

## Melanoma in *Heloderma suspectum* Cope

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In August of 1945 two gila monsters were received from Arizona expressed in a wooden box 24" x 16" x 12". The animals have been living in this same container continuously since that time, except for the last few months, when one of them was removed because of surgery on the other. The animal under discussion measures 497 mm from tip to tip and 335 mm from tip of nose to vent. This is almost the exact size that it was 23 years ago.

Approximately once a week the specimen has received one raw egg or some newly hatched English sparrows or some newly born mice and rats.

In 1963 a projection began to show on the dorsal surface at the base of the tail. By 1968 this tumor was approximately 51 mm in width, 35 mm in length from front to back, and 20 mm in depth. In order to try to prevent further migration of the growth, surgery was performed on the morning of March 9, 1968, by a competent Muncie surgeon. Since the growth was of the type that had migrated through the tissue, the entire dorsal surface was removed, including the fascia. The specimen was immobilized for the surgery.

The tumor was taken to the Ball Memorial Hospital Pathology Laboratories. Macroscopic and microscopic studies were made of the tissues and cells. Sections were made and stained in order to make cellular studies, and malignancy was determined. Kodachrome 35 mm slides were made of the gross structure and microscopic structure. Kodachrome views of the incision were made from time to time.

Dr. Montgomery and Dr. Branam point out that "The tumor has no particular arrangement and occurs simply in multiple nodules separated from each other by bands of connective tissue. Here and there, there are hyalinized fibrous areas intimately associated with some tumor cells. The individual cells are elliptical-oval or spindle shaped. They have a relatively large amount of brownish pigment in their cytoplasm, and inspection by oil power magnification revealed that many contain very large nuclei as compared to the nuclei of the normal pigment-bearing cells in the epidermis and dermis, and revealed that these nuclei contain increased amounts of chromatin material and exhibit an irregular beading of the inner surface of the nuclear membrane, and considerable variation in their configuration. These are features of malignant cells, usually. On the other hand careful inspection of many fields shows no mitotic figures.

"This particular lesion was called a melanoma in the first analysis because it is a neoplastic growth of nevus cells producing pigment, that exhibits abnormal cells with abnormal nuclei, and demonstrates invasion. Since the lesion was large it was impossible to embed all of the material,

and it was assumed that there must be a junctional component somewhere along the line. However, this has not proven to be the case, and for this reason the lesion might best be called a cellular blue nevus, with cytologic features suggesting malignancy." The tumor and microscopic sections are on file at the Ball Memorial Hospital laboratory.

Contact had been made with Dr. Herbert L. Stahnke, Director of the Poisonous Animals Research Laboratory at Arizona State University at Tempe, Arizona, who is a specialist in working with gila monsters and scorpions, to see whether there was any information he could give as to anesthesia and post-operative treatment. Dr. Stahnke had used barbiturates, injecting approximately  $\frac{1}{4}$  cc. every 15 to 20 minutes. He had also used fluothane in small amounts, watching the animal very carefully and removing it from the gas chamber upon loss of equilibrium.

Dr. Sherman Minton, Professor of Bacteriology at Indiana University Medical School and an authority on reptiles, was also interviewed and mentioned the use of chilling at 5° centigrade for one or two hours which he had used on cobras, and then being able to work five or ten minutes before the specimen would become active. Dr. Minton mentioned that chloroform had not been satisfactory with the reptiles, but that he is trying fluothane with success.

Two days after surgery the animal was offered a raw egg and ate it. From that time on a raw egg was broken into a culture dish and fed to the specimen approximately once a week. No healing seemed to take place for some weeks.

During the last part of April it was suggested by Dr. Minton that heat be added to the extent of keeping the temperature pretty close to 80°. This has been done and a scab has formed and come off. On May 22 three drops of "mycolog" ointment were smeared over the incision. This was at the recommendation of a local veterinarian and has served as a control for fungus and bacterial growth.

Feeding and "mycolog" treatment are continuing and new tissue is forming. Shedding has taken place over the entire animal. The surgeon believes this increased activity to be due to the stimulus from the replacement of tissue over the incision.

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