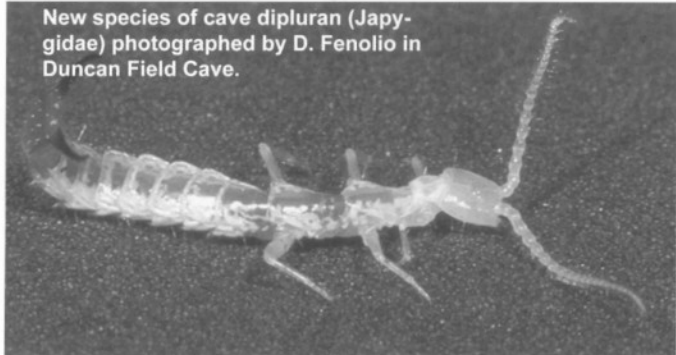


The Duncan Field Cave Complex: Oklahoma's Most Biologically-rich Cave

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New species of cave dipluran (Japygidae) photographed by D. Fenolio in Duncan Field Cave.



The Duncan Field Cave Complex (Adair County, Oklahoma) contains a rich diversity of cave life that is just beginning to be understood. Biological inventories to date have produced a list of 59 animal species that inhabit this ecosystem, including incidental/accidental species as well as 10 species obligate or adapted to cave habitats (troglobites) or to groundwater habitats (stygobites): cave mite and mite sp. #2 (Acari), southern copperhead (*Agkistrodon contortrix contortrix*), jumping bristletail (*Archaeognatha*), cave isopod (*Caecidotea stiladactyla*), ground beetle (*Carabus sylvosus*), cave cricket (*Ceuthophilus gracilipes*), centipede (Chilopoda), Ozark Big-eared Bat (*Corynorhinus townsendii ingens*), cave harvestman (*Crosbyella* sp.), timber rattlesnake (*Crotalus horridus*), wandering spider (*Ctenus* sp.), mosquito (Culicidae), crayfish (decapoda), big brown bat (*Eptesicus fuscus*), dark-sided salamander (*Eurycea longicauda melanopleura*), cave salamander (*E. lucifuga*), graybelly salamander (*E. multiplicata griseogaster*), grotto salamander (*E. spelaea*), fly (Heleomyzidae), compound coil snail (*Helicodiscus parallelus*), tree frog (*Hyla* sp.), shagreen snail (*Inflectarius inflectus*), cave dipluran (Japygidae), eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), sheetweb spider

(Linyphiidae), earthworm (Lumbricidae), wolf spider (Lycosidae), webworm (*Macrocera nobilis*), white-lip globe snail (*Mesodon thyroidus*), cave orb weaver spider (*Meta americana*), gray bat (*Myotis grisescens*), little brown bat (*Myotis lucifugus*), northern long-eared bat (*Myotis septentrionalis*), eastern woodrat (*Neotoma floridana*), evening bat (*Nycticeius humeralis*), harvestman sp. #2 (Opiliones), grasshopper (Orthoptera), cliff swallow (*Petrochelidon pyrrhonota*), Carolina mantleslug (*Philomycus carolinianus*), eastern pipistrelle bat (*Pipistrellus subflavus*), slimy salamander (*Plethodon albagula*), Ozark zigzag salamander (*P. angusticlavius*), northern raccoon (*Procyon lotor*), new species of cave springtail (*Pseudosinella* sp. nov. AB), cave springtail #2 (*P. dubia*), woodlice (Psocoptera), round fungus beetles (*Ptomaphagus cavernicola* and *P. shapardi*), eastern phoebe (*Sayornis phoebe*), dark-winged fungus gnat (Sciaridae), eastern fox squirrel (*Sciurus niger rufiventer*), Alabama cave amphipod (*Stygobromus alabamensis*), Onondaga cave amphipod (*S. onondagaensis*), silverfish (Thysanura), crane fly (Tipulidae), springtail (*Tomocerus* sp.), and Black's cave millipede (*Trigenotyla blacki*).

The Duncan Field Cave Complex is now known as the most biologically-rich cave in Oklahoma, surpassing January-Stansbury Cave with 54 total species and 9 troglobites/stygobites. The Duncan Field Cave Complex is one of the most biologically important caves in the Ozark Plateaus Ecoregion for several reasons. It is exceptionally large (having over 9 miles of mapped passage). It has a variety of habitat and microhabitats, including a perennial subterranean stream with riffles, pools and a spring resurgence, mud flats and drip pools, guano piles and mammal middens and scat, and dolines (sinkholes); dolines and other karst windows allow the accidental introduction of animals and forest litter. It is a relatively pristine ecosystem, and it is protected by gates and by ownership by the U. S. Fish and Wildlife Service.

The Duncan Field Cave Complex is also rich in bats (8 species) and hosts colonies of two endangered bat species. New species of springtails and diplura (Figure 1) await description, and several other species have

not yet been taxonomically determined. Furthermore, an apparent cave salamander / dark-sided salamander hybrid (*Eurycea lucifuga* x *longicauda*) population is present. The study of this system is part of a larger effort to inventory the cave life of the Ozark Plateaus by a multi-agency consortium – the Ozark Subterranean Biodiversity Project (www.naturalinvestigations.com/cave).

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