

New Ticks in Town: Expanding Ranges and Emerging Pathogens in the Mid-Atlantic - Ben Pagac

- a) Tick species
 - i) *Amblyomma*
 - (1) *americanum*
 - (2) *maculatum*
 - ii) *Dermacentor variabilis*
 - iii) *Ixodes*
 - (1) *affinis*
 - (2) *scapularis*
- b) Tick ranges
 - i) Lone star
 - (1) Eastern US
 - (2) Before mid-80s they were found south of Maryland
 - ii) American dog tick is very widely distributed
 - iii) Black-legged tick
 - (1) Not found contiguously
 - (2) Found in eastern US and up into MI and WI
 - iv) *Ixodes affinis*
 - v) Gulf Coast tick
 - (1) Range
 - (a) Primarily Southern and coastal
 - (b) Found in three sites in TN
 - (c) Found up into Maryland
 - (2) Study
 - (a) Collected by tick drag
 - (i) Rapid crawlers
 - (ii) Rapid feeders
 - (iii) Painful biters
 - (b) Habitat
 - (i) Found in higher numbers out in the field away from woods
 - (ii) Established in burn area
 - (iii) Widespread with focal hot spots
 - (c) No time preference for activity
- c) Pathogens
 - i) Ticks often carry more than one pathogen
 - ii) All are possible vectors of some vector
 - (1) *Borrelia* spp
 - (a) *burgdorferi*
 - (b) *lonestari*
 - (c) *miyamotoi*
 - (2) *Babesia* spp
 - (a) *canis*
 - (b) *microti*
 - (3) *Ehrlichia* spp

(a) *chaffeensis*

(b) *ewingii*

(c) *canis*

(4) *Rickettsia* spp

(a) *rickettsii*

(b) *parkeri*

(c) *amblyommii*

(d) *monantensis*

(5) *Anaplasma phagocytophilum*

(6) TBEV (powassan virus)

(7) *Francerella tularensis*

d) Conclusions

i) It's complicated

ii) Ticks can be pathogen is buses

iii) Ticks can be tough

iv) The Lone Star tick has now been found as far north as Maine

v) Things are different in the south

(1) Ticks behave differently

(2) Can not use data collected in the north to describe tick behavior in the south

(a) Recent paper on *Ixodes scapularis* - is *I dammini* coming back? (Dr Ginsberg)

(b) Georgia Southern work

(i) 5 distinct types of *I scapularis*

(ii) May be a species complex

(c) Larval *scapularis* prefer to feed on lizards

vi) The epidemiology of rickettsial diseases is in flux

vii) Tick ranges are expanding

e) What about red meat allergy associated with lone star tick feeding?

i) Alpha-GAL allergy

ii) Reaction to antibodies in red meat

iii) Other ticks may be involved

iv) Seems to be a real phenomenon