**Paederus Beetles**

**Q. What are **Paederus** beetles?**

A. Beetles in the genus **Paederus** are insects that belong to the rove beetle family Staphylinidae, under the order Coleoptera. Adult **Paederus** beetles are predators of other insects and are frequently encountered around light sources on military bases in the Middle East region. **Paederus** beetles do not bite or sting but their blood, called hemolymph, contains a strong chemical called pederin that can cause skin and eye irritations.

**Q. What do **Paederus** beetles look like and how long do they live?**

A. **Paederus** beetles are small, soft-bodied and are roughly 1 cm (¼ to ⅜ inch) in length. They are dark orange in color with their head, front wings (elytra) and the tip of their abdomen colored black. Their short, hardened front wings have a blue/green iridescent sheen to them when viewed under higher magnification. Their delicate hind wings can be extended from underneath their front wings and be used for flight. Adult beetles may live for several months and produce two or more generations per year.

**Q. Why should I be concerned about **Paederus** beetles?**

A. **Paederus** beetles are a concern because they can release a toxin called pederin when they are crushed against the skin. Pederin can cause severe dermatitis and blisters that may result in lost duty time. Symptoms have often been confused with the effects of blister beetle cantharidin, poisonous plant sap, urticating caterpillars and chemical weapons. If not washed, contaminated hands may spread the toxin to other parts of the body. Intense pain and temporary blindness has been reported when pederin is introduced into the eyes.

**Effects of Pederin.** When **Paederus** beetles are crushed against the skin, they release a toxin called pederin. There may be little to no effects when initially exposed to pederin. Acute dermatitis, inflammation and a reddish rash appears 12-36 hours after exposure (see above photos). The rashes then develop into blister-like lesions which dry out to become crusted and scaly within a week. The rashes have been known to completely heal within two to three weeks. The most commonly affected body parts include the face, neck, shoulders, arms and area around the waist. Intense pain and temporary blindness has been reported when pederin is introduced into the eyes.

**Q. What should I do if I see **Paederus** beetles on my clothing or equipment?**

A. Gently shake or brush the beetles off with something other than your hands. Avoid the temptation to crush any **Paederus** beetles to prevent releasing the toxin pederin on the skin.

**Q. What should I do if I accidentally crush a **Paederus** beetle against my skin?**

A. If a **Paederus** beetle is accidentally crushed against the skin, immediately wash the affected area with soap and water. Pederin slowly penetrates the skin. Washing shortly after exposure will remove much of the toxin before it has time to harm the skin. The skin reaction to pederin is delayed and may take between 12 to 36 hours to occur after the initial exposure. Contact with pederin can cause dermatitis followed by inflammation of the area into a reddish rash and eventually blister-like lesions on the skin. The most commonly affected areas are exposed parts of the body including the face, neck, shoulders, arms and the area around the waist.
Q. How are the effects of pederin treated?

A. Contact local medical personnel for treatment. Treatment recommendations may include the use of cold, wet compresses, followed by the application of calamine lotions or topical corticosteroids. Antibiotics may be necessary if the blisters become secondarily infected. In a few instances, a permanent change in skin pigmentation has been observed at the affected area. In most cases, the affected area completely heals within two to three weeks without any long-term consequences.

Q. Where do Paederus beetles breed?

A. The immature stages of Paederus beetles develop in moist areas such as marshes, irrigated croplands and wetland areas surrounding freshwater. The larvae usually feed on the algae, small insects and decaying plant and animal material found in these habitats. The adults are predators of other insects and are often found during the daytime searching for prey or resting on vegetation and structures around their breeding site. At night, light towers and other bright light sources can attract the adult beetles from habitats that are miles away. Paederus beetles have been known to fly in large numbers on warm nights, particularly after heavy rains or floods.

Q. What can I do if I am faced with a heavy infestation of Paederus beetles?

A. Move away from areas of high rove beetle prevalence and avoid standing directly underneath or next to bright light sources. Mosquito light traps and sticky traps may capture some of the beetles, but are not effective in removing large numbers from the area, especially when located close to competing light sources. The application of deltamethrin dust to vegetation may help to reduce beetle numbers in small areas. Pesticide application to breeding sites outside the military compound are usually impractical due to the number of marshy areas within the flight range (several miles) of the adult beetles. The use of light covers or shields in combination with reducing the intensity and number of light sources present may help to ultimately reduce the numbers of beetles attracted.

References:

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