

Letter to the *Journal*

Ogden Frazier's Fundus Photography of Wild Arctic Mammals

How would you like to look a 600-lb. grizzly bear in the eye, from only a few inches away, and photograph his fundus? Well, Ogden (Oggie) Frazier not only did that, but also photographed polar bears, black bears, coyotes, wolves and other wild mammals above the Arctic Circle—all in the name of science. Oggie made four trips, in 1966 and 1967, as a member of a team studying changes in the physiology of Arctic animals from the cold and continuous darkness of winter to the warmth and continuous light of summer.

Dr. G. Edgar Folk, Jr., a specialist in Environmental Physiology of the Medical Faculty at the University of Iowa, Iowa City, was sponsored in this research project by the University of Iowa, the University of Alaska, the National Science Foundation and the Office of Naval Research. In 1965, he enlisted the help of his colleague, Dr. Ralph G. Janes of the Anatomy Department at Iowa, to investigate through fundus photography if changes in vessels or pigment of the fundus occurred with changes in seasons.

The Department of Ophthalmology at Iowa owned a handheld Kowa fundus camera that Ogden used at the bedsides of infants and bedridden adults. Ogden taught Dr. Janes how to use the camera, and Dr. Janes made his first trip to Alaska. Unhappily, Dr. Janes died a month after his return to Iowa City and before the results of his photography were known. The slides were never found.

Ogden volunteered to carry on the study, and six months later he was on his way. He made a total of four trips to Alaska in February and July of 1966 and in February and June of 1967. Dr. Folk traveled with him on three of those and, on one of the three trips, the doctor's wife, Mary, accompanied them. Ogden was given a G.S. 13 classification, which is equivalent to Colonel in the U.S. Army, to gain him access to otherwise

limited areas in order to carry on the project.

Ogden took fundus photographs in Anchorage, Fairbanks, and Point Barrow of a wide variety of wild animals, including porcupine, marmot, wolf, black bear, grizzly bear, brown bear, polar bear, red fox, arctic fox, lynx, wolverine, vole and one cross between a German shepherd and a wolf (Fig 1).

The wild animals were captured, confined, and immobilized for the photography sessions. A relatively new drug, Sernylan, that had been used for pregnant women to ease delivery, was administered with a dart gun. This drug was provided to Dr. Folk by the manufacturer to test on a variety of mammals. The drug was to produce muscle paralysis, although the animal might remain partially awake. Because this was to be a new use for the drug, a Navy enlisted man at one of the naval stations was assigned to help Dr. Folk by taking notes on the timing, effectiveness of the drug and general response of the animals. He asked Dr. Simmonds, a veterinarian with the research team, "What should I do if you accidentally shoot yourself in the foot?" The doctor replied, "Take notes - take notes!"

One large, 600-lb. grizzly bear that was caged at the Point Barrow Station was not completely immobilized by the drug dosage chosen. Ogden took the fundus photos, lying down only a few inches from the animal's massive head while the bear growled and salivated in response to the Sernylan. Ogden continued bravely on until he had the desired pictures, then got up and closed the cage door only minutes before the angry bear got to its feet.

In those days, animal research had not aroused such unfavorable reactions in the public as we see today. Scientists could justify such research as beneficial to the human race. In this project, devices were being implanted in the animals that

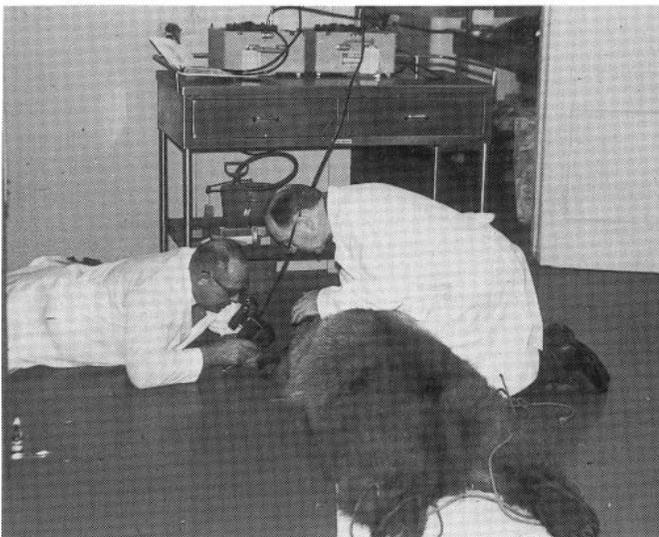


Figure 1: Photographing the ocular fundus of a grizzly bear: (left) Ogden Frazier and Dr. G. Edgar Folk, Jr.; (right) Ogden and an assistant.

would relay on miniature radios basic physiologic data such as heart rate and body temperature in order to assess their physiological responses to the environment. These data were received from hibernating animals in the colder months during the 82 days of continuous darkness as well as from the same animals during the summer. Ogden had the memorable experience of waking one hibernating brown bear prematurely when he attempted to take photographs of the sleeping animal.

Ogden had some very interesting extracurricular experiences, one of which was so exotic in nature that I cannot resist recounting it here: The Scientific Director of the Research Laboratory at Point Barrow told Ogden there was a Robert Frazier from Des Moines, Iowa, who was assigned to Observation Station T-3, which was Fletcher Ice Island, a free-floating ice floe near the North Pole. He wondered if the two Fraziers might be related, and arranged for Ogden to fly out on a supply trip to T-3.

When they landed on the island, the temperature was -46 F, with a wind chill factor of -63 F. Ogden was carrying a 35 mm Kodak camera with an automatic rewind under his armpit to keep it warm. As he stepped out of the plane, he took one shot of the radar dome and the surrounding buildings (Fig 2). Then the camera froze and would not advance to the next frame. It was a memorable trip, but the two Fraziers, it turned out, were not from the same family. How many of us ophthalmic photographers are likely to have the opportunity to stand on such an ice island near the North Pole and take such a photograph?

Ogden was popular in Eastern Iowa as a piano player, singer of popular songs and as a band leader. So it is not surprising that he has an affinity for pianos wherever he goes. Once, while entertaining a group of Eskimos in the recreation room at the Research Laboratory at Point Barrow, the governor of Alaska, Dr. Egan, walked in unexpectedly. They met and the governor showed an interest in the progress of the animal research.

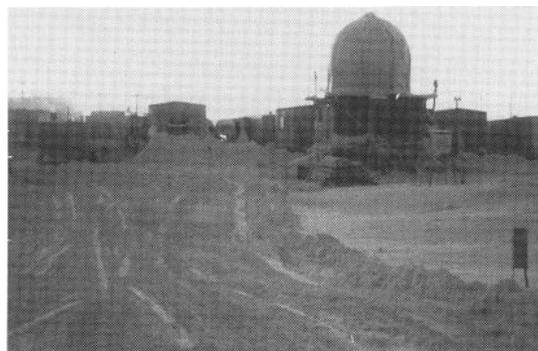


Figure 2: U.S. Observation Station T-3, Fletcher Ice Island.

On another occasion, Ogden walked up to the bar in the Military Officers Club at Fort Wainwright in Fairbanks and was greeted with, "What'll you have, Oggie?" It turned out that the bartender had been a student at the University of Iowa.

In general, the results of the research Dr. Folk reported, demonstrate definite physiological alterations in hibernating animals with seasonal changes.* There were, however, no changes in vascularity or pigmentation in the fundi of any of the mammals. Only a brief report was eventually made of the photographic evidence, and many of the original transparencies, unfortunately, have been lost. I am happy, however, for this opportunity to permanently record some of those that are still available (Fig 3).

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* Folk, G. E., Jr.: Physiological Research in northern Alaska. *ARCTIC, Journal of the Arctic Institute of North America*, 22: 315-26, 1969.

[Editor's note: Lee Allen and Ogden Frazier were important contributors to contemporary ophthalmic photography, especially during the 1960s. Much of the rapidly expanding knowledge in ophthalmology during that era was directly attributable to their pioneering efforts while they were at the Department of Ophthalmology, University of Iowa. For more details about their noteworthy achievements, see *Lee Allen: The Man, The Legend* in this issue.]

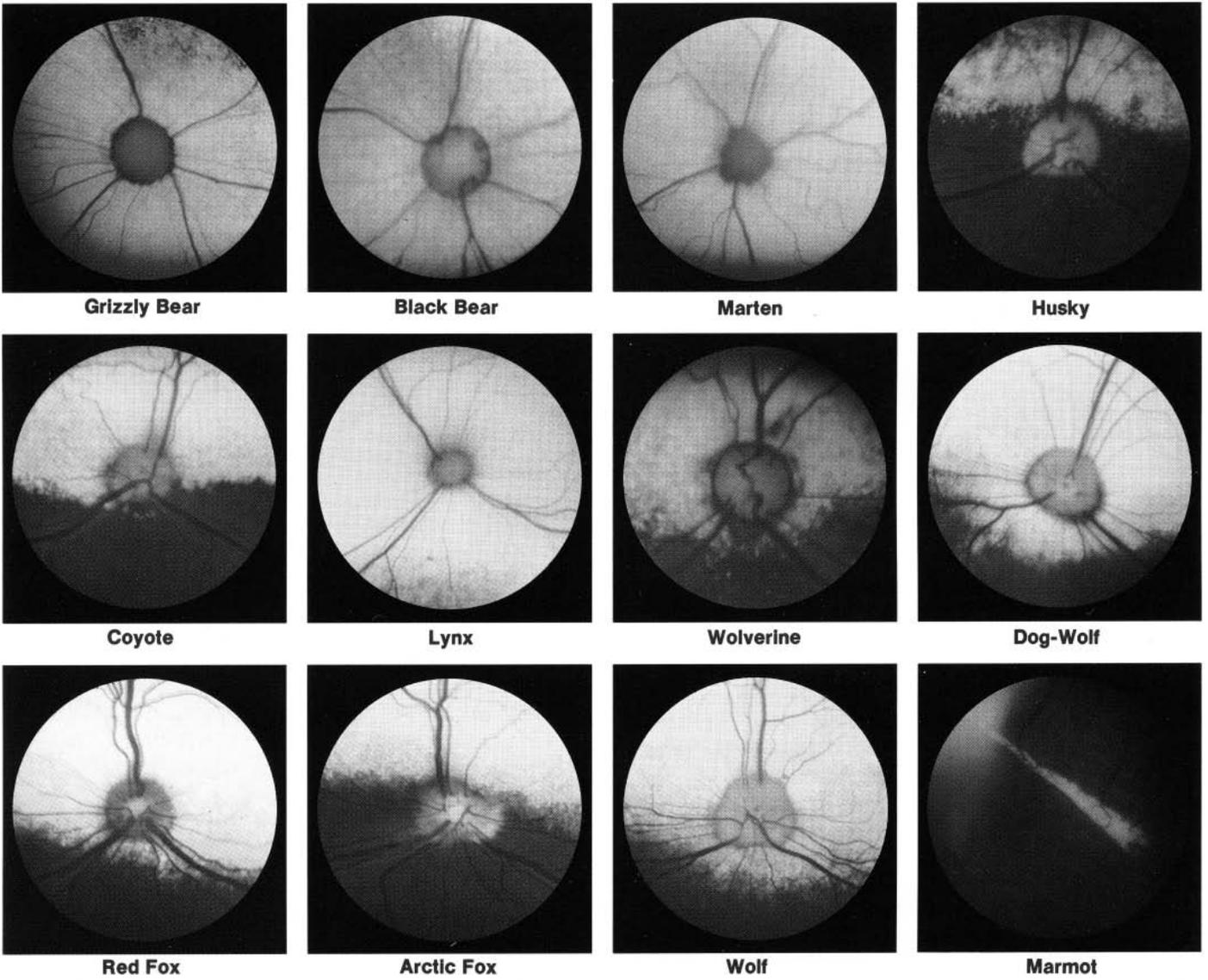


Figure 3: Retinal fundi of wild arctic mammals, photographed by Ogden Frazier. [Variations in ocular optics and media precluded photographic clarity in some cases. The pigment masses seen at the lower portions of some of these photographs are typical distributions of melanin granules which are considered useful to protect these animals' eyes from excessive light.]