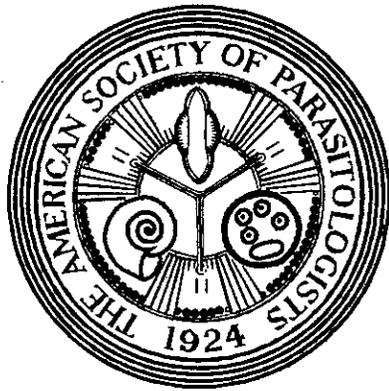
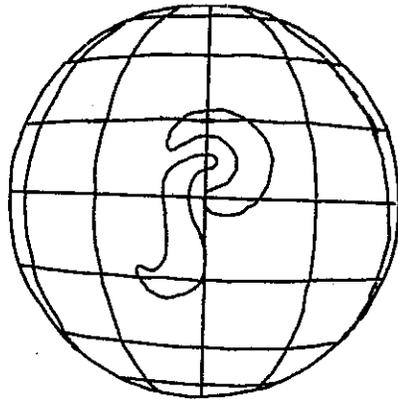


Announcing the Joint Meeting of the



**AMERICAN SOCIETY
of PARASITOLOGISTS**
(75th annual meeting)

&



**SOCIETY of
PROTOZOOLOGISTS**
(53th annual meeting)

Caribe Hilton Hotel, San Juan, Puerto Rico
June 24–28, 2000

INFORMATION and REGISTRATION

San Gerónimo Foyer[†]

Saturday, June 24 th	10:00 a.m.–5:00 p.m.
Sunday, June 25 th	8:00 a.m.–5:00 p.m.
Monday, June 26 th	8:00 a.m.–Noon

[†] Items for the Auction may be delivered to this location anytime before noon on Sunday, June 25th.

10

26 kDa Antigen for Immunodiagnosis of *Taenia solium* Cysticercosis and Its Application in Two Endemic Communities. ROSSANNA RODRIGUEZ-CANUL* and PHILIP S. CRAIG

Immunoblot analysis was used to evaluate antigens in a crude saline extract of *T. solium* metacestodes. Proteins were separated under non-reduced conditions using gradient SDS-PAGE. A group of confirmed neurocysticercosis cases and porcine cysticercosis was tested together with sera from heterologous infection. The test was 100% specific, and above 90%, sensitive for human and porcine cysticercosis. This 26 kDa immunoblot test was used to screen two endemic communities from Mexico and Indonesia, enabling the identification of human and porcine cysticercosis cases. The 26 kDa immunoblot test would be an important tool in the study and transmission of *T. solium*.

11

Serological Diagnosis of *Elaphostrongylus cervi* Infections in Experimentally Infected Elk (*Cervus elaphus canadensis*). OLADELE OGUNREMI*, ALVIN GAJADHAR, BRAD SCANDRETT and STACY TESSARO

Elaphostrongylus cervi (Family Protostrongylidae) or the tissue worm of red deer and elk can cause neurological disease in some other cervids species. A reliable method of diagnosis is not available. In order to develop a serological test, four elk were infected with six (two elk) or 20 (two elk) third-stage larvae (L3) of *E. cervi*. The Baermann technique was performed on feces from infected elk, but no larva were observed throughout the course of infection. At necropsy, one male and one female adult worm were recovered at postmortem of one animal given six L3 at 288 days post-inoculation (dpi), but not from the other animal given 20 L3 at 568 dpi. The experiment was terminated at 71 days (dpi) in one elk infected with six L3 and in another infected with 20 L3. Antibodies to the excretory-secretory (ES) products of the third-stage larvae of *E. cervi* were detected in one of two animals inoculated with six L3 and in both animals given 20 L3. Diagnosis of infection using the Baermann technique is unreliable, probably because of delayed, low or intermittent output of larvae. Sometimes definitive diagnosis can be made at postmortem, but the recovery of adult worms is tedious and often unsuccessful. A

serological test for *E. cervi* appears to be more sensitive than any currently used antemortem or postmortem method for the diagnosis of *E. cervi* infection in elk. (Supported by the Matching Investment Initiative of the Canadian Food Inspection Agency and the Canadian game farming animal industry.)

12

Adequate Infection for Anthelmintic Therapeutic Effectiveness Studies in Cattle. THOMAS LETONJA* and MELANIE BERSON

Effectiveness of a therapeutic drug should be demonstrated in adequate and well-controlled studies. Adequate infection in a study is key for the evaluation of the data and is defined as a certain number of parasites that should be present in the corresponding host to measure the therapeutic effectiveness of the selected dose of the drug. We reviewed several papers published in peer reviewed journals and in the Freedom of Information summaries presenting results of effectiveness studies. The following helminths were considered: *Cooperia* spp. (*C. surnabada*, *C. oncophora*, *C. punctata*, *C. pectinata*), *Trichostrongylus* spp. (*T. colubriformis*, *T. axei*), *Ostertagia* spp. (*O. ostertagi*, *O. lyrata*), *Nematodirus helvetianus*, *Haemonchus placei*, *Oesophagostomum radiatum*, *Trichuris* spp., *Bunostomum phlebotomum*. A total of 296 studies were recorded. Adult and larval stages were considered in the evaluation of dose determination and dose confirmation. Adult infection was evaluated in 250 studies, and 46 included larval stages. We present these data as guidance for the planning and evaluating adequate and well-controlled effectiveness studies for testing anthelmintic compounds.

13

Interspecific Differences in the Occurrence of *Pneumocystis carinii* in Small Mammals in Southern California. JUHA LAAKKONEN*, ROBERT N. FISHER and TED J. CASE

Pneumocystis carinii is assumed to be ubiquitous, but previous studies have shown significant interspecific differences in the occurrence of this opportunistic fungal parasite in small mammals in Europe. We further studied the geographic distribution and occurrence of *P. carinii* in small mammals in various habitats in southern California. As in Europe, *P. carinii* was significantly more common in shrews (*Notiosorex crawfordi*,

Sorex ornatus) than in sympatric rodents (*Microtus californicus*, *Reithrodontomys megalotis*). Among rodents, *P. carinii* was more common in voles of the genus *Microtus* than in other rodents. The reasons for the interspecific differences are not known, but host-specific differences in infectivity and pathogenicity between *P. carinii* isolates may be a contributing factor to the high prevalence of *P. carinii* in shrews. The intensity of infection was similar in all wild animal host species, and low compared to that seen in clinically ill laboratory rats. No difference in the occurrence of *P. carinii* was detected between habitats. Study of *P. carinii* infection in wild animal populations may help to elucidate the life cycle and transmission of this elusive organism. (Supported by Academy of Finland Grant 43542.)

14

Australian Desert Soil Protozoa. S.S. BAMFORTH* and B. ROBINSON

Ecological functioning of arid lands, like all terrestrial ecosystems, depends upon bacterial-protazoan centered nutrient recycling in soil. Plant zonation and stochastic precipitation in the Australian "Outback" make it an excellent ecosystem to contribute to our meagre knowledge of desert soil protist species assemblages and abundances. We collected and analyzed 21 litter and soil samples from under spinfex and chinopod shrubs, "mulga" trees, and bare soils. Amoebae ranged 1,000-75,000/g of soil, and were two orders of magnitude more abundant than ciliates, and both groups were 4-20 times more abundant in soils and litters under plants than in bare soils. *Acanthamoeba* was ubiquitous, with vahlkampfiids, *Platyamoeba* and *Hartmannella* the next three prominent taxa. Ciliates showed the same trend, with fewer than 10 species in bare soils, but 10-22 species in litters and soils under plants. Common species comprized most of the species at sites, but additional hypotrichs were found in chenopod litters. Testacea ranged 900-5,100/g of soil, and were 2-4 times more abundant under plants than in bare soils. Small acrostome genera with fine pseudopodia, *Euglypha*, *Pseudodiffugia*, *Cryptodiffugia* and *Diffugiella*, and the plagiostome *Trinema* furnished most of the species. The patchy protozoan distribution supports the resource island hypothesis that desert plants create heterogeneity in soils by localizing soil fertility under their canopies.

15

A Preliminary Report on Soil Ciliate Biodiversity and Spatial Heterogeneity from a Highly Stratified Sampling Grid. DIMARIS ACOSTA* and DENIS H. LYNN

Diversity and abundance of soil ciliates have been positively correlated with soil nutrient cycles and primary productivity. However, previous samplings of soil habitats that lead to this conclusion often have not considered the spatial correlations between soil ciliate populations. Without considering spatial distribution, one must be cautious to link diversity with ecosystem processes. Our approach was to first explore sampling techniques to estimate diversity using the flooded-Petri dish method. Live counts done on fresh samples were significantly more diverse than replicate 10-week stored samples (paired t-test, $t = 5.33$, $p = 0.001$, $n = 10$). Petri dishes were divided into four quadrants from which water samples were removed; three Chi-square tests showed a significant difference among quadrants ($p < 0.01$, $n = 3$). Following wetting of the soil, live counts were performed at days 2, 4, 7, 14, 18 and 22, and species accumulation curves were plotted for three samples. Ciliate diversity plateaued by day 7; thus, a confident estimate of diversity can be obtained by sampling on days 2, 4 and 7. Diversities were compared between live counts and counts obtained after filter-protargol staining. Stained samples were significantly more diverse than samples from live counts (paired t-test, $t = 3.09$, $p = 0.008$, $n = 13$). A geostatistical program was used to determine the level of spatial dependance and heterogeneity in ciliate diversity through semivariograms derived from two highly stratified 2 x 4 m grids in the west end of Puerto Rico. Both plots revealed a high degree of spatial heterogeneity with spatial dependance (i.e., samples being similar to each other) up to 8 m and 3 m in the serpentine and limestone substrates, respectively. This accords with the degree of vegetation and topographical heterogeneity. There were scattered hot spots in biodiversity, suggesting the need for a directed and standardized sampling design. Perhaps everything is not everywhere, and perhaps the results from "random sampling" obscure significant interactions, making previous generalizations about ecosystem stability and ciliate diversity in temperate and tropical systems hard to interpret.