

Tribute **Arthur Mervin Greenhall (1911-1998)**

Arthur Greenhall was born on 6 August 1911 in New York City. From an early age he was attracted to animals and kept many of them as pets, especially snakes. At George Washington High School in New York there was no course in zoology when he first arrived there, so he campaigned for one and eventually enlisted 24 other students, the minimum number required for the school to provide the course. He became a regular visitor to the Bronx Zoo where Raymond Ditmars was Curator of Reptiles and Mammals. Having been granted an audience with Ditmars he began doing volunteer work at the zoo, and Ditmars became a foster father to the boy who had lost his parents at the age of three.

After leaving high school in 1930 he entered the University of Michigan and graduated with a B.A. in 1934 and an M.S. in 1935. During this time he spent his summers in the Caribbean collecting animals and doing studies relevant to his course at the university.

In 1932 while on board a vessel off the coast of Cuba, Arthur first heard about Trinidad when he met a gentleman by the name of Sullivan Dillon who was from Tobago. Sullivan's lively enthusiasm about Trinidad, its varied wildlife habitats, and profusion of flora and fauna, impressed Arthur. Hence the seeds were planted in Arthur's mind for Trinidad being a possible site for future collections and study. Arthur was in Cuba collecting reptiles for the Bronx Zoo and the American Museum of Natural History when political and civil events there forced him to leave for Costa Rica and Panama.

In 1933, while on a return visit to Panama, he became interested in vampire bats and returned to the Bronx Zoo with a pregnant vampire, the first ever to be exhibited alive. The vampire and her new born baby caught the attention of many professionals and amateurs alike. It is doubtful that Arthur realized how deeply this successful birth would, in turn, generate a new focus and direction in his own life.

In 1934, he finally arrived in Trinidad to collect fer-de-lance and bushmaster snakes, known locally as 'mapepires', and, if possible, to further study vampire

bats. Arthur described Trinidad at that time as "a sleepy British colony where white linen suits and pith helmets were in fashion." He met Ludolf Wehekind and F.W. Urich of the Field Naturalists' Club who informed him of plans for a zoo to be located in the Emperor Valley which was part of the Royal Botanical Gardens. He could hardly believe his ears when Wehekind, along with Urich and J.L. Pawan, told him that he had arrived at the height of a paralytic rabies outbreak transmitted by vampire bats. It transpired that Trinidad researchers had not heard of the vampire bat work done in Panama, and Panama had no knowledge about the vampire bat problems in Trinidad.

Arthur, together with R.L. Ditmars of the Bronx Zoo, and a reporter from the New York Sun, collected 'mapepires' and vampire bats. Arthur was the first person to photograph a vampire bat feeding on a victim, a farmer's goat. In Arthur's own words: "By far the most fascinating place for bats is the small island of Trinidad which has the largest number of bat species, about 65 including the vampires *Desmodus* sp. and *Diaemus* sp. Trinidad is famous for its vampire bat rabies outbreak from 1925 to 1939. Despite the loss of thousands of cattle and 89 human deaths, people considered themselves among the elite if they were bitten by a vampire bat while spending the weekend 'down the islands' on the resorts of Gasparee and Monos." With reference to Carnival and the awareness of Trinidadian masqueraders to their famous bat population, Arthur had this to say: "In the early 1920's bat bands became prominent. There were bats of many colours with wings that flapped. Authentic bats (costumes) often showed sufficient detail to be identifiable as to species. If the bat rolled on skates it was called a fancy bat!"

From 1942 to 1947 when he was Director of the Portland Zoo in Oregon, he assisted Wehekind and the Zoological Society of Trinidad and Tobago in drafting plans for the Emperor Valley Zoo. This consultation continued from 1947 to 1953 when he was the General Curator of the Detroit Zoo and Belle Isle

Aquarium. Wehekind, then president of the Trinidad Field Naturalists' Club, arranged that Arthur become curator of the Royal Victoria Institute Museum. He arrived to take up this post in September 1953.

In 1954 Arthur was appointed first director of the newly formed Emperor Valley Zoo, became Government Zoologist in charge of the bat rabies programme (a second outbreak flared in 1954), and was appointed consultant mammologist at the Trinidad Regional Virus Laboratory of the Rockefeller Foundation. He held these positions until 1963.

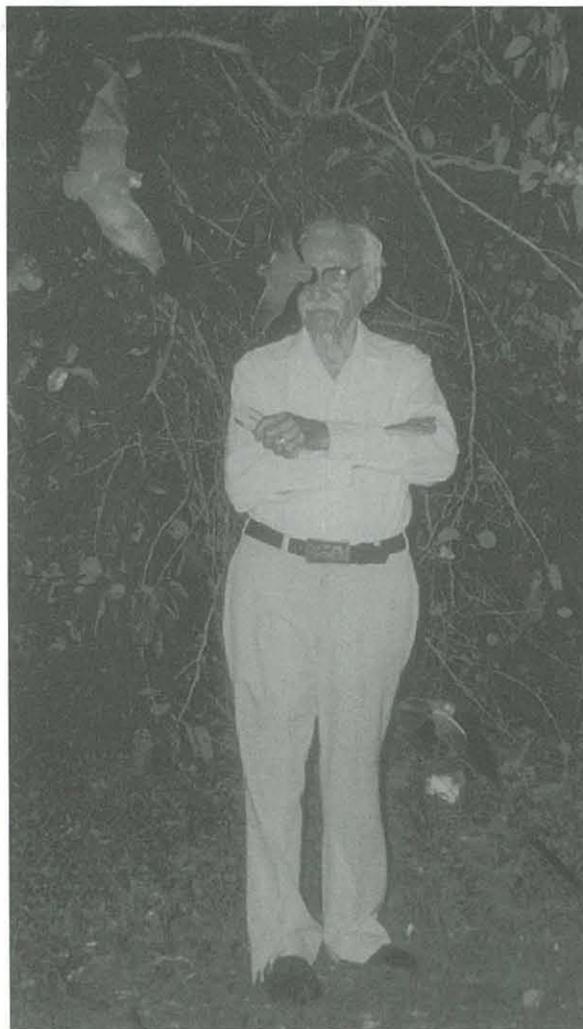
During this period Arthur directed bat crews who collected these flying mammals from every corner of the island. One new species discovered by him, the Trinidadian Dog-faced bat (*Molossops greenhalli*) was named after Arthur, ensuring an everlasting link between the name Greenhall and Trinidad's natural environment.

The museum and the zoo matured through these years, the latter eventually requiring a full-time director. Arthur's work on bats in general was comprehensive, and he published his findings, thus increasing the known bat fauna in Trinidad and Tobago from 35 to 65 species. These comprise mainly insectivore and fruit-eating bats. He also observed a few species that included nectar in their diet, hovering at flowers like nocturnal hummingbirds. There are omnivores (*Phyllostomus* sp.), mixing small mammals and birds with their fruit diet, and there are carnivores, one species (*Vampyrum* sp.) feeding on birds and smaller mammals including other bats, while another (*Trachops* sp.) dines on lizards and frogs. There is even a species (*Noctilio* sp.) with a diet that is exclusively fish.

With Trinidad and Tobago's independence in 1962, Arthur thought that it would be better for him to leave these shores so that the posts he held might be taken up by local people. After departing from Trinidad he

went to the National Museum of Natural History in Washington, D.C. as Chief of the Bird and Mammal Laboratories, U.S. Fish and Wildlife Service, where he continued his studies on bats. After four years as bat zoologist to FAO from 1968 to 1972 he returned to the Fish and Wildlife Service and stayed there until his retirement in 1988. It seems that he had intended to return to Trinidad after retirement but this did not happen for reasons we do not know.

During all this time Arthur published many papers, large and small. For us here in Trinidad and Tobago,



the most important is his treatise with George Goodwin entitled "A Review of the Bats of Trinidad and Tobago: Descriptions, Rabies Infection and Ecology." For nearly forty years this has been the definitive work on the bats of our country, and there is no successor in sight. Arthur, however, did not neglect much homelier topics. Thus, he described in a short paper entitled 'A Bamboo Mongoose Trap', the trap used by our crab hunters, adapted as one for trapping mongooses, and he wrote several others on the control of house bats, and bats in agriculture. Throughout his life he seems to have been fascinated by vampire bats and the culmination of this interest came in 1988 with the publication of 'Natural History of Vampire Bats' which he edited with Uwe Schmidt and to which he contributed a paper on feed-

ing behaviour.

Arthur loved Trinidad; of this there can be no doubt. He loved our forests, our hills, our beaches, our bat caves, our people, our culture, carnival and calypsoes. He delighted in the imagination with which bats were portrayed in carnival bands. In everything he was gentle and gentlemanly. He never quarrelled; he spoke softly; he approached every situation calmly and logically. For all that, he knew how to manoeuvre himself through the intricacies of government departments,

both here and in the United States, and in the end he usually got what he could so clearly see was right.

In 1942 he married Elizabeth Rusk Jones and she bore him two children, Alice and Paul. The family arrived in Trinidad in September 1953 to a very different country from the one Arthur encountered in 1934. The country was no longer sleepy; it was restless; a world war had intervened. Political changes were coming; a West Indian Federation was contemplated and later abandoned. Without ever intruding into our political affairs both Arthur and Elizabeth were caught up in the excitement and drama of the emergence of a new nation. They led a full life in our society. When the Trinidad Field Naturalists' Club was revived in 1954 they both joined, and in the same

year they were both made honorary life members.

When Arthur left Trinidad in 1963 he took with him very fond memories of the country's forests and wildlife, its people and culture. He described his experiences here as some of the most influential and emotionally rewarding of his life.

Arthur and Elizabeth were the perfect couple. They not only loved one another but helped each other in everything. Elizabeth read in draft all of Arthur's publications and contributed to their final form. He in turn took an interest in her occupations and helped her achieve her goals. Such love is rare indeed. It was an inspiration to all of us who knew them.

Geoffrey Gomes and Victor C. Quesnel