

## Phylum Onychophora (Velvet Worms)

70 species

an ancient phylum

→ has changed little since the Cambrian (560MY)

believed to be a phylum closely related to arthropods

have chitin cuticle on outside of body  
antenna  
mandibles  
tracheae  
similar nervous system  
haemocoel  
annelid like simple eye at base of antennae

wormlike segmented body; 1.4-15 cm (to 6") long

→ looks like slugs with legs

thought to be a mollusc when first discovered in 1826

blue, green, orange or black

originally a **marine** animal (Burgess Shale)

today all are **terrestrial**

found in rainforests and semitropical habitats

live in crevices and under logs

Animals: Phylum Onychophora; Ziser Lecture Notes, 2009

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→ can conform to fit in small places

mostly **nocturnal**

→ tend to avoid light

defend themselves by squirting sticky liquid up to 30"

### **Body Form**

long cylindrical segmented, wormlike body

entire body is covered by bumps (=tubercles) which are covered by tiny scales

→ giving the body a velvet appearance

have 14-23 pairs of stubby **legs**

each leg has a pair of **claws**

anterior end with pair of **antennae** and ventral **mouth**

### **Body Wall**

a. body covered by thin and flexible **cuticle**

same layers as those found in arthropods

b. **epidermis** secretes cuticle

c. beneath epidermis are 3 layers of smooth, annelid-like **muscle**

Animals: Phylum Onychophora; Ziser Lecture Notes, 2009

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muscle unstriated → contract and move slowly

d. body cavity a true fluid-filled **coelom**

### **Movement**

fluid filled coelom is used as **hydrostatic skeleton**

onychophorans crawl slowly on peglike legs

### **Feeding & Digestion**

well developed digestive system

mouth with a pair of long claw-like **mandibles**

most species are predaceous

→ feed on snails insects and worms

have slime glands that shoot milky fluid that quickly congeals into slime

can shoot slime up to 30"

once captured they secrete enzymes (salivary secretions) into prey to partially digest it before eating

### **Respiration**

Animals: Phylum Onychophora; Ziser Lecture Notes, 2009

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arthropod like **tracheal system** of tubes opening to the outside by **spiracles**

### **Circulation**

have arthropod like **haemocoel** with open circulatory system and dorsal tubular **heart**

### **Excretion**

each segment contains a pair of **nephridia** similar to those in annelids

### **Nervous System**

similar to that in annelids and arthropods

small annelid-like eye at base of each antenna

poor vision

### **Reproduction & Development**

all are dioecious

sperm packet is deposited on female

lay eggs or bear live young (ovoviviparous)

Animals: Phylum Onychophora; Ziser Lecture Notes, 2009

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