Area

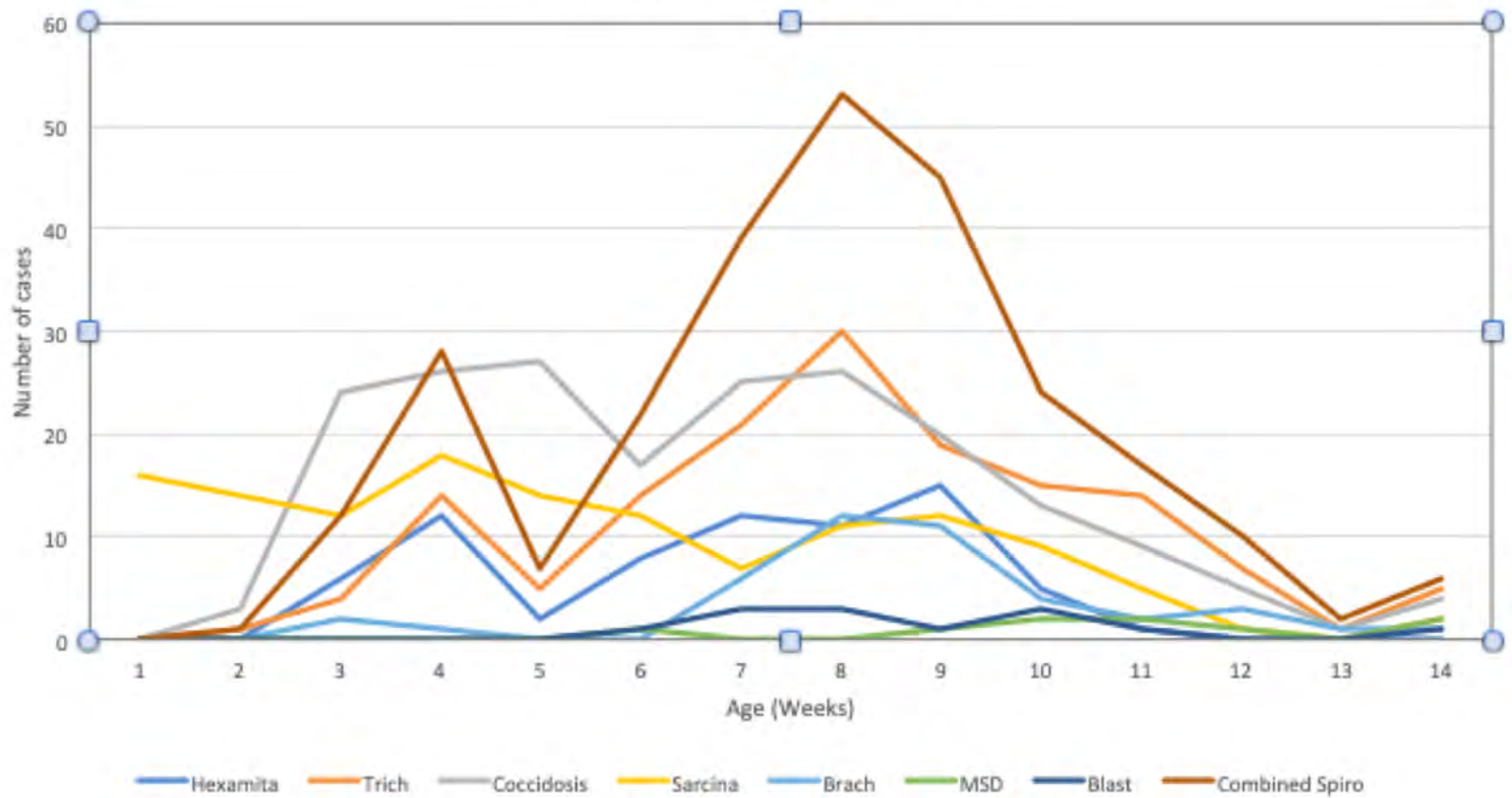


Data from
Practice
Records
2018
Dr M Elliott

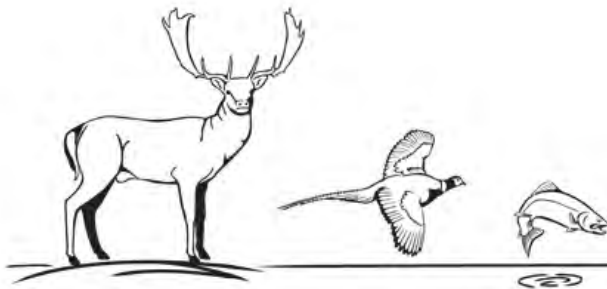


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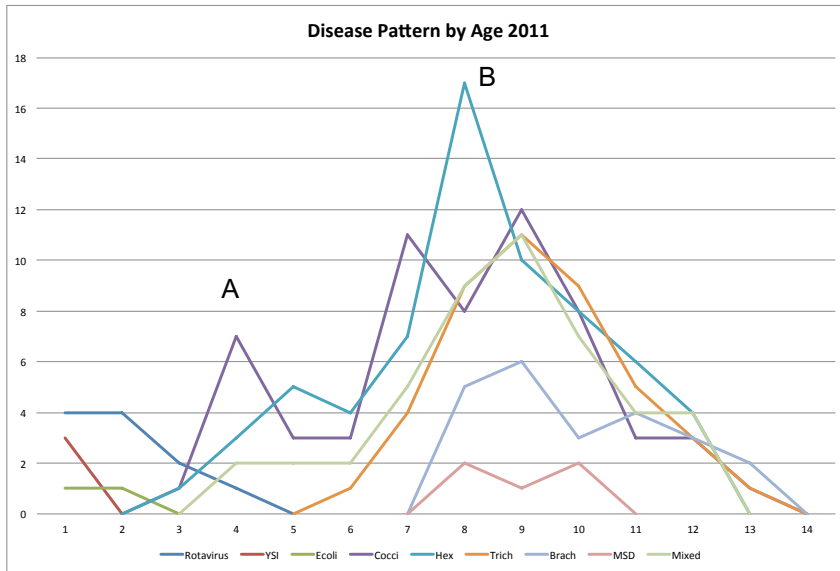
Disease Pattern by Age 2018



Data from
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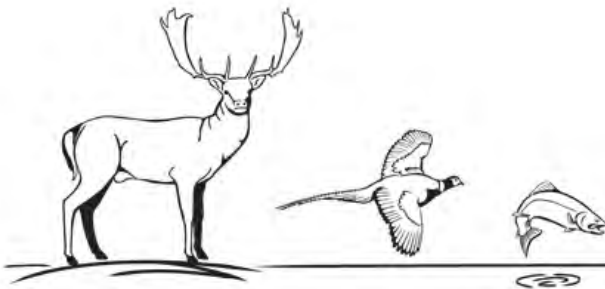


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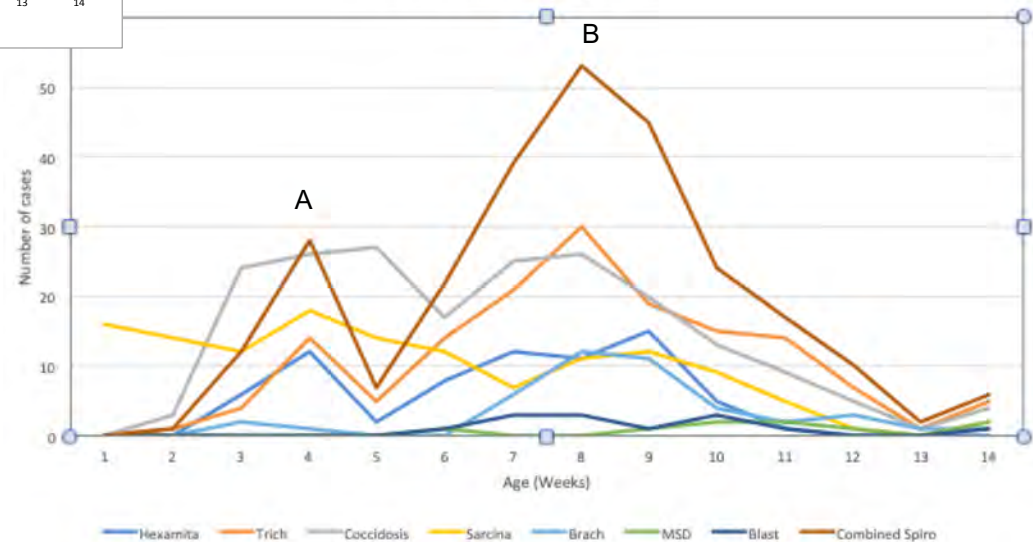


2011/12 Wettest years for many years

2018 Warmest since 2006/driest since 2003, sunniest since 1995.

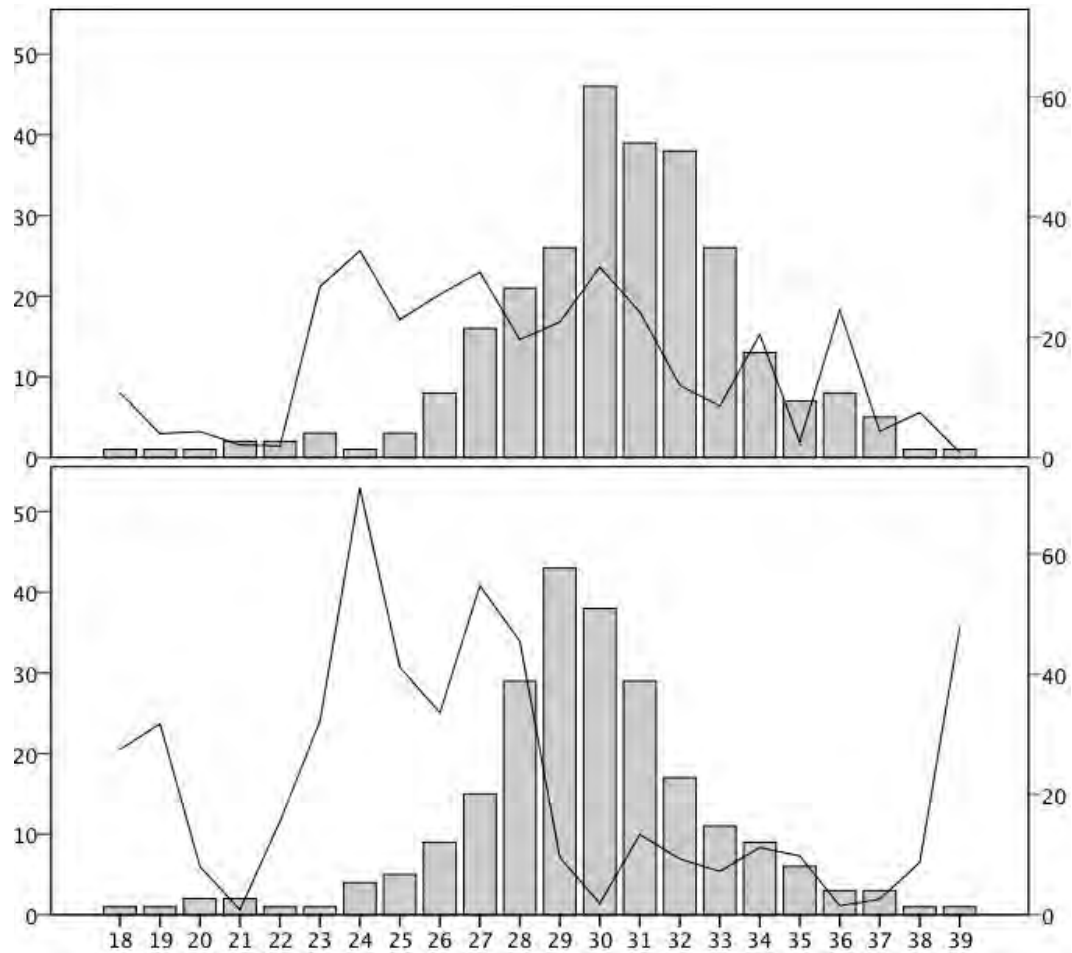


Disease Pattern by Age 2018

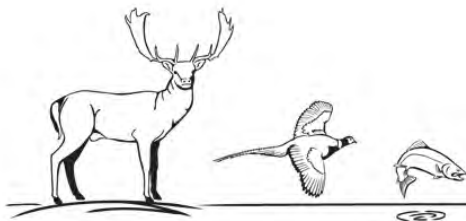


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A comparison of the relationship between weekly precipitation and the outbreak of disease during the rearing season in 2011 and 2012.

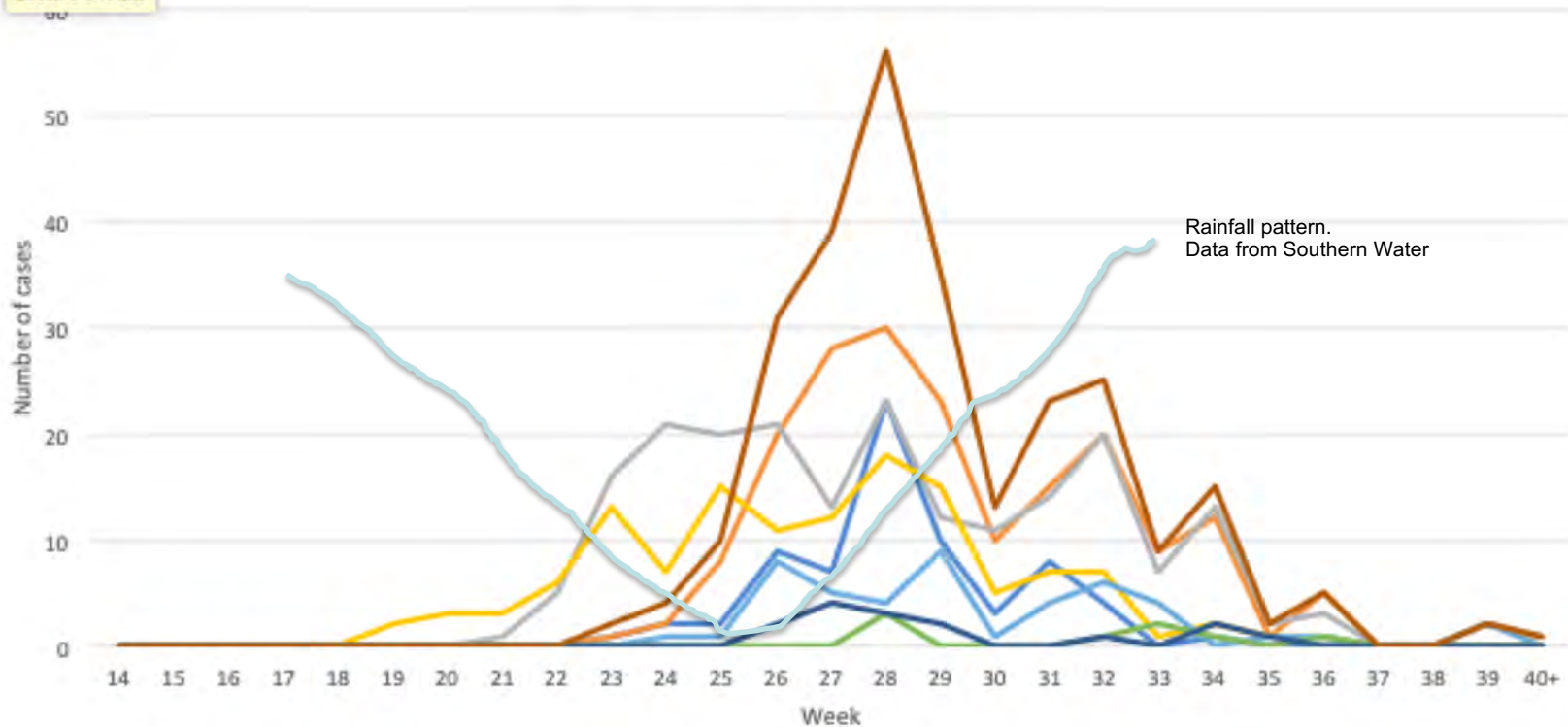


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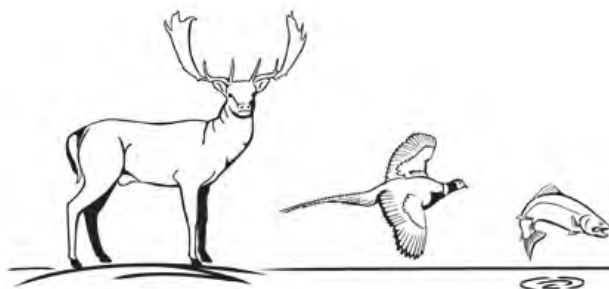


Disease Pattern by Week 2018

Chart Area



Data from
Practice
Records
2018
Dr M Elliott



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Key Points

Coccidiosis appears to drive the early risk of disease due to Motile Protozoa

Rainfall may be associated with increased early Coccidiosis challenge

Weather extremes appear to drive the Motile Protozoan risk

Sarcina appears an emerging disease with greater significance early on in the poults life – it complicates treatment and compromises response.

The peak incidence of disease due to motile protozoa is around 8 weeks of age, just as birds are placed to release pens, but this is driven by the lifecycle and relationship of the bird with disease rather than release itself

Brachyspira may be a significant player in the disease complex from 6 weeks of age onwards to 12/13 weeks and maybe beyond

Underlying viral challenge may be significant (MSD) in immune status.
Histomonas should not be forgotten.



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Some personal conclusions

Early and rapid effective diagnosis of ALL diseases present and appropriate intervention is key to recovery, reduction of risk of relapse and less antibiotic use.

Medication regimes must be successful –ie the right dose for the right time must reach the birds

Second look Post Mortems are a justifiable decision both logically (AMR) and economically

Choice of medication, and advice on management regimes can start to be considered in terms of age relationship to disease

While Rain is a big issue, not only in stress but in considering how best to medicate – dilution fx – Heat brings its own problems

Keepers need to plan for medication of older birds than perhaps previously considered.



Some personal observations

Organic Essential Oils may have a role in preventing progression to disease

Water Acidifiers dramatically improve treatment responses and may help in reducing risk of progression to disease

Resistance is common to Chlortetracycline, occasional to Oxtetracycline, and uncommon to Doxycycline. It would be nice to have Tetracycline available as another backup



Educating Clients

Madam Green Business Centre, High Street, Oving
Chichester, West Sussex. PO20 2DD

Tel: 01243 779111 Fax: 01243 527722
Website: www.southdownsvets.co.uk



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Baycox / Toltra-K for Gamebirds.

Dose (ml) = 0.28 X liveweight/Kg of birds.

Age (weeks)	PHEASANT	PARTRIDGE
	ml/ litres Drinking water	ml/ litres Drinking water
1	1	1.4
2	1.1	0.84
3	1.2	0.9
4	1.4	1
5	1.5	1
6	1.7	1.3
7	2	1.7
8	2.2	1.9
9	2.5	2.2
10	2.9	2.6
12	3.2	2.9
Adult	3.3	2.9

Dosage Notes

Add 1 to 3 ml per litre according to the dosage chart opposite

Note: over 2.2ml per litre the birds do not like the product so water consumption may decline. Better to run at 2.2ml per litre for 3-4 days

No other water to be available during treatment

Make fresh twice daily

1 Gallon = 4.55 litres

40 Gallons = 182 litres

Baycox Verdunner Water Additive

This helps keep the Baycox in solution in hard water and we may recommend it when prescribing treatment.

Add an hour before adding the Baycox, especially if water is from a borehole.

100ml treats 4000 litres of water.

So 5ml treats a 200 litre tank.

Note - this is highly caustic when concentrated so wear gloves when handling.

NB all consumption levels will be minimum to provide fresh each day, and one should allow for wastage.

The solution should be made up fresh twice daily in hardwater areas and warm weather.

Treatment Time 2-3 days

Withdrawal time (meat) 28 days

NOTE: All charts are provided for the exclusive use of South Downs Veterinary Consultancy and no responsibility can be taken for use of these doses by others

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Gamebird Karidox Dosing guide.

(water)50mg/Kg

Product is 10% active ingredient by weight

Age (weeks)	PHEASANT		PARTRIDGE - RedL		PARTRIDGE - Grey	
	g/1000 birds Doxycyc	ml/100 litres Drinking water	g/1000 birds Doxycyc	ml/100 litres Drinking water	g/1000 birds Doxycyc	ml/100 litres Drinking water
1	2.5	192	0.85	125	0.55	122
2	4	192	1.5	146	0.9	132
3	6	222	2.25	167	1.4	155
4	10	250	3.5	175	2.25	167
5	15	277	5	185	3.1	172
6	19	316	7	233	4.3	221
7	22.5	351	9.5	297	5.75	273
8	27.5	404	11.5	338	7	311
9	32.5	445	14	388	8.5	354
10	37.5	510	16.5	458	10.5	420
12	45	577	20	526	12.5	480
Adult	70	700	22.5	561	17.5	564

NB all consumption levels will be minimum to provide fresh each day, and one should allow for wastage. The solution should be made up fresh twice daily in hardwater areas and warm weather.

Treatment Time 5-7 days

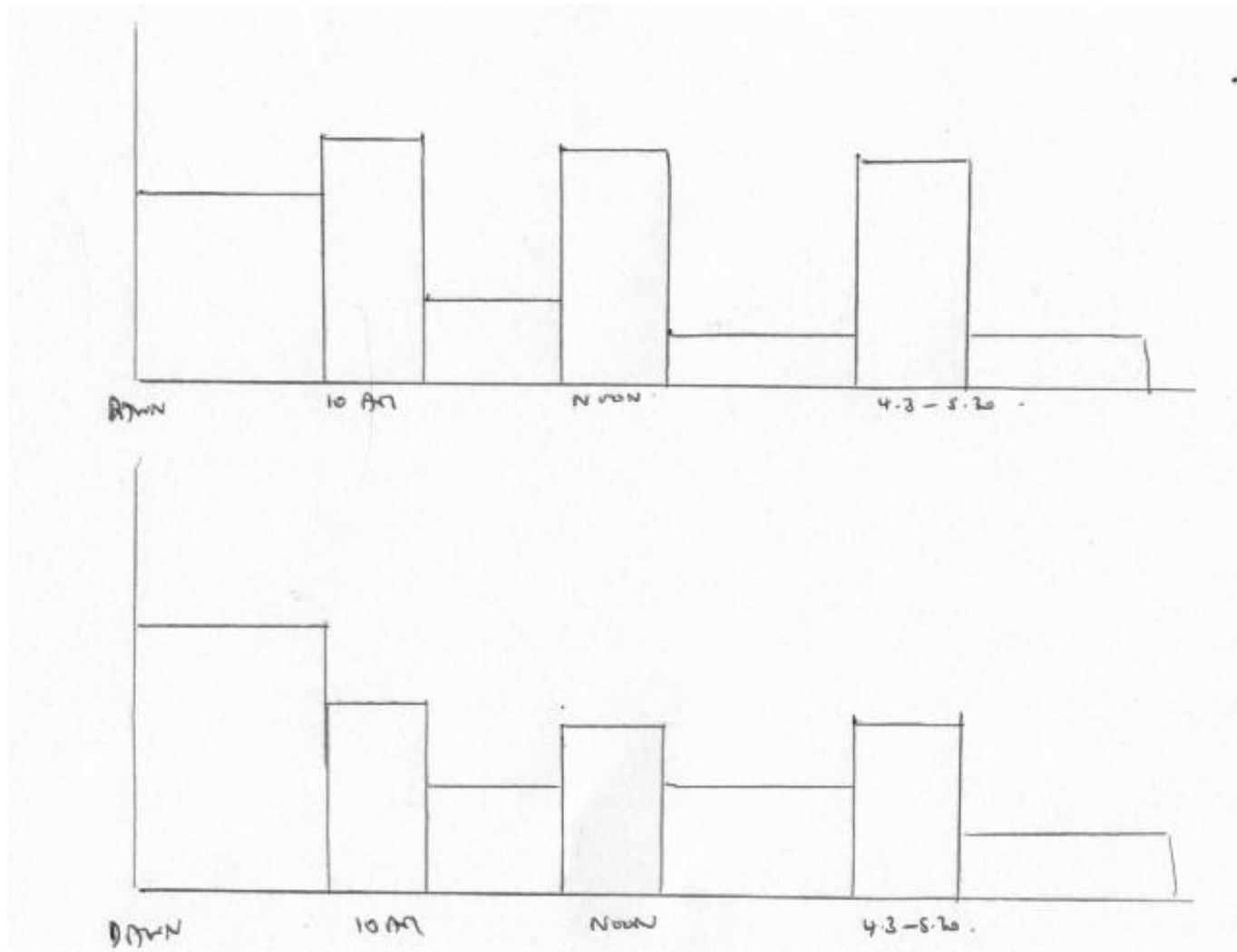
Withdrawal time (meat) 28 days

Pack sizes 1 & 5 Litre

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Pheasant Drinking Patterns



How Much Water?

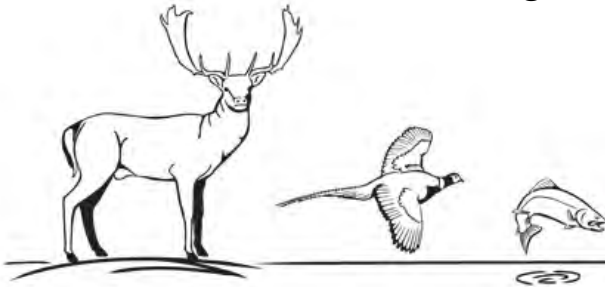
You cannot put out too many drinkers

Birds per Nipple – advice varies from 10 to 30 for Chicks, but by release, if just on nipples then 6-9 birds per nipple is needed.

For Open Drinkers, again advice varies but 0.1 linear inches per bird is a rough guide

Feeders are as important and by release 0.5 to 0.7 linear inches per released bird is commonly quoted

NB Competition at peak times adds to stress, and stress leads to disease. More water/feeder access, with more drinkers/feeders, is needed as birds grow

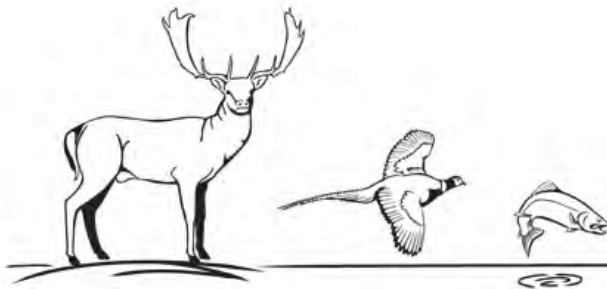


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Blue-Skye thinking

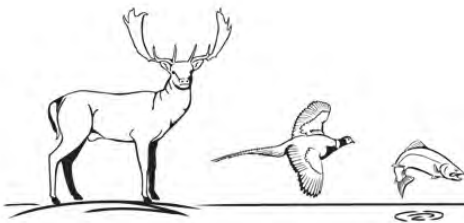
**Flock Health Planning will become essential for all
Every part of the cycle will involve specialist Gamebird Vets
Improvements in Hygiene will be developed
Biosecurity will become a by-word
Research and Development will take off
New drugs may be developed
Feed formulation will evolve
Pheasant specific vaccines may be made
Extensification will be remembered as a tool
Data, and data sharing, will support the Industry**

Medication will no longer be given in hope, it will be with expectation through understanding



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Thank you for listening



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