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158th ANNUAL MEETING OF THE KANSAS ACADEMY OF SCIENCE

The 158th annual meeting of the Kansas Academy of Science will be held at Baker University and The University of Kansas, April 10th -11th of 2026. Check the KAS website for updates.

2025 Annual Meeting of the Kansas Academy of Science a Great Success

by Hank Guarisco, editor

On April 4-5, 2025, the 157th annual meeting of the Kansas Academy of Science (KAS) was held in conjunction with the Central States Entomological Society (CSES) at Friends University in Wichita. The annual banquet and keynote address took place at the beautiful Sedgwick County Zoo on Friday evening. Those who arrived early were able to spend several hours touring the various exhibits. One of my favorites was the Reptile and Amphibian building. This living ark is the home of some of the rarest and deadliest reptiles on the planet. One beautiful paludarium contained several examples of Chinese alligator that is almost extinct in the wild. An impressive pair of Gaboon vipers, the female approximately 5 feet in length, lay stretched out on the simulated forest floor of the enclosure. Black mambas, green mambas, and an intelligent looking king cobra, were particularly interesting to observe. As the afternoon became colder, we walked to the Cargill Learning Center for dinner and a lecture on the health issues involved in maintaining captive elephants.

The next morning we visited old friends while partaking in a continental breakfast before the oral presentation began on the Friends University campus. Our keynote speaker was Eric Eaton, the author of the Kaufman Field Guide to Insects of North America, as well as the contributing editor of the popular online insect identification resource BugGuide.net. He is an advocate of community access and citizen science participation. The general public needs to be able to access scientific information, as well as contribute relevant observations, so that interest in conservation will grow.

Photo by Jennifer Haight

Notable lectures included: potential areas of distribution of Kansas butterflies using habitat and weather maps; bat activity over prairie dog towns; and, dung beetles associated with bison vs. cattle. An especially enlightening presentation on transexuality was given by Richard Schrock, who presented the genetic basis of a number of instances of transexuality: XO, XXY, and XYY, as well as gender identification.

The day was concluded by giving out first, second, and third place awards of $100, $200, and $300 respectively, to undergraduate and graduate students for their winning oral and poster presentations.

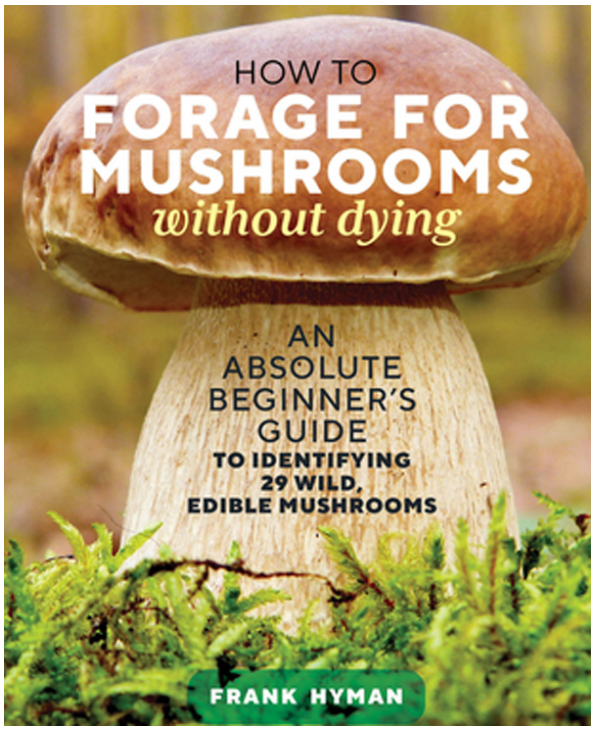
KAS to be represented at the 2026 WEALTH Day at the Kansas State Capitol in February

Water **E**arth **A**ir **L**and **T**ransportation and **H**ealth are issues highlighted by the a diverse group of organizations which meet in the Capitol rotunda to inform both the public and state legislators.

Book Review: How to Forage for Mushrooms Without Dying

by Frank Hyman, Storey Publ., 2021. 255 p.
Reviewed by Hank Guarisco, editor

This delightful book has so many useful features that it belongs in the personal library of every mycophile, especially those incipient gormandizers with a proclivity for adding wild mushrooms to the menu. The title of the book states its mission, and the subtitle, "An Absolute Beginner's Guide to Identifying 29 Wild, Edible Mushrooms," states how this goal is to be achieved. The author emphasizes good judgment and states that you must be 100% certain of a mushroom's identity before eating it. "There are old mushroom hunters, there are bold mushroom hunters, but there are no old and bold mushroom hunters."



The color images of the 29 edible species of mushroom featured in the book, and their inedible or poisonous look-a-likes, are of superior quality. Several images of each species are presented to illustrate various pertinent features used in identification. Most of the commonly encountered, edible mushrooms, such as morels, chanterelles, chicken-of-the-woods, lion's mane, turkey tail, wood ears, velvet foot, and oyster mushrooms, are discussed. Each species account includes interesting anecdotes, and sections on cooking, preserving, farming, where and when to find them, and a checklist of field characteristics for proper identification.

There is also a section on identifying some poisonous mushrooms, including the deadly Amanitas, the large, white mushrooms on lawns (C*hlorophyllum molybdites*), emetic Russulas, and little brown mushrooms (LBMs) that are very hard to identify.

Besides accurately identifying those mushrooms that are edible, proper handling before consumption is imperative. All wild mushroom must be thoroughly cooked before eating. In 1991, raw morels poisoned 77 guests at a Vancouver banquet. It is also important to keep mushrooms fresh after harvesting. Since they contain high levels of nitrogen, mushrooms should be treated like meat and not left in a hot car for any length of time. There also has been an instance of botulism poisoning from improperly canned Chanterelles. The sections near the end of the book on collecting and cooking mushrooms are also very interesting.

This focused field guide has a water-proof cover, measures 7" by 5½", and is perfect to take into the field. The anecdotal information scattered throughout is presented in a very entertaining manner, which gives the book personality. I highly recommend it.

NIH-funded science must now be free to read instantly: what you should know

by Mariana Lenharo

Nature. 2025 Jun 26. doi: 10.1038/d41586-025-01938-8. Online ahead of print.

Summarized by Jennifer Haight, assistant editor

Authors of National Institutes of Health (NIH) supported research can no longer wait 12 months to submit their scientific papers to the National Library of Medicine's PubMed Central® digital archive (PubMed) for free public access. To increase taxpayers' access to federally funded research, the NIH Public Access Policy NOT-OD-25-047, originally set to take effect on December 31, 2025, is now active. The final article (or the 'accepted' manuscript including all revisions resulting from the review process), once published in a peer-reviewed journal, must also be deposited in PubMed for open access (OA). Nature asked Peter Suber, director of the Harvard Open Access Project in Cambridge, Massachusetts, as well as publishing specialists for advice to researchers regarding the new policy.

Authors who already publish their research in an OA journal (or the OA portion of a hybrid journal), will just need to make sure they submit their papers to PubMed at the same time. According to Lisa Hinchliffe, a librarian and academic at the University of Illinois Urbana–Champaign, the policy mostly affects authors who publish in closed-access journals (or the closed sections of hybrid journals), which require a subscription to read papers.

"Researchers will have to make sure that the agreement they sign with the publisher complies with the NIH policy, meaning that they are allowed to deposit the full version of the paper in PubMed Central without embargo. They might also need to submit the paper to PubMed Central themselves, because some publishers have indicated that they will not offer this service." Note that research published in some closed-access journals owned by Elsevier, Springer Nature, and others, must remain behind a 6 to 12 month paywall before the same paper can appear in OA repositories such as PubMed. When planning ahead for publication costs, authors have options:

- To comply with established publisher agreements, one option is to switch publication to the house's OA journal (or OA part of their hybrid journals), potentially triggering large article-processing charges (APCs). "Both Elsevier and Springer Nature told Nature's news team in statements that they enable authors to comply with the NIH policy through 'gold' OA publishing, a model in which articles are shared freely immediately after publication and the costs of this are included in the APC."
- Authors should check for agreements between their university and publishers in which the university covers the OA publishing cost. Recently some universities have reduced their purchase of subscriptions to free up funds.
- NIH allows authors to include 'reasonable costs' for publications, such as APCs, in their project budgets. So, some funders might help foot the bill.
- Some publishers, including the American Association for the Advancement of Science (AAAS), offer a 'green' OA option. "Researchers publish in closed-access journals, but are allowed to immediately post the accepted — but not the final, formatted — version of their manuscript to a repository such as PubMed." Other publishers offer this option for a fee.
- As a last resort, Suber says, some authors will have to change their publisher to both comply with the new NIH policy and avoid APCs.

Suber notes that as the NIH has laid off thousands of staff members this year, it might not have the capacity to track author

Newly Revived Kansas Mushroom Society

by Hank Guarisco, editor

The Kaw Valley Mycological Society was formed in 1986 by local residents interested in mushrooms. A newsletter, named "The Mycolog," was published four times a year, and there were monthly meetings where mushroom-related talks were presented to members. We even hosted guest speakers such as renowned mushroom photographer, Taylor Lockwood. The mycologs contained various news items and tabulations of what species were found on mushroom forays. Many of these sites were revisited frequently during the years, and the species lists contained information on seasonality and rareness of Kansas mushrooms.

"A Guide to Kansas Mushrooms" was published in 1993 by Bruce Horn, Richard "Skip" Kay, and Dean Abel. In 2022, Sherry Kay, Benjamin Sikes, and Caleb Morse produced "A New Guide to Kansas Mushrooms," which added many more species to the Kansas list, and provided detailed descriptions and images to aid in mushroom identification. Several checklists documenting new state records were privately published by "Skip" Kay before the second field guide emerged. The total number of mushroom species known from Kansas surpasses 1,400!

As the years passed, some founding members of the society passed away and others became unable to attend forays and meetings, so there was a lull in these activities. More recently, interest in mushrooms has spread to a younger generation and they have revitalized the mushroom society. Sherry Kay has continually collected mushrooms from the beginning until today, and her expertise in identification and field work has been relied upon by many throughout the years.

Readers interested in finding out more about mushrooms and the Kaw Valley Mycological Society can go to the KansasMushrooms.org website. Currently, there are no dues, and monthly meetings are held in the Kansas Biological Survey Higuchi building on KU's West Campus.

Book Review: Less is More

By Jason Hickel, 2020 Penguin Books.
Reviewed by Hank Guarisco, editor

I am very happy to have this book as part of my permanent library. The subtitle, "How Degrowth Will Save the World," says it all. Of course, this concept is not new, and you may feel that you know what is in this book just by seeing the title, but you would be mistaken. I have learned so much about the nature of capitalism and perpetual growth in an historical context, which enables me to gain much needed perspective on this subject.

The introduction clearly states: "This is not a book about doom. It is a book about hope. It's about how we can shift from an economy that's organized around domination and extraction to one that's rooted in reciprocity with the living world."

The author then proceeds to explain exactly how we have been destroying the natural world by systematically killing off many animals and plants that share this planet with us. Our addiction to fossil fuels has fueled a climate emergency by increasing greenhouse gas levels to historically unprecedented levels. Of course, most of us already know these facts, despite disinformation campaigns carried out by energy corporations.

The author then links these adverse developments to capitalism. However, it is important to understand the nature of capitalism. It is not to be confounded with "trade" and "markets," with which it is often confused. Markets and trade have been around for thousands of years, while capitalism is a relatively new phenomenon only several hundred years old. Capitalism is "organized around the imperative of constant expansion, or 'growth': ever increasing levels of industrial production and consumption, which we have come to measure in terms of Gross Domestic Product (GDP)." "Growth is the prime directive of capital. And as far as capital is concerned, the purpose of increasing production is not primarily to meet specific human needs, or to improve social outcomes, rather, the purpose is to extract and accumulate an ever-rising quantity of profit." "Within this system, growth has a kind of totalitarian logic to it: every industry, every sector, every national economy must grow, all the time, with no identifiable end-point."

Although growth sounds like a natural process, unlimited growth in a biological system equals cancer. This kind of constant consumption and growth has been portrayed in Star Trek series as the "Borg." "Resistance is futile. You will be assimilated." Many of us who recognize the ongoing catastrophic results of unlimited growth may feel that resistance is futile, for a variety of reasons.

Some believe that it is human nature to be greedy and selfish. However, indigenous communities around the world have been living in tribes and villages that communally share what is needed for survival. To personally own nature's gifts, such as land, water, and air would have been looked upon as silly. One who accumulated much more than was needed was considered sick, and native American tribes called him a monster, "Windingo."

So how did capitalism begin? The feudal system, where royalty owned the land and serfs had to pay tithes and taxes, was eventually defeated by rebellions and the depredations of the Black Death (Bubonic Plague), which swept through Europe killing one third of the entire population in the middle of the

fourteenth century. Labor was scarce, so peasants could earn decent wages, but they mainly supported themselves by growing crops and hunting in the forests. The elites could no longer build up their wealth, so the nobles, the church, and merchants united to end peasant autonomy by enclosing the collectively managed forests and pastures, and evicting the peasants from their lands. Entire villages were razed and people became vagabonds and paupers, who were forced to work for low wages in order to eat. The rise of the Industrial Revolution was fueled by cheap labor of dispossessed people.

This process of capital accumulation was furthered by the conquest of people and extraction of natural resources from the New World. The Enlightenment Period also furthered this system by stripping away animist views of nature, viewing organisms as machines and the living world as "natural resources." According to Francis Bacon (1561-1626), science should provide a means to conquer and subdue nature, 'bound into service, and made into a slave.'

The structure of capitalism is a treadmill which requires growth to generate a profit, which becomes capital to generate more profit, not to fulfill any specific need like feeding a family. Corporations must grow or die, because shareholders will not invest in companies that give them no return on their money.

Will technology save us? What about "green" growth? Although green technology, such as solar or wind energy, can help but only if we lower the amount of fossil fuels being extracted from the ground. Otherwise, alternative energy will just contribute to ever increasing growth that will further erode environmental systems. The concept of zero growth or degrowth of the economy is a very difficult one to accept. That is why the world climate accords opted for much more modest reductions in CO_2 emissions that will not inhibit the economy. However, the models assume that technology would be developed to capture and store carbon and that we could use biofuels. Unfortunately, these are hypothetical assumptions that have yet to be developed.

The author continues to explore options and pitfalls such as recycling and creating a circular economy. The growth imperative makes it much more difficult to achieve. If growth is no longer at the center of the economy, the ecological crisis becomes easier to solve.

The second half of the book begins by explaining why the GDP is a very poor measure of progress. A farmer who is self-sufficient and produces food for his family, doesn't contribute to the economy, but should he lose the farm, go to work in a factory for minimum wage, then he contributes to the GDP. Money spent on cleaning up after disasters such as hurricanes and tornadoes also increases the GDP. Therefore, rising GDP does not indicate a healthier society. Since a growth-oriented system is not meant to satisfy needs, but rather to perpetuate needs so more profit can be made.

One practical step towards degrowth is to end planned obsolescence. Appliances and technological gadgets are not made to last, and repairs can be too costly. Another step is to reduce advertising. We are bombarded by messages that we need more stuff to be happy. We can also share expensive equipment and not rely on personal ownership.

We live in a complex world, a world which we are destroying by the structural form of our world economy. This book is a wise treatise on the issue and offers valuable insights on potential paths to saving the earth.

Dryad's Saddle, a Spring Mushroom

by Hank Guarisco, editor

On April 25, 2025, I went looking for morels, without success, but came upon an interesting polypore mushroom with two common names: "Dryad's Saddle" and "Pheasant Back". The specimen, scientifically known as *Cerioporus squamosus*, consisted of three overlapping shelfs originating from a single base that was attached to a decaying log in open woods near Eudora, Kansas. It can be recognized by a series of darker brown, overlapping scales which give the mushroom the appearance of a pheasant's back. With a little mythological imagination, one can envision a wood nymph riding on this mushroom. Since it grows in North America, Asia, Europe, and Australia, wood nymphs appear to be scattered across the globe.

Unfortunately, the mushroom I collected was too old and tough to eat, but since it has medicinal properties, I sliced it up and placed the pieces in a food dryer on low heat overnight. Dryad's saddle contains vitamins B1, B2, B12, C, and D. It is also a good source of iron, phosphorus, potassium, copper and selenium, as well as antioxidants in the form of bioactive carotenoids and terpenoids.

Health benefits include: regulating the immune system, killing common bacteria (*Staphylococcus aureus* and Pseudomonas aeruginosa), protecting the kidney and liver via anti-inflammatory and antioxidant effects, as well as fighting cancer. Dryad's saddle possesses the lectin protein PSL 1a, which binds to glycans in cancer cells, then kills them biochemically (webmd.com/diet/benefits-of-pheasant-back-mushroom).

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