I am starting to pick up evidence of Wild Boar as hosts of E.g. Studies from Spain, Portugal, Volga Regions. What does this say to us in the context of Bears as hosts. Primary hosts or intermediate hosts?

There is a long standing bastion of evidence that pigs (aka: 4 legged swine as apposed to 2 legged) have and carry Hydatid Cysts.

However, there is evidence and research that contends this Strain although it is contagious to humans is not a significant problem for humans. The reasoning here is that it is not a wide ranging contagious problem for humans as canines have to readily consume swine/bear infected offal and like all other theories this means that the life cycle must provide for canines, that are being infected by swine/bear offal, to drop eggs where swine/bear can ingest them as they eat everything. If this occurs the Life Cycle and the Exposure, Contact and Contracting sequence becomes established.

The research I have seen pretty much affirms that people get the disease from eggs distributed by domestic canines, and the swine strain is mainly maintained by human intervention rather than true wild animal to wild animal connection. It also concentrates on a Swine Hydatid Cyst as a pastoral cycle more than on a sylvatic cycle.

Bear are in the swine family as we know. They eat just about anything including vegetation. The Swine strain is very active in areas where pigs are exposed to canine feces that are infected with Echinococcus eggs. I haven't looked into the specifics in much depth as yet, but it appears all the Echinococcus species, [i.e. granulosus, multilocularis, vogeli, equinus (new), shicius (sp, also new), etc.] can be transmitted by eggs to swine.

The question is what canine is the definitive host and how would it prey on infected swine (bear)?

Here our probable predator is the Wolf, no stretch on this. But the questions is do wolves eat bear such that the bear become the intermediate host for the establishment and maintenance of the Swine Strain's life cycle?

In the areas you cite, the life cycle mechanism appears to be **interfaced** with human carelessness when butchering swine. The carelessness readily results in the viscera of swine being left where canines can get and eat it. However, there is an inherent predator to prey control mechanism with bear and that is wolves tend to avoid a confrontation with them and probably are not true bear killers in the sense they are cervid killers. Too they are not likely to be the first on the scene to consume bear offal.

However because we have a bear season(s), as well as elk, deer, etc., we know that this means hunters (humans) will be leaving bear "guts" all over the area hunted. This could mean that wolves, other wild canines, as well as, domestic dogs can come down with the granulosus.

But does this mean the the bear will then have the swine strain or just the cervid or sheep versions?. Even if bear initially consume the Sheep or the Cervid Strain and through morphological mechanisms they individually or concurrently becomes the Swine Strain, we still come back to the wolf and other canines, bringing the Echinococcus eggs to areas where humans frequent and where they can be exposed to, put into contact with and contract, through egg consumption, the disease.

By the way there is a study from Spain that notes Horses carry the Sheep Strain [calcified usually] and that they also concurrently carry the Equine Strain, which is infectious to man. The question is did the Equine Strain come to exist through a morphological development that started with the Sheep Strain. I appears so and that is how we got initially the Horse Strain.

The bear could add another dimension by expanding, through man's intervention and/or the bear's normal death occurrence means {i.e. old age, fighting, etc.], the methods of maintaining Echnococcus life cycles. But it probably does not add a great deal to tapeworms' growth or to the tapeworm expressing eggs into the environment. Too, it is only minimally likely that the distribution, density, concentration and saturation factors in our specific geographical areas would be enhanced .

Also, bear involvement probably **does not** cause a significant expansion of the life cycle because bear and other

ungulates reside with wild canine predators in the same general areas, and these areas have a relatively fixed wolf population and the Cervid and/or Sheep Strain has already infected nearly all wolves per Idaho F and G Staff. Hence, enhancement would be more like greater tapeworm load per wolf than more infected wolves.

Incidentally, like what is professed about the predatory African Lion, I know of no evidence that says bear become the definitive host for Echinococcus.

The Swine strain if it gets into our domestic pig stock [in our areas] can readily enhance domestic dog infection and thus human exposure. Especially, if we find swine farmers/ranchers killing their animals and leaving the innards in places where domestic dogs [and wild canines] can consume infected organs.

In the Southern tier of the United States, do to their massive wild pig problem, the Swine Strain [pig and bear] can become a disastrous problem. All the elements for establishing and maintaining a Swine (including bear) to Canine Life Cycle with exposure of humans readily exists.

In areas like Texas, Alabama, Florida, etc. Pigs are big time game animals as well as pests, or more appropriately terrorists, that eat and route up everything, including vegetation, all over the place. Free Roaming and wild Dogs hunt and kill wild pigs by themselves and dogs are used constantly by bear/pig hunters. Hence, massive devastating zoonotic disease potential exists.

Regardless, however, the possibility of "**bear** becoming an additive to our canine to ungulate Life Cycle's maintenance" needs some of aour attention; especially because they can pick up eggs on the feet, in there pelts, etc. and distribute Echinococcus eggs, probably more readily than other ungulates and vectors.

Having said this, what is your reaction and feedback.

By the way did Drew go to the Center for Disease Control in Atlanta on his trip to Georgia? If he did you can bet it was to cover "Their Respective Asses" regarding Echinococus granulosus' zoonosis impacts.

Clay