

VETERINARY INVESTIGATION INTO RADIOGRAPHIC SEXING AND BLOOD PARAMETERS OF GILA MONSTERS (*HELODERMA SUSPECTUM*)

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Heloderma suspectum (Gila Monster) are one of only two venomous species of lizard, the other being *Heloderma horridum* (beaded lizard). There are two sub species of Gila Monsters, *Heloderma suspectum suspectum* and *Heloderma suspectum cinctum*. They are found ranging between northern Mexico and south-western USA. Unlike species of venomous snake each of the teeth carries a small groove aiding the animal to administer the venom. This is secreted from adapted salivary glands in the lower jaw into the mouth and administered to the prey through the animal's bite. The venom though not fatal can cause pain, swelling, drop in blood pressure, vomiting, weakness and perspiration. They warn potential predators of the dangers they present by their vivid black and orange markings. Despite their striking coloration, they are secretive and rarely seen, spending much of the time in their burrows. These are either dug by themselves or more often acquired from some hapless small mammal. Though outwardly they appear sluggish in nature when roused they can whip around very quickly and should therefore be handled with extreme caution. Gila Monsters have a preferred body temperature of between 28°C and 30°C. In the wild they survive the much colder winter months by hibernation. Eggs are their preferred food but they will take small mammals, birds and reptiles.

To know when an animal is sick a clinician must first know what is normal. This seems obvious but what is normal for one species may be very abnormal for a different species. This has been proved in mammals and when confronted with about 3,000 species of reptiles it is daunting to think that comparatively little is known about most of these species. Most of the readily available books addressing reptile medicine do just that; group all these species under the one title "Reptiles" elaborating occasionally on specific conditions of commonly kept species. This is not a criticism of these texts but more of the amount of research being conducted to increase our knowledge. It is therefore important to gain as much information about individual species as possible. A year and a half ago myself and Mr. Divers were given the opportunity to take a sample of blood from 8 adult Gila Monsters as part of a health screen. With the financial support of the British Herpetological Society Captive Breeding Committee, the blood was analysed by Grange Laboratories to measure haematological (the red and white cells in the blood) and biochemical (a range of tests that looks at organ function and damage) parameters. Blood tests are a vital aid to veterinary surgeons pursuing a diagnosis, but in order to be able to interpret the results it is vital that the normal species-specific blood ranges are known. As Gila Monsters are now rare in the wild and rarely seen (added to CITES appendix II in 1975) there is little published information on their blood values. While the

study group is too small to give definitive ranges, the paper does aim to give an idea of what normal blood parameters of this species are likely to be. Surprisingly some of the parameters had very different normal levels to those found in other species of lizards.

The second part of the study was to investigate the possibility of sexing monomorphic lizards by pelvis radiography. A system of gender determination using pelvic radiography had been previously advocated. However, our investigations failed to demonstrate any significant differences between males and females and therefore alternative methods of sexing including probing, hemipenal eversion, ultrasonography and endoscopy may be more accurate.

It is hoped that the blood parameter information will prove useful to all veterinarians involved with these fascinating animals and to this end publication in the veterinary press is envisaged. The authors would like to express their gratitude to the BHS Captive Breeding Committee for their continued support of captive management, propagation and maintenance of health of reptiles, because without their help such basic and relatively inexpensive information could not be obtained.