

Colorado Diplopods of Interest

Millipedes of Colorado

Class: Diplopoda

Orders, Families in Colorado:

See Table 1



Figure 1. *Cyndroiulus caeruleocinctus*, a European millipede that is common in many yards and gardens

Description and Distinctive Features: Most millipedes are generally wormlike in body form. Five or six segments are fused to form the head that is marked with a pair of short antennae and jaws designed to chew. The remainder of the body (known as a trunk) is usually cylindrical or slightly flattened, made up of a series of segmented plates. Each of these apparent segments is actually a fused pair of segments, known as a diplosegment. Associated with each diplosegment (after the first four) are two pairs of legs. The name of the class, Diplopoda, means “two foot” and refers to this feature.



Figure 2. A *Polydesmus* species of millipede.

One unusual order of millipedes are the “duff millipedes” (Order Polyxenida). They are also among smallest millipedes, typically only 2-4 mm in length, and have 13 pairs of legs. They have a very bristly body and dense tufts of hairs protrude from the hind end.

Distribution in Colorado: Millipedes of Colorado are poorly known. The most common millipedes noticed in yards and gardens (*Blaniulus guttulatus*, *Cyndroiulus caeruleocinctus*) are European species and

distribution within the state reflect, in part, human transport. Duff millipedes, which likely are native to Colorado, are found in forested areas and live on or under bark.

Millipedes are almost always found in moist environments. Despite the hard body covering, they lack the waxy protective layer of insects and are very sensitive to desiccation. In part to compensate, many millipedes are formidable tunnelers and can find adequate moisture below ground.



Figure 3. Adult and immature stage of a julid millipede, *Cylindroiulus* sp.

most commonly with *Blaniulus guttulatus* (“spotted snake millipede”). The duff millipedes, that feed on fungi and lichens, usually are associated with tree bark.



Figure 4. *Blaniulus guttulatus*, the “spotted snake millipede”



Figure 5. A duff millipede, *Polyxenus* sp.

Life History and Habits: As millipedes develop they not only increase in size but also in both number of segments and number of legs (anamorphic development). Newly hatched millipedes usually have only 3 pairs of legs and add more with each molt. Commonly encountered millipedes usually have molted a great many times, over the course of 2-5 years, before they reach the ultimate adult form.

Millipede mating is indirect. Males produce packets of sperm (spermatophores) that they then transfer to specially modified legs on the seventh segment, known as gonopods. The male then passes the spermatophore to the female. Eggs are laid in areas of damp soil, sometimes within small cavity nests constructed by the female.

Almost all millipedes are scavengers, feeding primarily on decaying plant material. Occasionally, some feed on soft plants, sometimes causing minor plant damage to gardens as they chew seedlings or ripening fruit lying on the soil. This habit occurs

Although slow moving and lacking either a sting or powerful jaws, millipedes are by no means defenseless. When disturbed most will roll or coil, protecting the vulnerable legs and underbody with their more heavily armored body. Other defenses are used by the polyxenid millipedes that are covered with bristles that readily dislodge and entangle ants or other potential predators. Millipedes also use a variety of chemical defenses. Many have special repugnatorial glands that produce ill-smelling and/or caustic fluids that ooze through openings along the side. These fluids, which are mixtures of hydrocyanic acid, iodine and various quinones, can stain and irritate skin. Insects confined with a millipede may be killed by these substances.

Table 1. A preliminary list of millipedes known to occur in Colorado

| Order > Family > Species | Confirmed county records |
|---|--------------------------|
| <hr/> | |
| Polyxenida | |
| Polyxenidae | |
| <i>Polyxenus ?lagurus</i> (L.) | Larimer, El Paso |
| Polydesmida | |
| Polydesmidae | |
| <i>Polydesmus</i> sp. | Larimer |
| Julida | |
| Blaniulidae | |
| <i>Blaniulus guttulatus</i> (F.) | Larimer |
| <i>Choneiulus palmatus</i> (Nemec) | Prowers |
| <i>Proteroiulus fuscus</i> Am Stein | Prowers |
| Julidae | |
| <i>Cylindroiulus</i> sp. | Larimer |
| <i>Cylindroiulus caeruleocinctus</i> (Wood) | Larimer, Prowers |
| Parajulidae | |
| <i>Oriulus venustus</i> (Wood) | Prowers |
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