

THE CARAVAN

NEWSLETTER OF THE FRIENDS OF LOREN EISELEY

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Loren Corey Eiseley
September 3, 1907 - July 9, 1977

"We have joined the caravan, you might say, at a certain point; we will travel as far as we can, but we cannot in one lifetime see all that we would like to see or learn all that we hunger to know."

-- The Immense Journey

PRESIDENT'S LETTER

Recently I acquired a fax/modem for my Macintosh, and after signing up with a local Internet service provider, began exploring the Internet. What would Loren Eiseley make of a "world wide web," "gophers," "web crawlers," "search engines," "internet," and "hypertext links", all accessed by the click of a mouse? I wish he were alive to tell us. The Internet is a natural home for the message and spirit of Loren Eiseley, multi-discipline, universal, growing, connection point for humanity.

We have our own web site, established and maintained by board member, Mike Antrim, Chair of Math and Science at Burke High School, Omaha, Nebraska. Our address is: <http://www.esu19.k12.ne.us/burke/EISELEY.html>.

You can also use a search engine and type in "Loren Eiseley." If you use the Lycos search engine, you will find our site listed with the comment "excellent." The site has begun to receive a steady stream of favorable comments and requests. Soon students in Omaha Public Schools will be posting essays on Eiseley.

At our next board meeting, the board will meet at Mike Voorhies's UN-L lab, where computers on the internet are available, and, surrounded by very old bones, we will look into the future.

If any of you can put up writings about Loren Eiseley on the web, I wish you would add your voice. We are in the process of establishing links with other sites. I particularly like a web site by David Lavery of Middle Tennessee State University entitled, *The Shadow of His Equipage: Loren Eiseley and Animals*. The title comes from a poem by Wallace Stevens.

For those of you who are unfamiliar with the web, it is all very easy to manage, though a bit puzzling and surreal. Once a search engine listing, or a web site is reached, any word that appears in blue is a "hypertext" link, which will take you directly to the next site. You can always retrace your steps. It's quite an interesting experience, and material can be printed out for saving. Our own site includes several curriculum guides for teachers. Books, new and used, are also for sale on the web.

I'll close this letter with the news that board officers for 1997 remain the same: Barb Sommer as Vice-President, Chris Pappas as Secretary, Morrie Tuttle as Treasurer, and Naomi Brill as Historian. We are pleased to welcome Curtis Twedt as a new member of our board. And we want to extend special thanks for the years of service and commitment given by Bob Runyon who is retiring from the Board.

Kira Gale, President (kiragale@novia.net)

Bing Chen Speaks At Literature Festival



The Eiseley session at the Nebraska Literature Festival held on the UN-L east campus in Lincoln last September was presented by our board member Dr. Bing Chen. Bing, Professor of Computing and Electrical Engineering at the University of Nebraska at Lincoln, has served our organization in many ways and heads our Educational Outreach Committee. You can read elsewhere about the Honors Course he is helping to produce. He and Rev. Darrel Berg led a popular discussion series dealing with Eiseley's work on the UN-O campus for two seasons in previous years. We are very pleased to present here the paper he read at the Literature Festival.

Loren Eiseley: A Shaman For Our Times

By Dr. Bing Chen

Loren Eiseley, bonehunter, naturalist, essayist, anthropologist, poet: he is a modern shaman and perhaps the most eloquent naturalist of the 20th century. With Eiseley "science" becomes a living passionate and poetic testament to the process of life

on this planet and the role that our species plays upon its great stage. Few naturalists or scientists possess his forceful imagery which frequently weaves within its tapestry, boyhood images of growing up in Nebraska. This is especially true in his seminal work, *The Immense Journey* (1957) for which he is best known, a revelation of life's endless mysteries taken from within the context of personal experiences.

Born on September 3, 1907, in Lincoln, Nebraska, Loren Eiseley would grow up in a world of ponds, sewers and golden wheels. Each would contribute an underlying foundation to his works. The explorations of a neighborhood pond taught Eiseley of the breadth of life with its rich diversity while expeditions to sewers were dank, dimly lit places of darkness, harboring danger and death. A golden wheel, part of a discarded erector set missing its second wheel was found in the debris of a rich family's incinerator. The young Eiseley would search in vain for its twin, the missing golden wheel, a search that would become a metaphor for humankind's holy grail, the search for the meaning of human existence on earth.

As a University student at the University of Nebraska at Lincoln, Eiseley's literary creativity would blossom. He served as associate editor of the *Prairie Schooner* (1927-33) and also participated in archaeological and paleontological expeditions to the far reaches of the state. These early experiences and talents would fuse together to inspire his future writings on nature. He would receive his Ph.D in anthropology from the University of Pennsylvania in 1937 and serve in a number of teaching and administrative positions.

Best known for works on nature such as *The Immense Journey* and *The Unexpected Universe*, Eiseley was also interested in those who influenced the scientific movement. Rather than producing traditional biographies which typically concentrate on personal history, Eiseley's writing focuses instead on their thought patterns and philosophy. The two were Charles Darwin (not a surprising choice) and Francis Bacon, a person whose contributions though not well known by the scientific community would profoundly affect its creation. Sir Francis Bacon's precognition of the scientific revolution was centuries ahead of his time. In *The Man Who Saw Through Time*, (1973) Eiseley recognizes Bacon's farsightedness in identifying the need for universities to play a significant role in providing a continuous stream of technological progress,

Bacon had grasped the concept of the cumulative basis of culture and the fact that inventions

multiplied in a favorable social environment. Science and its traditions had to be transmitted through the universities, and its efforts had to be publicly supported. By such means humanity could progress more consistently and far better sustain its great intellects.

In *Darwin's Century*, (1958) Eiseley concentrates upon the profound impact that the theory of evolution would have on science. Unpredicted and random chance was the underlying mechanism driving the changing patterns of life on earth. In addition to *Darwin's Century*, Eiseley explores the impact of evolution as a central theme in many of his major works. In *The Unexpected Universe*, Eiseley explores Man's desire for order where science proclaims a universe whose laws are open to discovery and its secrets are accessible to man. With Isaac Newton's revolutionary laws of motion we had for the first time a model of a balanced world machine, a majestic clockwork of the heavens. The remote past became one with the present. The universe was knowable and predictable, thus providing a comfortable womb for pre-Victorian England. It would be Charles Darwin however, who by introducing the idea of absolute random novelty, would upset Newton's mechanistic clockwork universe. No living thing, not even Man, could understand on what journey he had embarked upon. The stepped up manipulation of chance in the shape of mutation and recombinant genetic factors would be unprophesiable.

In his book, *The Invisible Pyramid*, Eiseley speaks again of evolution and the impact that genetic mutation has had. He argues that the essential process of specialized biological adaptations frequently ended with the species's extinction,

Restricted and dark were many of these niches, and equally dark and malignant were some of the survivors. The oblique corner with no outlet had narrowed upon them all. Biological evolution could be defined as one long series of specializations -- hoofs that prevented hands, wings that, while opening the wide reaches of the air, prevented the manipulation of tools. The list was endless. Each creature was a tiny fraction of the life force, the greater portion had died with the environments that created them. Others had continued to evolve, but always their transformations seemed to present a more skilled adaptation to an increasingly narrow corridor of existence. Success too frequently meant specialization, and specialization, ironically was the beginning of the road to extinction. This was the essential theme

that time had dramatized upon the giant stage.

Of humankind's most recent and unique characteristic which occurred within a geological eye blink, Eiseley states that it was the development of the human brain, which would henceforth allow the species to avoid what so many other species could not avoid, the trap of specialization and specialization led inevitably down a path to extinction,

In three billion years of life upon the planet, this play had never been acted upon the great stage before. We come at a unique moment in geological history, and we ourselves are equally unique. We have brought with us out of the forest darkness a new unprophesiable world -- a latent, lurking universe within our heads. . . Man alone had seemingly evaded the oblique trap of biological specialization. He had done so by the development of a specialized organ, the brain -- whose essential purpose was to evade specialization. . . The creature who had dropped from some long-ago tree into the grass had managed to totter upright and free the grasping forelimb. Brain, hand, and tongue would henceforth evolve together. Fin, fur, and paw would vanish in to the mists of the past. Henceforth it would be the brain that clothed and unclothed man. Fire would warm him, flint would strike for him, vessels would carry him over dangerous waters.

In *The Unexpected Universe*, Eiseley describes the valiant struggle which culminated in the rise of Man over the past one million years a period known as the Ice Ages. The periodic thrust of the ice sheets south would have a profound impact on our development,

Lightning struck, the living fire ran from volcanos in the fury of earth's changes and still Man slumbered. Twice the ice ground southward and once withdrew. Human flaked flints were heavier and better made. Behind that simple observation lies the unknown history of drifting generations, the children of the dreamtime.

With the entrance of Peking man, a new theme is introduced which the original natives of Australia describe as the dreamtime,

A dream animal was in the process of development, a user of invisible symbols. In its beginnings such a being walks the knife edge of extinction. For a creature who dreams outside of nature, but is at the same time imprisoned within reality, has acquired one of the cruelest and most

generous endowments ever given to a species of life by a mysterious provider.

Courses in physical anthropology describe Homo Erectus with its 860 cc brain who having emerged from Africa some 500,000 or so years ago, would disperse throughout Europe and Asia, developing tool making skills along the way, inhabiting caves for shelter and utilized fire for cooking and warmth but Eiseley's eloquence describes the first use of fire and its long term implications as the taproot of our modern technology in another way,

Fire opened to Man, the final conquest of earth... Speech has made us but it is a human endowment not entirely of our conscious devising. . . By contrast, the first fires flickering at a cave mouth are our own discovery, our own triumph, our grasp up on invisible chemical power. Fire contained in that place of brutal darkness and leaping shadows, the crucible and the chemical retort, steam and industry. It contained the entire human future.

In describing the later challenges of surviving the forbidding environment of the ice ages, Eiseley's imagery of our forebears recounts the journeys of Cro-Magnon mammoth hunters across the Bering Straits. In search of prey their hardship serves as a lasting memory and legacy to their descendants,

But out of such desolation had arisen Man, the desolate. In essence he is a belated phantom of the angry winter. He carried, and perhaps will always carry its cruelty and its springtime in his heart.

In response to changing climate patterns and by taking advantage of the newly emergent bread grains the rise of settled agriculture along river valley would occur. The process of increased urbanization has led to the rise of today's industrialized nations with their voracious appetites for natural resources and energy. Sharp, incisive warnings are issued from Eiseley,

We are facing, instead, a simple reality to which up until recently, the only response has been flight -- the flight outward from what appears unsolvable and which threatens, in the end, to leave an impoverished human remnant clinging to an equally impoverished globe. So quick and so insidious has been the rise of the world virus that its impact is just beginning to be felt and its history to be studied. Basically man's planetary virulence can be ascribed to just one thing: a

rapid ascent, particularly in the last three centuries, of an energy ladder so great that the line on the chart representing it would be almost vertical. . . Air and water and the land itself were being polluted by the activities of a creature grown used to the careless ravage of a continent... Western man's ethic is not directed toward the preservation of the earth that fathered him. A devouring frenzy is mounting as his numbers mount. It is like the final movement in the spore palaces of the slime molds. Man is now only a creature of anticipation feeding upon events.

Looking to humanity's future prospects, Eiseley offers some sobering thoughts and observations at the dawning of a new millennium. Taken from the prologue of *The Invisible Pyramid*,

Man would not be man if his dreams did not exceed his grasp. . . If I term humanity a slime mold organism it is because our present environment suggest it. If I remember the sunflower forest it is because from its hidden reaches man arose. The green world is his sacred center. In moments of sanity he must still seek refuge there. . . I know that we exist in the morning twilight of humanity and pray that we survive its noon... Man is the solitary arbiter of his own defeats and victories. I have mused on the dead of all epochs from flint to steel. They fought blindly and well against the future, or the cities and ourselves would not be here. Now all about us unseen, the final desperate engagement continues. . . If man goes down I do not believe that he will ever again have the resources or the strength to defend the sunflower forest and simultaneously to follow the beckoning road across the star fields. It is now or never for both, and the price is very high. . . Man has fought his way from the sea's depths to Palomar mountain. He has mastered the plague. Now, in some final Armageddon, he confronts himself.

Space flight is a 20th century technological feat which carries with it, our dreams, hopes and fears. Loren Eiseley recounts the plight of the wounded Apollo 13 flight as a metaphor and perhaps as an answer for humankind's search for its "golden wheel" and connects the endangered astronauts with whispers from the past,

In the ancient years, when humankind wandered through briars and along windy precipices, it was thought well, when encountering comets or firebrakes, "to pronounce the name of God with

a clear voice." This act was performed once more by many millions when the wounded Apollo 13 swerved homeward, her desperate crew intent, if nothing else availed, upon leaving their ashes on the wind of earth. A love for the green meadows we have so long taken for granted and desecrated to our cost. Man was born and took shape among earth's leafy shadows. The most poignant thing the astronauts had revealed in their extremity was the nostalgic call still faintly ringing on the winds from the sunflower forest.

In the section titled, the "Last Magician" of *The Invisible Pyramid*, Eiseley states his concerns about the problems of population growth and environmental degradation. He advises that we be conscious of where we came from and wherein lies our solution,

Creatures who evolve as man has done sometimes bear the scar tissue of their evolutionary travels in their bodies. The human cortex, the center of high thought has come to dominate, but not completely to suppress, the more ancient portions of the animal brain. We know that within our heads there still exists an irrational restive ghost that can whisper disastrous messages into the ear of reason. Today man's mounting numbers and his technological power to pollute his environment reveal a single demanding necessity: the necessity for him consciously to reenter and preserve, for his own safety, the old first world from which he originally emerged. His second world, drawn from his own brain, has brought him far, but it cannot take him out of nature, nor can he live by escaping his second world alone. . . He must make, by way of his cultural world an actual conscious reentry into the sunflower forest he had thought merely to exploit or abandon. He must do this in order to survive. . . Man must be his last magician. He must seek his own way home.

Through countless eons of struggle frequently at the brink of extinction, humankind's triumph at the end of the last ice age would be settled agriculture and the rise of the first civilizations. The twin dynamos of civilization, namely culture and technology, have powered us into becoming the most dominant species on earth. Today our massive digging machines allow us to rip in one bite what took a hundred million years of earth time to accumulate. Yet with all this massive "wealth" that certain segments of humankind have accumulated, there is a murmuring of unease, a sense of disquiet, a foreboding that perhaps all is not well or as it should be. Our Faustian adventure has put us on the flyways to the solar system and opened the doorway

to godlike power with an understanding of our DNA structure. Yet our survival and growth as a species must be an inward looking journey, to find the way, the Tao, to be one with all that is nature. Three thousand years after the Taoist shamans in China first spoke of Man and nature, Loren Eiseley, a 20th century shaman, provides us with an insight on how to find the path for humankind's enlightenment. The immense journey continues but who plays next upon the great stage of life remains unanswered. If it be our descendants then ". . . Man must reenter the sunflower forest. . . He must be his last Magician." There is a sense that we cannot continue to view ourselves as being in a continuous state of war with nature with its total conquest being our ultimate goal. In order to survive Man must instead view himself as a part of the life force, having finally matured as a species to accepting our collective responsibility as the shepherd of all life on planet Earth with the realization that all life is precious. The Taoist philosophers of ancient times taught and Loren Eiseley, the modern shaman of the present, teaches, that there is a unity that underlies all nature and that we must seek a harmony within its bosom. Thus the missing golden wheel of Loren Eiseley's youth can be found and, this then is Mankind's search for the holy grail. It lies within humanity's collective soul, waiting to be realized and acted upon. Taken from *The Invisible Pyramid*, Eiseley quotes from Nebraska's poet laureate, John G. Niehardt:

Once in a cycle the comet,
Doubles its lonesome track
Enriched with the tears of a thousand years,
Aeschylus wanders back.

From The Lost Notebooks:

I would never again make a profession of time. My walls are lined with books expounding its mysteries. My hands have been split raw with grubbing into its waste bins and hidden crevices. I have stared so much at death that I can recognize the lingering personalities in the faces of skulls and feel accompanying affinities and revulsions. I am the last in an Ice Age leaf fall.

Nebraska Theater Caravan Features Eiseley

The Nebraska Theater Caravan is producing a new play, *Songs of Myself*, written by Lincoln playwright Peg Sheldrick in which many of the characters are well known personalities including Loren Eiseley. We have their programming guide which provides ideas for the activities which can occur in conjunction with the presentation and the following is taken from its description of the story:

The play opens in a classroom. Students study to the rhythmic beat of the huge clock that looms behind them. One student, Guy, keeps breaking the pattern setting his own rhythm. The teacher challenges Guy who tries to show the class an invention on which he is working.

The teacher and other students ridicule his idea, leaving him alone, depressed and angry with himself. The clock begins to chime as Guy tries to throw the invention away, only to have it come flying back. After throwing it away a second time, it is returned by Loren Eiseley as he appears "out of time," from behind the clock. Guy finds himself in a place between fact and imagination, surrounded by people whom he has heard of all his life, and some he hasn't.

In defiance of space and time, Louis Armstrong, Marie Curie, Emily Dickinson, Albert Einstein, Duke Ellington, Zora Neal Hurston, Loren Eiseley, Lise Meitner and Walt Whitman take Guy on a journey of self-discovery. Urged on by Eiseley, Guy finds that these great people find some value in the invention that he keeps trying to hide or toss away. Guy shares their lives, their triumphs and their pain in his quest to find the courage to take his place in the world.

This play for young people is designed to help them open their minds to creative thinking and it is one of three plays offered during the Caravan's regular touring season. The Nebraska Theater Caravan is a professional touring wing of the Omaha Community Playhouse which presents professional children's and musical theater all across the state to audiences of all ages. They have a 20 year tradition of presenting educational programming with workshops and performances for the entire community.

UNL To Offer Eiseley Course In Honors Program

The Friends of Loren Eiseley are pleased to announce that the University of Nebraska at Lincoln will offer a course in the fall semester of 1997 specifically devoted to its native son, Loren C. Eiseley. This course will be available as part of the honors curriculum (HONORS 3850), an enrichment opportunity offered to committed learners who have been accepted into the university's honors program. It will be presented each Wednesday afternoon from 2:00 to 5:00 PM. The course will focus on Eiseley's writings and natural philosophy and will explore the impact of his Nebraska roots in shaping his literary style. The viewpoints of a number of well known Nebraskans with diverse interests from both within and outside the University will be shared with the class to illuminate Eiseley's influence as a modern shaman. Friends board member Dr. Bing Chen will lead in the development of this course and we will be able to tell you a good deal more about this in future issues of the Caravan.

Videos Available

These video tapes can be ordered from our box number or by calling (402)-435-5454.

Reflections of a Bonehunter, by Christine Lesiak (1995), one hour video produced by Nebraska ETV. Interviews with Gale Christianson, science fiction writer Ray Bradbury, and much more.

Postpaid prices: members \$22.50 and nonmembers \$25.00.

Loren Eiseley's Lincoln (1996), one hour video produced by Friends of Loren Eiseley. Guided tour by Darrel Berg of sites associated with Loren Eiseley to be found in Lincoln.

Postpaid prices: members \$12.50 and nonmembers \$14.50.

Dr. James Estes Speaks To The Eiseley Friends

The evening program for our October 20th dinner was provided by Dr. James Estes, Director of the University of Nebraska State Museum. Author of many publications and articles, he has been honored for his research which includes work with grasses, composites, and pollination ecology, the very topic he was addressing for us. His talk was entitled "How Grasses and Sunflowers Changed the World and Vice Versa" and his remarks were illustrated with a wonderful series of color slides. Our program was filmed and edited by the Nebraska Historical Society and it has been showing this month on the local public access cable channel 5. Members who could receive this have been sent cards giving exact information.

Dr. Estes began by commenting on Eiseley's essay "How Flowers Changed the World" and we are very grateful for his permission to present this initial portion of his presentation which now follows:

In the Spring of 1972 or fall of '73, I chaired a committee to select appropriate reading for the Natural Science component of the College of Liberal Studies at another institution. This baccalaureate degree involves a "great books" program that is laced together with four four week- long seminars and four theses. I still recall one of my colleagues from the History of Science handing me a slim volume entitled *The Immense Journey* with the suggestion that it would fit our design to put humans within the realm of science and science in the human context. This series of essays fit our goal admirably, and even though the book was already dated, it proved to be one of the program's most popular and successful titles.

That volume was my first encounter with Loren Eiseley, and the selection from the book that I recall most vividly was "How Flowers Changed the World." That title provides the point of departure for my talk, but first I would like to take a few moments to reflect on this fifth essay in the book, in part, because it offers some insight into the scientific enterprise itself.

The major thesis of this essay is that the flowering plants were necessary for the origin and spread of our own species. Thus Eiseley suggested that the rise of humans would not have been possible without the earlier development of the flowering plants. He also talks a good bit of the late history of the dinosaurs and the conifers and cycads that were the coexisting plants,

and the changes that resulted from the rise of the flowering plants and mammals.

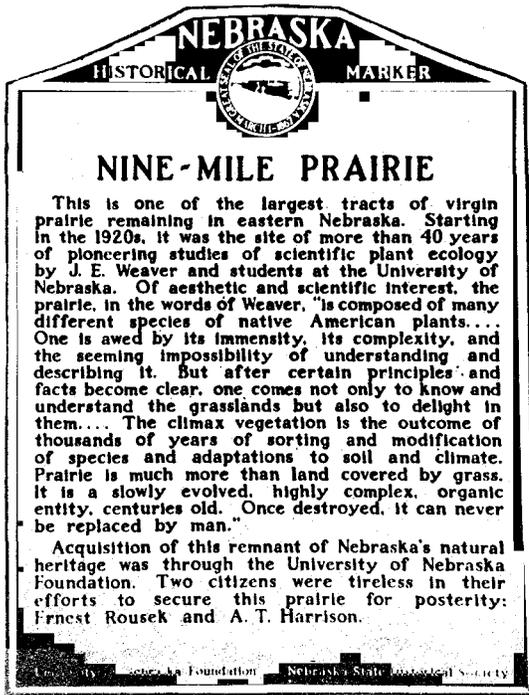
I was impressed with the essay, even though when I first read it, I realized how much the science had changed. In this essay, Eiseley functioned as a generalist (as opposed to a reductionist), gathering accepted tenets of the time, and what was especially valuable, weaving them together to make a compelling case for the significance of flowering plants. Even though the particulars in the essay can be questioned, Eiseley demonstrated considerable genius in the successful creation of his model, which is basically correct. Think of Darwin, who didn't comprehend the details of genetics and yet his theory of natural selection, which was based on inheritance, was a wonderful, clear exposition of how evolution probably works.

Here we have two examples of individuals that develop a major thesis about a particular issue and yet they don't have all of the facts or inferences quite right. How is this possible? I think the primary reason that they were successful was that they had the observations which formed the central thrust of the idea down pat. So the details were "wrong" but in fact, their ideas were based on a firm empirical base. If scenarios, models, and paradigms are thoroughly founded in observation, then the finer details may not be as significant.

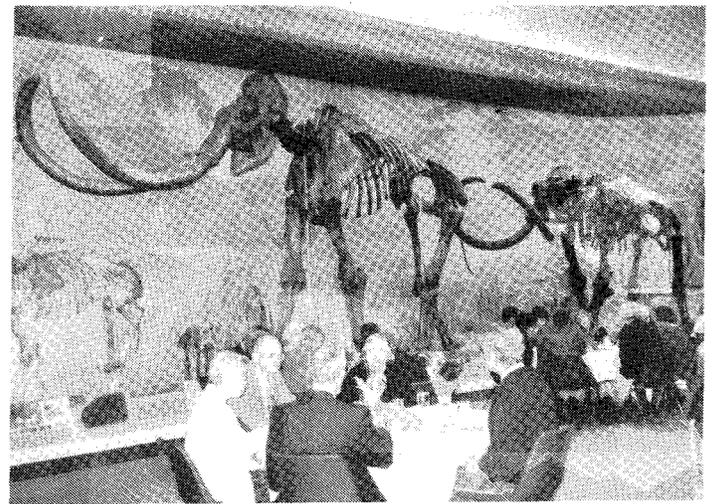
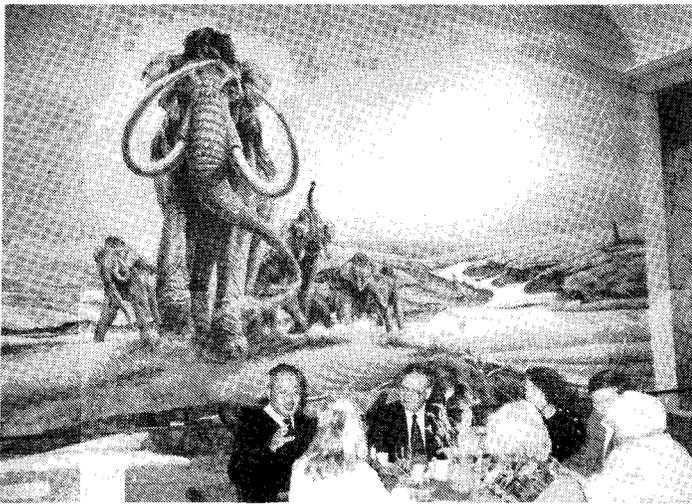
A student might read the essay, and think Eiseley missed everything, but I don't think that he did miss everything and, of course, the writing is superlative. It is apparent that *Homo* originated in a grassland environment, and grasses themselves are flowering plants. The upright, bipedal habit would have been useful on a grassy plain. Almost all our foods are derived directly from the fruits, seeds, stems, and roots of members of the flowering plants, or indirectly through our herds, which graze on these plants. Life is more pleasant because of mushrooms and mold, but they are hardly the staff of life. The vast preponderance of the calories for humans are derived from the grains of just three grasses -- wheat, rice and maize (or corn). The other crop that is so important in caloric contribution is the potato. Many of the products in our Pharmacopoeias, perhaps as much as three quarters, are also derived from parts of flowering plants. We use fiber from flowering plants for cloth and paper and as building material. Even many of our pleasures and vices are derived from this plant group -- lawns, garden flowers, as well as alcoholic spirits, with essential contributions from yeast, and tobacco. Eiseley almost certainly recognized, as we do, that it is impossible to imagine our society without angiosperms,

ANNUAL PROGRAM AND DINNER

October 20, 1996



The Friends spent a wonderful October afternoon out on Nine Mile Prairie. Our tour over the hills and through the long grasses was led by Ernie Rousek shown (on the right above) speaking to some of us. Ernie is one of those who have done so much to preserve this piece of land and make it available to the public. New board member Curt Twedt also helped with our tour. It was a glorious day with migrating birds filling the skies overhead and we are still wondering if that one flock really might have been Sandhill Cranes.



The Friends enjoyed their supper in the State Museum's Elephant Hall on the UN-L campus. Above right, the Imperial Mammoth looks to his likeness in Marc Marcussen's great mural and wistfully recalls those good old days out west on the Platte River some 30,000 years ago. To his rear is Jefferson's Mammoth, a new kid just a mere 18,000 years of age. On the left we see Kira Gale, Friends President; Dr. Priscilla Grew, UN-L Vice Chancellor for Research; and Dr. James Estes, Museum Director who was our speaker for the evening; and looming overhead an 11 million year old Giant Long-jawed Tusker watches their every move.

another name for flowering plants. Our species is totally dependent on the flowering plants, and that is in addition to the air cleansing capacity of flowering plants along with other chlorophyll bearing organisms.

Meanwhile, the antecedents of the flowering plants, namely the cone-bearing plants, contribute only fiber, chemicals and a few drugs to our well being. None are major sources of calories, oh we may put pinon nuts on our salads, but that is about it. Furthermore, we obtain very little sustenance from the order of reptiles, since many of our grazing animals are mammals. However, there is considerable evidence that birds are descendants of one group of dinosaurs, and the birds are major contributors to the human food supply, so perhaps the giants of the Mesozoic passed on more to our species than was thought in the time of *The Immense Journey*.

Although time renders it impossible to determine unequivocally whether the flowering plants were necessary for the origin of humans, they certainly were sufficient cause for our rise and spread.

You and I live in the age of flowering plants; gymnosperms including the conifers and cycads, as noted by Eiseley, were the dominant life on earth during the time of the dinosaurs. However, it now appears that most of the details in this essay and Eiseley's imagery of the age of dinosaurs are scientifically unacceptable, that is to say, they are not supported by the data. That isn't an indictment of the man or his ability, but rather it is a reflection of the enormous advances in available data and methods of analysis in paleontology and our ability to infer the past.

However, since the appearance of this essay, evidence has accumulated that dinosaurs may have been warm-blooded and fast-moving, were not restricted to warmer climes and times, cared for their young, and included smaller species as well. Furthermore, their replacement by mammals and birds may have been the result of a celestial event rather than competition with the emerging mammals.

Eiseley clearly noted the significance of the origin of seeds, but relates their importance only to the storage of food reserves. While that is a significant aspect of the biology of seeds, he overlooked the facts that many plant groups have shed the stored food in favor of vast quantities of small easily dispersed fruits and seeds. Thus, we might contrast the differing strategies of oaks and dandelions with respect to reproduction -- the production of single seeded, dry fruit.

All members of the oak genus of plants rely on heavy acorns with oil and protein-rich reserves, that fall into a shady, stable habitat. Nice and safe, but not much room for flexibility. Furthermore, the species tend to go through years when there is very low productivity.

In contrast, dandelion's fruits are produced by the hundreds or even thousands by each plant, every year, more than once a year. They have very little stored energy, but there is a good chance that one will land in a suitable, sunny habitat and germinate. And, dandelions have very flexible physiology that allows them to grow successfully in a variety of habitats. There is also a chance that many of the seeds will alight in a disturbed habitat and all will germinate -- jackpot!

Which is the best strategy? Well, both are excellent compromises for the overall natural history of the species.

There was one other statement or contention in Eiseley's chapter that startled me. Eiseley argued that the earliest flowering plants had petal-less flowers and were conifer-like wind-pollinated trees. However, Charles Bessey, a respected teacher and professor at Iowa and Nebraska, had earlier hypothesized that the most primitive flowering plants were the showy, insect-pollinated plants related to magnolias. It is almost certain that Eiseley would have been familiar with Bessey's hypothesis. Bessey's views were given wide circulation by Raymond Pool, a professor at Nebraska, but they couldn't be tested until the techniques of comparative anatomy and molecular technique were applied. The evidence from anatomy was already available when the book was published (but perhaps not when the essay was being written), and the change in paradigms was underway. So Eiseley must have simply taken the safer route and continued to accept the still popularly held earlier view, rather than the hypothesis from the Great Plains.

From How Flowers Changed the World:

Without the gift of flowers and the infinite diversity of their fruits, man and bird, if they had continued to exist at all, would be today unrecognizable. Archaeopteryx, the lizard bird, might still be snapping at beetles on a sequoia limb; man might still be a nocturnal insectivore gnawing a roach in the dark. The weight of a petal has changed the face of the world and made it ours.

Night Country To Be Reprinted

The new Spring and Summer catalog of the University of Nebraska Press announces the reprinting of Loren Eiseley's *The Night Country* in an edition featuring the original illustrations of Leonard Everett Fisher and an introduction written by Dr. Gale Christianson, Loren Eiseley's biographer. A June publication is expected for this paperback edition which will sell for \$13.95. Once this becomes available we will be able to help our readers obtain copies.

The catalog says of the book, "Toward the end of his life, Loren Eiseley reflected on the mystery of life, throwing light on those dark places traversed by himself and centuries of humankind. It describes his needy childhood in Nebraska, reveals his increasing sensitivity to the odd and ordinary in nature, and focuses on a career that turns him inward as he reaches outward for answers in old bones."

We are grateful to the Press for taking this welcome action to keep one of Dr. Eiseley's important books in print and hope the success of this edition will encourage them to reprint more of his writing.

Editorial Excavations

By Morrie Tuttle

This past fall the Sierra Club published a beautiful small volume containing Dr. Eiseley's essay "How Flowers Changed the World," presenting this familiar text surrounded by the beautiful floral photographs of Gerald Ackerman. Ackerman began taking pictures as a youngster growing up on Long Island. He studied at Washington University and the School of Visual Arts, deciding to make his career in Photography. He studied with Ansel Adams in his Yosemite workshop and worked briefly as an assistant to Imogen Cunningham. He then followed a distinguished career as a dance photographer, but in the early '80s he moved to Santa Fe where he began to photograph flowers in natural light and at close range. He died in 1994. His photos make a wonderful companion to Eiseley's text and the book is a jewel indeed.

Persons collecting Eiseley material will want to have a copy which you should be able to find in your favorite book shop, but if all else fails you can write to us for we can probably get one for you.

A short article by Stuart Blackman in the November 9, 1996 issue of the British magazine *New Scientist* gives us something to think about in conjunction with this Eiseley essay. Under the heading, "Lack of flowers beneath the sea leave insects high and dry," Blackman reports on the work of Jeroen van der Hage of Utrecht University in the Netherlands. The article begins,

Why are there no insects in the sea? Their absence has always surprised ecologists since there are more species of insect on the planet than the rest of the animal and plant kingdoms put together. Now a researcher in the Netherlands has suggested that the failure of flowering plants to colonize the seas may be part of the answer.

He tells that only a few insects species are associated with truly marine environments and most of these live on the surface or in tidal pools. Van der Hage notes a similar scarcity of marine flowering plants, with only 30 known species. While land plants, originally fertilized by winds, began to co-evolve with insects which were more efficient as pollinators, fertilization by pollination under water is very difficult. The pollen tends to be washed away before the fertilization can occur. Van der Hage states that pollination evolved to allow fertilization in a dry environment and that if flowering plants had been able to overcome the problem of submarine pollination and thereby colonize the seas, insects might have followed. Van der Hage does recognize his theory does not explain why carnivorous or parasitic types of insect not dependent on flowering plants for food, did not colonize the sea.

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Those who have gone with us on trips to the Ashfall Fossil Beds will be interested to know that they were visited recently by Bill Nye, the Science Guy of television fame and his film crew which produced material to be shown on his popular show sometime this spring.

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A favorite Sunday feature in the Omaha World Herald is written by Eiseley Friend and naturalist, Fred Thomas. The January 12th column tells of things happening in the Wildcat Hills of western Nebraska, which Fred describes as an area of "eroded bluffs, ravines, ponderosa pines, junipers, cottonwoods, mountain lilies and other wild flowers, plus varied species of birds and animals." In this area the fossil bone was found which after 25 million years inspired

the Eiseley poem, "The Innocent Assassin." The Nebraska State Historical Society is preparing interpretive panels telling of the two sabre-toothed cats that waged this death fight and will place these in the parking area outside the society's Chimney Rock Visitor Center. This is as close as one can get to the site where the fight actually occurred.

Thomas tells that "NatureScene," a popular public television program, will send a crew this May to film in the Wildcat Hills near Chimney Rock and the Agate Fossil Bed National Monument this spring to produce a feature program for this series. Nebraska Public Television shows this program on Saturday mornings.

Another Eiseley Friend and enthusiast Ray Boice from nearby Gering has been the driving force behind the effort to accomplish the placing of these panels. His urging also helped influence the film crew to come to produce this program. Boice envisions one panel showing the two cats in the heat of combat and the other telling of the University group which included the young Eiseley which discovered the fossil. Boice hopes the panels can be in place by the time the film crew arrives in May.

Boice is also urging the Nebraska Game and Parks Commission to station a full time naturalist at the Wildcat Hills Nature Center to provide programs for all ages and to do research on the area's environment. He feels that placing a naturalist here could be a pilot program, the success of which could result in placement of naturalists at other sites. With a full time naturalist, this could become the home of western Nebraska's natural-science education, much as Omaha's Fontenelle Forest Nature Center does for eastern Nebraska.

We expect to be able to tell you much more about all of this later on. We have known of the work Ray Boice was doing, want to thank him for his inspiration and enthusiasm, and congratulate him for these results.

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As we begin this new year, one should think of the anniversaries it marks. Not only does 1997 measure the 20th year since Dr. Eiseley's death, but it occurred to us that it also is the 100th anniversary of the death of Edward Drinker Cope. Dr. Cope, who in life was a famed paleontologist, known not only as a "driven" bone hunter with incredible accomplishments, but also for his hatreds, his prejudices and the frightful conflict he waged with equally famed paleontologist, O. C. Marsh. At his death, Cope willed his body to science (his brain case was reported to have been of most

prodigious size) and he thus became another specimen in the collection of the Wistar Institute. In a 1994 article for the Knight Ridder Syndicate, columnist Mark Bowden tells us, "It seems Cope's ambition for immortality out stripped even his earthly celebrity. Where most people wish to be esteemed, respected or at least fondly remembered, Cope aspired to be recognized as nothing less than the ultimate model of humanity, the actual scientific standard, the 'type specimen' for the species." The extent to which studies of his remains helped define the species is unknown, but Bowden suggests that the specimen might have been somewhat wanting as a perfect species model. Cope's career as artifact in waiting continued for decades until, as Bowden continues, "When Wistar divested itself of 2.5 million artifacts in 1966, Cope's remains were rescued from basement storage by Loren Eiseley. . . who pirated them from a loading dock."

And that is how Edward Cope became a well known tenant of Dr. Eiseley's shelves. Caroline Werkley tells in an article in *Smithsonian* (8/79), "Loren Eiseley is keeping careful watch on his guest of honor. 'They are delicate and not in a position to defend themselves,' he has written of old bones in his possession. 'So I look out for them. I'd do the same for you.'" Caroline tells us that guests of the office often toasted Dr. Cope with a glass of sherry, that he was decorated and displayed at Christmas time, and that he was otherwise an inspiration for frequent conversation. But Caroline's report would not be the end of this story.

Gale Christianson, in his biography *Fox at the Wood's Edge* also tells of Dr. Cope and from him we learn (pp 435-6) that sometime in the late '70s (after Caroline's article had been published) some one borrowed the skull so it might be used as the model for a bust of Cope. Thus it disappeared without a trace, much to Dr. Eiseley's distress. Bowden's 1994 story mentioned above was about two fellows going about the country in 1991 with what they thought was Cope's skull, but Bowden's story was not designed to lead us to conclude that they really had the right skull.

Thinking on these things, we remember a time long ago when working in our office very late one night, we listened as a sorrowing lady cleaned offices well down the hall and sang in a soulful, but unmusical voice, "Oh Where is my Wandering Boy Tonight?" And indeed, in this anniversary year, we wonder the same for Edward Drinker Cope.

DUES REMINDER

Dues are now being received and appreciated. Remember, if you paid after September 1, 1996 you are considered paid up for all of 1997.

The dues structure is as follows:

Individual member - \$10.00
Contributing member - \$25.00
Supporting member - \$50.00
Patron - \$100.00

Send checks to: Friends of Loren Eiseley
P.O. Box 80934
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