

REDISCOVERY OF A SPRINGTAIL AND A GRASSHOPPER IN
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Ecosystem management programs of the U.S. Forest Service (Hermann et al., in press) and a cooperative agreement between The Nature Conservancy and the Department of Defense have promoted study of the increasingly rare longleaf pine (*Pinus palustris*) ecosystem (Biondo 1997) and the arthropods inhabiting it. In the Florida Panhandle, two research projects on longleaf pine restoration ecology have led to the rediscovery in Florida of the springtail *Sminthurus floridanus* MacGillivray (Collembola: Sminthuridae) and the grasshopper *Gymnoscirtetes morsei* Hebard (Orthoptera: Acrididae). Both species have been searched for in Florida in recent years without success.

S. floridanus was described from one specimen collected in "Florida" (MacGillivray 1893). This species was known from that single specimen until Snider (1982) redescribed *S. floridanus* from several series collected at the Savannah River Plant, Aiken, South Carolina. These series were swept from roadside grass beneath tall loblolly pines.

In 1995-1997, *S. floridanus* was collected on Eglin Air Force Base (EAFB) in north-west Florida. All specimens were taken in an area subject to frequent fires, characterized by a nearly pure stand of longleaf pine, a sparse hardwood midstory, and a dense groundcover of grasses and forbs, including bluestems (*Andropogon* spp. and *Schizachyrium* spp.), low panic grasses (*Dichantherium* spp.), pineywoods dropseed (*Sporobolus junceus*) and wiregrass (*Aristida beyrichiana*). Collection data are: Florida, Okaloosa Co., Eglin Air Force Base, T1S-R25W-sec. 30, 31-V-1995, 21-IX-1995, 01-VI-1996, 16-VI-1997, D-Vac and sweep net, 70% EtOH, Longleaf Pine Restoration Project, Site 2C-W.

A second series of *S. floridanus* specimens was collected by D-Vac in the Apalachicola National Forest (ANF), Florida. Specimens were also taken from longleaf pine-wiregrass habitats that experience regular fires. Collection data are: Florida, Liberty Co., Apalachicola Nat. For., Hwy 379 NW Sumatra, Compartment 95, 11-VI-1997, 30-X-97; Compartment 100, 30-X-1997; Hwy 85 N of Wilma, Compartment 11, 14-VIII-1997, 30-X-1997.

S. floridanus is a distinctive sminthurid, due to the sharp contrast between the dark blue dorsum and the yellowish venter, plus the acuminate dorsal protuberance anterior of the anal papilla (habitus in Snider [1982: 223] and Borror et al. [1989: 167]). All EAFB and ANF specimens exhibit this dorsal protuberance. Voucher specimens from EAFB and ANF are deposited in the Entomology Museum, Michigan State University (East Lansing) and Florida State Collection of Arthropods (Gainesville).

Gymnoscirtetes morsei Hebard is one of two species in this genus. Both species are found in the southeastern United States and can be recognized by their small size and lack of any trace of wings or wingpads in the adult. *G. morsei* was described from DeFuniak Springs, Florida (Hebard 1918) and has since been found only in the Florida Panhandle between the ANF and Mobile, Alabama, and in some adjacent Alabama counties. Collection records in the Florida State Collection of Arthropods and other institutions, notably the University of Michigan (T. J. Cohn, Museum of Zoology, University of Michigan, personal communication) all date from before the early 1950s.

In 1996, four specimens were collected in June and August on Hurlburt Field, located on 6,634 acres in south Okaloosa County west of Mary Esther and Ft. Walton Beach, Florida. Hurlburt Field contains a variety of habitats, including wet longleaf pine savannah, where the specimens of *G. morsei* were collected. This collection locality was burned in early 1997. In April, 1997, large numbers of *G. morsei* nymphs were observed in the burned area. The grasshopper was very common early in the growing season and became somewhat less abundant as the summer progressed. Voucher adults were first collected during a visit in June, the last adults of the year were seen in late October, and nymphs were collected again in April, 1998. *G. morsei* appears to favor a moist microclimate: grasshoppers jumped up from near the ground to the tops of grasses and low bushes when approached. One female was observed feeding on leaves of gallberry (*Ilex glabra*). Several other adults were confined in plastic bags with various common plants from their groundcover habitat; only gallberry leaves showed any evidence of feeding after several days. Collection records for Hurlburt Field are: Florida, Okaloosa Co., Ft. Walton Beach, Hurlburt Field, 9-VIII-1996; same locality, S of EOD [Explosive Ordinance Disposal], 27-VI-1997, 11-VII-1997, 17-IV-1998.

Another population of *G. morsei* was found in 1997 on Whitmier Island, a wet prairie on the northern border of EAFB. The groundcover habitat where the *G. morsei* were taken was very similar to the Hurlburt Field groundcover layer. Collection records from this locality are: Florida, Santa Rosa Co., Whitmier Island, T1N-R26W-sec. 19, 23-VIII-1997, Eglin AF Base, W side of RR 717, ex wet prairie. Voucher specimens from Hurlburt Field and EAFB are deposited in the Florida State Collection of Arthropods (Gainesville).

Gymnoscirtetes morsei is distinguishable from the more widespread *G. pusilla* Scudder by the external male genitalia (Blatchley 1920); however, descriptions of the aedeagi of the two species have not been published. There is some evidence that *G. morsei* may be conspecific with *G. pusilla* (G. Folkerts, Dept. Zoology and Wildlife, Auburn University, personal communication). Both morphospecies are found most commonly in the herbaceous groundcover under open pine canopy. Moist flatwoods, where pitcher plants grow and where gallberry is present, seem particularly favored by *Gymnoscirtetes*.

Until recently, there has been little study of arthropod communities in fire-maintained longleaf pine habitats (Folkerts et al. 1993). This could be due to an erroneous perception that burned areas have less zoological richness; even entomologists sometimes misunderstood the importance of fire in maintaining the rich biodiversity of longleaf pine ecosystems (cf. Klots 1951: 33). As arthropod faunas of the longleaf pine landscape become better known, discoveries of new species and rediscoveries of rare and uncommonly collected species will become increasingly frequent.

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SUMMARY

Research on Eglin Air Force Base, Hurlburt Field, and the Apalachicola National Forest has led to rediscovery in Florida of the springtail *Sminthurus floridanus* (Collembola: Sminthuridae) and the grasshopper *Gymnosirtetes morsei* (Orthoptera: Acrididae). *S. floridanus* was collected in fire-maintained longleaf pine/wiregrass stands. *G. morsei* was found in wet areas, including longleaf pine savannahs, flatwoods, and prairies.

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