Anolis aeneus (Bronze Anole)

Family: Polychrotidae (Anoles)
Order: Squamata (Lizards and Snakes)
Class: Reptilia (Reptiles)

Fig. 1. Bronze anole, *Anolis aeneus*.

[http://www.trinidad-tobagoherps.org/Anolisaeneus.htm, downloaded 20 October 2012]

TRAITS. *Anolis aeneus* can be distinguished by the blue-green ring around its eyes (Murphy 2011). The species is a medium sized anole, the length of males from the tip of the nose to the anus is 77 mm and females 55 mm (John et al. 2012). They have many lamellae (flaps) on their subdigital toepads. The dewlap (throat fan) extends from underneath their necks and has a pale gray, green or white colour, yellow or orange spots may also be present at the front edge of the dewlap (John et al. 2012). Colour: The dorsal side of the males may be grey, greyish brown, brown or a dull green, a bronze sheen is at times present, light or dark spots may be present in a crosswise pattern. The underside has a dull grey colour. The females may be grey or brown the mid-dorsal region can include a dark single stripe or a transverse stripe, juveniles are dark grey or brown (John et al. 2012).

ECOLOGY. This species is endemic to Grenada and has been introduced to Trinidad and Tobago (Wikipedia 2012). It is an arboreal species and can therefore be found mostly on the trunk and branches of shaded trees, it is also populated in urban areas and can be observed on walls, railings and fences (Murphy 2011) it feeds on live insects and invertebrates such as crickets, roaches and spiders. The number of anoles present correlates to the complexity of the vegetation in terms of the type and height of the vegetation present (Stamps et al. 1981). The bronze anole is usually observed perched on the trunk of trees but at times can be seen on the ground in bushes or high in the trees, male spacing patterns also vary seasonally, but the exact form of the variation depends on the habitat, adults tend to select habitats based on the availability of food and mates (Stamps et al. 1981).

SOCIAL ORGANIZATION. Arboreal, territorial, diurnal. The specific type of social system displayed varies with the habitat. The territory is related to the size of the lizard in that the larger the male the greater region of the territory can be protected and patrolled. The territory of the female

is usually smaller and in close proximity to that of the male who may spend most of his time in the territory of a specific female (Stamps, 1973). Females use multiple head bobbing patterns to indicate hierarchy and a head jerk-bob pattern to indicate ownership of a territory (Stamps, 1973). Fights may occur when patches of an empty habitat is taken, the purpose of these fights may be for the development of relationships between inhabitants that are situated close to each other. *Anolis aeneus* strongly defends their territory when it is of good quality (Stamps, 1996).

ACTIVITY. Bronze anoles are predominately diurnal that is they are active during the daytime and sleep during the night, the anoles use the day to mainly forage. This behaviour can deviate slightly during the mating season when more time goes into interactions such as courting by the males (Stamps, 1973). The bronze anole can be seen running on the walls, bark or branches of trees as well in the bushes during the day. At night the lizard can be seen sleeping whilst holding onto the ends of branches or leaves where they cannot be pursued by predators (White & Hailey, 2006) (Fig. 2). The species may also be observed sleeping in various locations around homes.

FORAGING BEHAVIOUR. A survey posture is observed in *Anolis aeneus*, it spends a great deal of time in this downward position on the bark of trees or branches (Fig. 3). They are hardly ever terrestrial (on the ground) and thus display this behaviour for long periods to seek out prey such as insects below (Stamps, 1997). This behaviour also allows the lizard to visualize potential predators. If a prey is seen the lizard races to the ground captures and secures it then runs up to a high branch where it then eats. This species is also known to jump from one place to the next to capture prey. *Anolis aeneus* may show pollinating behaviour since they have been observed to lick the nectar of *Charianthus grenadensis* and *Margravia umbellata* on the island of Grenada (Timmerman et al. 2008). The lizard was observed to go to the plant and slide its head into the opening of the flowers and lick the nectar, since the head and back touched the anther and stigma of the flower whilst they were feeding on the nectar they act as pollinators (Timmerman et al. 2008).

COMMUNICATION. *Anolis aeneus* has specific innate visual signals; the communication involves variations in colour and actions such as bobbing of the head and using the dewlap. The dewlap is used by males to communicate with females during the mating season (Losos, 2009). Displaying the dewlap may also be used in disputes between males for competition of territory or mates. The head bobbing may be carried out when threatened or by both genders to convey information about the reproductive status (Losos, 2009). Juveniles may also show these behaviors such as head bobbing although it would not function as a technique for courtship since they are immature (Dugatkin, 2001). The response of a territorial male in the *Anolis aeneus* species to another male in his territory is accompanied by a series of head bobs; the fan, jerkbob , gorged throat, multibob and fanbob (Stamps & Barlow 1973). The fanbob is unique to the species and is accompanied by the displaying of the dewlap; this is the usual manifestation when confronting an intruder the multibob are observed when there is nervousness (Stamps & Barlow 1973). The jerkbob occurs before the fanbob and is used as a preliminary bob pattern when the territory is being publicized or advertised, the gorge throat is observed when the lizard is threatened; the fan is used when the action of the fanbob is prevented (Stamps & Barlow, 1973).

SEXUAL BEHAVIOUR. The bronze anole is said to be polygynous that is it conforms to a mating system where one male has multiple mating partners, this type of pattern of mating is common in large populations whereby they seek mates within their region or territory (Stamps

1973). The females are not known to be polyandrous one female with multiple mating partners) or promiscuous, if a female mates with a different male it's usually due to the intrusion of this male into the territory. The sexual exhibition of the bronze anole is particular in that the mating partners exist in the same territory (Stamps, 1973). To attract potential mates the male displays an up and down head bobbing action and stretches their dewlaps (Stamps & Barlow 1973). The male positions his tail below the body of the female and then climbs onto her back, the males reproductive organ inserts into the female reproductive organ, the mating process last for a period of 2-3 minutes. The males defend their territory and their partners (Stamps & Barlow 1973). The females tend to mate in areas that are covered and not exposed to potential predators. After breeding the *Anolis aeneus* abandons the hatch site (Dugatkin, 2001).

JUVENILE BEHAVIOUR. The juveniles of *Anolis aeneus* are hatched from eggs which the female lays one at a time. Juveniles and hatchlings of *Anolis aeneus* display spatial and aggressive behaviour, both male and female juveniles show these behaviour (Stamps et al. 1981). The hatchlings and juveniles dwell in small home ranges and territories near the ground; they tend to aggressively defend their territories. The juvenile are more aggressive than adults as fighting is occasionally observed, they may exchange a series of displays such as the head bobbing, tail raising and dewlap extension, eventually the two lizards make contact with each other by the jaws and engage in pounding each other against a tree branch or some other substrate (Dugatkin, 2001).

ANTIPREDATOR BEHAVIOUR. If *Anolis aeneus* is approached by a predator it runs up the tree or goes into hiding if it is on the ground or perched on a tree trunk. The size of the predator determines the response of the lizard.

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Fig.2. *Anolis aeneus* sleeping on a window bar.

[http://www.ahailey.f9.co.uk/anolis.htm, downloaded 2 November 2012]

Fig.3. *Anolis aeneus* carrying out the survey posture on wall.

[http://reptile-database.reptarium.cz/species?genus=Anolis&species=aeneus htm, downloaded 2 November 2012]