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JEANNE BOYLE: Good afternoon. Thank you very much for a response. That's very good! I'm Jeanne Boyle. I am currently Interim Vice President for Information Services and University Librarian for the Rutgers University Libraries and I have the great pleasure of welcoming you here this afternoon to the -- I have to look at the number -- the 29th annual Lewis Faugeres Bishop III Lecture.

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The Bishop Lecture was named in memory of the son of Lewis Faugeres Bishop, Jr., a prominent cardiologist and book lover who founded one of the excellent New York private libraries at the New York Racquet Club. Dr. Bishop had close family ties to Rutgers in New Brunswick although he was a Yale graduate. If you think, on the College Avenue campus here we have Bishop Place, we have Bishop House. Those are all associated with him and his family. He was able to attend the first Bishop

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Lecture in 1985 but sadly, he died the following year. In his honor, the annual Bishop Lecture brings noted scholars and subject experts to Rutgers to offer their insights on diverse topics related to book and manuscript collecting, printing history, and the use of rare, archival materials for research. Past Bishop Lectures have featured talks on Black bibliophiles, Japanese printing, the discovery of the *Huckleberry Finn* manuscript,

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the recovery of the confiscated Giteau Lee's autograph collection from Europe and more recently a lecture on early Roman Republican coins that was given by Ernst Badian from Harvard University. He subsequently gifted his collection of coins to the Rutgers University Libraries and we're engaged in a very large project to digitize them, which is quite marvelous. Last year's lecture, *Forbidden Words, Taboo Texts, and Popular Literature and*

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Cinema, was delivered by film critic and Star Ledger columnist, Stephen Whitty.

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The theme of this evening's lecture, *Old Herbals, New Readers*, is particularly fitting given recent developments at the university and, by extension, at the University Libraries as well. In July 2013, Rutgers integrated with the former University of Medicine and Dentistry of New Jersey (UMDNJ), formally establishing Rutgers Biomedical and Health Sciences, which is now one of the nation's largest and most comprehensive university-based centers for studying

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and improving human health and health care. As part of those changes we're very happy that the George F. Smith Library of the Health Sciences in Newark and the Robert Wood Johnson Library of the Health Sciences in New Brunswick became part of the Rutgers University library system. With the addition of these libraries, Rutgers now offers outstanding resources in

medical education and consumer health and wellness information, in addition to the only collection in the state entirely

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devoted to the history of medicine in New Jersey. Beyond exploring the history of the herbal, a fascinating and enduring book form with a tradition stretching back to antiquity, tonight's talk marks the opening of an exhibition of rare books and documents which is entitled *The Art of Healing: Early Herbals from the Rutgers University Libraries*. This is a collaboration between Special Collections and University Archives here in New Brunswick and the History of Medicine Special Collections

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at the Smith Library in Newark. The exhibition illustrates to me the great potential offered by engaging in partnerships with our new colleagues at the Health Sciences Libraries and leveraging the unique resources in the collections they steward. So, after enjoying the lecture, I invite you to see the fruit of one such partnership by visiting the exhibition in the Special Collections and University Archives gallery which is on the ground floor of the building; it's below the lobby and the best way to get there is going down

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the stairway from the reference room in Gallery 50, which is in the lobby itself near the main entrance. So now I have the pleasure of welcoming Fernanda Perron who is head of the exhibitions program for Special Collections and University Archives and she will formally introduce our guest speaker.

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Thank you very much and enjoy the evening. FERNANDA PERRON: Thank you Jeanne and

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thank you for coming. Before introducing Dr. Karen Reeds, I would like to say a few words about the exhibition, *The Art of Healing: Early Herbals from the Rutgers University Libraries*, which opens today, and to thank a few people. I was of course, aware of Special Collections' excellent collection of herbals, which had actually been exhibited back in the 1980s before I came to Rutgers. I had vaguely thought about doing another exhibition at some point.

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Two developments, however, made me realize that now might be a good time. In early 2014 Dennis Fox from the wonderful Rutgers College class of 1962, donated a beautiful edition of *Tractatus de Herbis*, a medieval manuscript herbal in the British Library to Special Collections -- and Dennis is here today. Thank you. The book is on display in the gallery. The second factor was the realization that Special Collections

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in the history of medicine at Rutgers Newark, which Jane just spoke about, had done an exhibition of their outstanding herbal collection back in 1996. With the recent integration of the libraries the time is truly ripe for a major exhibition on herbals and herbal medicine. I've been delighted to collaborate with Bob Vietrogoski, the collection curator on this project, as we started planning the exhibition, another natural collaborator, the School of Environmental and

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Biological Sciences, better known as SEBS and its Chrysler Herbarium, immediately emerged. I would like to thank and acknowledge Dean Robert Goodman of SEBS, who is here, for sponsoring the reception following this program and helping with publicity. The publicity was so great that my friend told me she found exhibit flyers in the RU Connection office in ASB 3. So that's

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great publicity. The reception following the exhibit will feature herb-infused h'orderves and some New Jersey wines. I would also like to thank professor Lena Struwe, Director of the Chrysler Herbarium, for generously loaning specimens -- some over 150 years old, some just a few months -- and advising us on their proper

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nomenclature. Lena will be doing an informal program on May 6, so I hope you can also attend that program. Numerous people and organizations helped make this program and exhibition a reality. While a complete list can be found on the back of your program, I would like to briefly thank a few people now. First, Jean Boyle, University Librarian and Interim University Librarian and Vice President for Information Services,

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for her support of the Bishop Lecture and of our exhibitions programs. Second, I would like to thank Matt Badessa, who is out at the table. He's new in the library's Communications Office and it was been a true pleasure to work with him. Tim Corliss, Head of Preservation at Special Collections and University Archives and his hard-working assistants did a truly heroic job of building mattes, frames, and all of the physical behind-

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the-scenes prep work that goes into an exhibition and I think they may still be there. The Art of Healing exhibition had several co-curators: Kathy Fleming, Curatorial Assistant at Special Collections. Katcha Oldman (sp), my wonderful ex-tern from Douglass, and myself. The real vision behind this exhibition however is that of our other Curatorial Assistant, Flora Boros (sp). Flora served as Lead Curator of this exhibition

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and as you will see, did a fantastic job. I was going to acknowledge her, but I think she's still downstairs. But her parents are here. They created her so, thank you. Hopefully you'll get to meet Flora later. Now, without further ado, I would like to introduce our featured speaker, Dr. Karen Reeds. Karen Reeds is a Fellow of the Linnean Society of London and past president of the Medical History Society of New Jersey.

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After taking her M.A. in Botany from University of Michigan and her Ph.D. in History of Science from Harvard, she worked for many years as an acquisitions editor at University of California Press and here at the Rutgers University Press publishing in the biological sciences, medicine, consumer health, and the history of science. Her own books include *Botany in Medieval and Renaissance Universities*, *Today's Medicine*, *Tomorrow's Science*, *Essays on Passive Discovery in the Biomedical*

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Sciences, *Visualizing Medieval Medicine and Natural History: 1200 to 1550*, and *A State of Health: New Jersey's Medical Heritage*. As an independent curator, she has mounted exhibitions on veterans' history and health, Linnaeus in the new world, medicine and public health in New Jersey -- and that exhibit was here a few years ago some of you probably remember that was a great exhibit -- and

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Also, on the botanical photography of Dr. Jonathan Singer. Currently with an NJ 350 publication grant from the New Jersey Historical Commission, Dr. Reeds is writing a book about life in 18th century New Jersey as observed by the Swedish naturalist, Peter Kalm. She lives in Princeton where she is an active member of the Princeton Research Forum, a community of independent scholars. On a personal note, Karen was extremely helpful

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with the exhibition. As a former editor, she actually read most of the captions -- except for the ones that I wrote last night -- and her help was invaluable. I am delighted to introduce the 29th annual Lewis Faugere Bishop III Lecturer, Dr. Karen Reeds whose topic today is Old Herbals, New Readers.

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KAREN REEDS: First question, can you hear me?

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My voice tends to go down. So, if you can't hear me, could you please cup your ears in the back and or yell, "Speak up!"

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That's especially true because I might be wandering back and forth between the laptop and the screen. So, first of all, thank you very much everybody for coming on this beautiful spring day. Thank youm Fernanda, Jean, for the invitation to give this lecture. Thank you Flora Boros (sp), who

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should be up here and as we heard, is still working on the exhibition, for putting together what is a really wonderful exhibition. I haven't seen it in place yet. No one has, right? I've been able to see some of it in the process and of course read the labels, and it really has taught me a lot as we've gone along. I was delighted to discover another history of medicine connectio

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between the art of healing and this lecture. Lewis Faugere Bishop III was a member of a distinguished New Jersey medical family. His grandfather was the first person in America to call himself a cardiologist and his son also became a cardiologist and I believe the grandson, for whom the lecture is named, did too. A 1982 newsletter of the Medical History Society of New Jersey,

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just a couple of years after the society got started, records that Lewis Bishop III gave a talk on Oliver Wendell Holmes. So, I have a happy connection with that. After I gave Fernanda the title to this talk, *Old Herbals, New Readers*, I realized I was taking it for granted that everyone who saw this title would understand herbals to mean

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old books about plants, but herbals also means, of course, the plants themselves and the products from them. Before I go any further, let me just get a sense of who's here. Who came primarily because they're interested in old books? OK. Who came because they're primarily interested in herbals as medicines, plants? OK. Thank you.

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Of course, I am sure that there's a great overlap. It's especially hard to separate those two meanings of the word herbal because both have been connected in the news very recently. Just a couple weeks ago.

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a group of researchers at the University of Nottingham in England announced that a remedy for stye, which is an infected eyelash follicle -- you don't want to have it -- had found a new potential use. The remedy is, I'm condensing this, take crop leek and garlic --so

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two kinds of onions -- of both equal quantities, pound them well together. Take wine and bullocks gall -- so that's gall from a cow, ox gall -- and mix it with the leach. Let it stand for nine days in a brass vessel, and so on, so forth. The Nottingham folks, which was a group of medieval [specialists], an Anglo-Saxon expert, and microbiologist have found that when

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they tried compounding this remedy that it was very effective against the horrible strain of bacteria known as MRSA, methicillin-resistant staphylococcus aureus.

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I should say that the word leach here in Bald's Leach Book (sp), means leach as a physician. Although of course it can mean the bloodsuckers that they employed as

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part of their practice. So, here is a little snippet from the manuscript for Bald's Leach Book. A few years earlier another British collaboration of medievalists and microbiologists

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at the University of East London had announced other promising remedies in three Anglo-Saxon medical texts. Among other things they found that Marrubium, White Horehound, which is an ingredient in quite a number of Anglo-Saxon medicines, showed both anti-MRSA activity and anti-Malarial activity in their abstract. Here they highlight

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achillea millefolium which is actually yarrow, a very common weed, as a possible source of pain killers like ibuprofen.

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There's the ibuprofen part of it. A less happy story about herbals

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has also been in the news recently. The State Attorney General of New York found that many samples of the most popular herbal supplements in drug stores like Target, [and] GNC apparently did not contain the plant's named on the labels. The six that they looked at were St. John's Wort, Valerian root,

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Ginkgo Biloba, Ginseng, Garlic, Echinacea, and Saw Palmetto. Here's the picture that the *New York Times* printed of Target supplements. What they did contain apparently was plants that are not listed on the labels: rice, spruce, asparagus, Daisy, and the tropical ornamental house plant, Dracaena.

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There is now not just the New York Attorney General, but a number of other state Attorney Generals coming together to investigate this outside New York

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and other states and to appeal to Congress to instate Pure Food and Drug labeling for herbal supplements.

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I would remind you that Squibb, who worked here in New Jersey, founder of Bristol-Myers Squibb, spearheaded the Pure Food and Drug Act just a little over a century ago. So, I think maybe it's time for a revival of that. Together, these two stories that represent two different ways of looking

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at the use of herbal medicine,

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both of which have a very long history. The optimists will say plants will cure what ails you. The pessimists will say when you put your hope in herbal cures somebody will be happy to take your money. So we have Bald's Leach Book calling his remedy for sty the best in leachdom.

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Leachdom here means medicine in general. In antiquity we find the great and classical antiquity's greatest authority on herbal medicine and pharmacology, the Greek physician Pedanius Dioscorides and Azarbius (sp) warning against fraud and adulterated drugs. So here are just two examples

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from the beginning of his great work De Materia Medica. Valerian, which we just saw mentioned, in ancient times, it was adulterated with the root of Butcher's Broom. But he says you can tell because it doesn't smell right. The Butcher's Broom doesn't smell and Valerian does. Saffron. Again, the presence of dust and musty smell make it give you the clue that there's been adulteration.

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Obviously, these things were not packaged in nice little capsules.

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Now I should digress a moment to talk about Dioscorides. He is such an important figure in the history of herbal medicine that the entire exhibition downstairs, the entire history of European and American herbal medicine can be seen in some ways as a commentary on Dioscorides.

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Essentially all we know about him is that he was a Greek physician and he tells us -- this is all we know is what he tells us himself -- born in what is now Turkey in the first century of the Christian era. He led, he said a soldier-like life, traveling through much of the Greek-speaking parts of the Eastern Mediterranean, possibly as far west as Sicily and Southern France which had Greek-speaking communities. Possibly attached as a civilian physician to a Roman legion for a while. His great pharmacology

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book *De Materia Medica*, which gives us the Latin translation of the Greek gives us our term for the materials of medicine; materia medica. That book is an ancient forerunner of the modern Physician's Desk Reference [PDR]. Dioscorides lists and describes about 600 medical substances, mostly plants, and about

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2,000 ways of using them in practice. As I said, most are plants or parts of plants, but he also explains how to use animal and mineral products and some things that you would not think of as medicinal like the grime that collects on the walls of gymnasias.

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Yes, charming but worth knowing about. You never know. The oldest surviving manuscript which is known as the *Juliana Anicia Manuscript* or the *Vienna Dioscorides*, because that's where the manuscript now lives -- has lived since the 16th century. It is gorgeous and you can see facsimile pages of it in the exhibition. I'm not going to show any here. The fact that the copy was made as a sumptuous wedding

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present for a Byzantine princess is in itself a sign of the respect that the ancient world had for Dioscorides' work. It's almost like giving your

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daughter or whoever presented the gift your own personal pharmacist. During the Middle Ages and the Renaissance, Dioscorides' *De Materia Medica* was translated from the Greek into Latin to Arabic, several European vernaculars. Dioscorides was rather cryptic about how he organized the book. He says that they are arranged by the plant's natural properties but he doesn't

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tell you which natural properties -- how one leads to the other -- and it was not long before the whole book was rearranged into alphabetical order to make it easier to look things up. For the English-speaking world, *De Materia Medica* has been difficult to consult because no one published a good English translation until

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10 years ago. I will hold it up. Here it is. This is a translation by Lilly Beck. You can see it's quite a substantial, thick, fat book. It's very beautifully translated, very clear, but it has its problems.

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Lilly Beck translated it primarily for fellow classicists rather than for medical practitioners, herbalists, ordinary consumers, bio-medical researchers. Now speaking as the one-time Science Editor for Consumer Health at Rutgers University Press, I would say that her publisher is missing a bit. Despite the high price of that book, despite

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the difficulties of using it, there are problems with some of the indexes, in my opinion, and it sure helps to know a little Greek. If you are seriously interested in herbal medicine, either as a consumer or as a professional, this book belongs on your shelf.

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You can just read through it with great pleasure and interest. Every page teaches you something new. I

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might add that it's not yet in the Rutgers University Libraries and it should be. It should be. Now, getting back to my title, *Old Herbals, New Readers*, I want to propose that the title is

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true in every era. That old herbals always find new readers. Now a literary historian or a documentary historian would say well of course, sure. Every text can be -- is likely to be -- has to be reinterpreted in every generation. Now however true that is for literary or religious texts from antiquity, it seems to me really extraordinary though that

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a reference book, a reference book -- which is what Dioscorides' *De Materia Medica* is in essence -- should continue to be useful in practice for two millennia. Two thousand years and more so because the *Materia Medica* and its more recent offspring and offshoots are very conservative in content and internal structure. The only other ancient, non-fiction

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text that I can think of that still has a reputation and a use, more or less, in a somewhat comparable way is Euclid's *Geometry*. I don't think that gets used as often.

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The traditional historical approach to analyzing and the reinterpretations of Dioscorides over the years would be to compare versions of the text to see what gets added, to see what gets dropped, how it's reorganized, how it's excerpted, how it's praised or condemned. That is still a very important task that is not yet finished and will continue to go on

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. But in recent years historians have added to their repertoire an approach that looks at what is often called the material culture of the book. What is this physical object in our hands? By bringing the herbals off the shelves and into the display case and into the light, an exhibition like *The Art of Healing* here helps us see how people over the past 2,000

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years read their herbals, used them in everyday life. In ways that we don't always consciously register, the physical appearance of books records their makers' intentions, what their writer, what their publisher, what the publisher's marketing department wanted, expected in the way of readership. We also know

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from our own experience with our own most heavily used books that the physical appearance of a particular volume is shaped by the readers hands over the years of using it. If, often to the despair of the wonderful people down in the Rare Book Room who have to conserve these tomes and the herbals are often very, very tattered. If they survived at all they're either beautiful

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or they're in a mess. So today, if we want to return to these books to mine their content

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for new drugs -- as the people at Nottingham and the University of East London and many pharmaceutical companies want to do -- I'd argue that the more we notice and understand about those earlier intentions and uses and users, the more likely we are to succeed in understanding how to mine for those drugs. Pragmatically this new emphasis on the material

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culture what we can see and what we can hold helps overcome our increasing ignorance of the languages of the books. If we can't read them at least we can look at them. We can look hard at them. So, let me turn to some examples of herbals from the late 15th century and to the Middle Ages roughly in spirit at any rate and the beginning -- but also the beginning of printed books in Europe to

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the late 17th century. Some of these are from the exhibition. Others I've pulled from the internet and I apologize if I haven't shown something that's a favorite of yours or even of mine. There are just too many that I would have loved to have shown. Before I point out some details of what's on these pages, here are two pages opening from

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Gerard's *Herbal or General History of Plants* published in England in 1597. Before I point out some details of what's on these pages, first notice the heft of it. You can see that there's a lot of pages in there.

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Goes back here, goes back there. It's a very, very big book and the size emphasizes its claim for our attention. We can expect to find a lot of information in here in thousand plus folio pages. The structure of any given entry for an herbal -- any given chapter about a plant -- runs roughly like this: Gerard

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gives the Latin plant name, its vernacular name, the chapter number, the kinds and varieties of that plant, a description of what it looks like, what it smells like, what its texture is, where it grows, the place, the time, what season it comes up, flowers, fruits. Its names, again the whole variety of names that it has acquired over the history of the plant that Gerard or his predecessors could assemble

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. The temperature. In Galenic medicine and humoral theory, every person, every living thing has a as a temperature or temperament. That is, some sort of balance between hot and cold. Dry and moist. These become the four humors. I'm not going to explain this in any more detail just now, but this is the sort of the fundamental theory of ancient medicine -- medicine through at least the beginning of the 17th century at the very least. Finally, the virtues; what it's good for, how you prescribe it, how you compound it, how you use it, prepare it, who you give it to, and then illustration. So, let me go back to the picture.

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I think I have to do this with the laser pointer.

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The names. The description. The first sort. He gives personal experience, "I have another sort of Valerian which was sent to me which is a Mexican kind."

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He goes on to others. The place. "The first kind of Greek Valerian is planted in gardens. The wild ones are found in moist places close to rivers, ditches, watery pits." Let's see. The time: these flower in May, June and July. Generally, they're called by one name; Valeriana in Greek and so on. Then he gives many other names including

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German, Dutch, English, French I think. He then goes on to the temperature: "Garden Valerian is hot as the Ascardia (sp) sayeth, but not too much." Gives a little more account of what temperature these are. Finally, the virtues -- again, "as the Ascardia (sp) teaches,

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provokes urine and bringeth down the desired sickness."

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I can't read this myself. Sickness.

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I will let you look it up yourself. At any rate, this is the general structure of an entry carries across herbals, by and large through the centuries. Dioscorides used something very similar, although more condensed.

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Almost all of the herbals you'll see in the exhibition have some variation on it. Compared to the heft,

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the size of *Girard's Herbal* in 1597, here is the *Herbarius Latinas* from just about a little over a century earlier; 1486, and you can

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begin to see how much change happened in the course of that century. Just from the difference in the look of the illustrations. This is an earlier edition of a book that is in the exhibition, the *Dutch Herbarius*, which is in a facsimile that was donated by my dear friend and colleague the late, David Khaled (sp) whose donations and knowledge

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have a lot to do with the wealth of Rutgers University Libraries strengths in the history of pharmacy and pharmacology.

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So, I'm very happy to be able to remember him today. You'll note that the coloring is very simple. The form of the plant is very abstract and there is coloring added to the text.

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You can see the little red mark on the name "Asarum," here. The underlining in red.

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The little bit of red at the end. These are tricks of the medieval manuscript rubricator to help you find your way around. There's also a little bit of red here for the recipe "R". "Take Asarum, amios (sp)," and so on, to make a remedy.

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But this book is still very close to the medieval manuscripts of herbals that went before it. The big change comes with the herbal of Otto Brunfels' *Herbarum Vivae Eicones*, which means living images of plants; probably one of the best titles in the world, published in 1530 which had this enormous change in how plants were

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illustrated in an herbal. It happened in 1586 to 1530, one person could have seen the change in a lifetime. From the utterly stylized to the utterly naturalistic and you'll notice that Weiditz, the artist,

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has wilted leaves. This is a portrait of an individual specimen, not a generic specimen and it reflects both this ability to reflect this kind of detail. Reflects the kind of artistic changes in the Renaissance that we know from Leonardo da Vinci, Michelangelo, and so on, but also the technique of wood cuts have

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improved drastically in the course of a generation. It's not colored and wasn't probably intended to be colored but undoubtedly, I'm sure that there are copies that have been. Let me go on to the next. The lower

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illustration is the immediate successor to Brunfels again, extraordinarily naturalistic illustrations that have been colored. Even a few years later, Eganoff (sp), the publisher of this edition of Dioscorides has ripped off illustrations from Brunfels and Fuchs and made them again getting simpler. So, the copying has corrupted

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the quality of the illustration. If you look at this funny modeling around the edges of the cyclamen leaf, you can see that here it's just sort of a gesture toward a detail. In this one, the Fuchs, it was carefully described by the illustrators. Now one thing

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I should say, that this copy of Dioscorides is in the exhibition. It's owned by Rutgers. One question that I used to get a lot when I first started studying herbals,

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and I hardly ever hear now is, "Well, did people really use those plants?" and that speaks to the change in our own practice of using herbal supplements. But the answer is, "Absolutely." Let me give just give you a few more views of Fuchs to show you. He expected his illustrations to be colored. He told his artist leave out as

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many details of texture and shading as possible. The middle illustration of the pumpkin is from his own personal copy that served as a master copy for other colored copies. Did they use the books? Well. Back to *Herbarius Latinas*, yes. Here in the margin it says "pro

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oculos." That means "for the eyes," and it's clearly written by the same person who added the red marks -- the rubricator. So, the rubricator was using it in some form, and you can imagine he might have had trouble with his eyes. But equally interesting to me, this was this was a gift, I didn't expect to find this when I was looking the book up online.

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If you look

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right there you will see

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a tiny flower that has been pressed in the book in the margin. It's unusual to find these because over the years librarians and booksellers and conservators have gotten rid of junk inside the books. They can wreck the pages. They can ruin the books. They can attract bugs. So, I always am delighted to find them. The problem is, of course, you don't know when it got in there, who

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put it in, and they're often in such [a] scrappy, fragmentary state that it's hard to figure out what they are. I don't know. Lena, can you figure out what that is?

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LENA STRUWE: Maybe. KAREN REEDS: OK. Well we'll look at it more closely someday. Another

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sign of use is this, from the same copy of her *Herbarius Latinas*, somebody wrote in a plague [remedy]. I personally can only read the one word here that tells me that which is "pestis" up here, "odd-something pestis". Probably preservonda (sp) or preserativa (sp). The rest is in a mixture of Latin and German. The

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hand is late 15th century. Somebody thought that this book was the right place to keep that information. So yes, another way of using the books. A different way of using the books. It shows up in later annotations. This here is a 17th century copy of John Parkinson's

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Theatrum Botanicum, the *Theater of Plants or An Herbal of Large Extent*, it's even fatter than *Gerard's Herbal*. This is Rutgers' copy. They're both from the same book just different photographs so the colors look different, but if you'll notice over here on the side there are annotations which turn out to be cross-references. So, there are botanist scholarly comparisons

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and down here, "Barbary,"

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which is a reference to where you would find this plant, where it came from. It reminds us that this was the age of exploration. That people were going, not just to America, but also to Africa, to India and

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Latin America. This is an odd one. I think of astrology as art. So, in any case. But I just wanted to show you the way

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Joseph Blagrove, late 17th century. Could have been a contemporary of John Parkinson, more or less, combined humoral theory -- the temperatures: the hot and moist; cold and dry -- with astrology to tell you what plants you should be using. As a wound ointment he especially recommends this wonderful ointment

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for wounds composed of the four elemental parts of man's body. "The seven planets being applied thereunto, its making and use followeth. The Ingredients: the moss from a dead man's skull,

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Man's Grease," you remember that stuff on the grime of the gymnasia? "Mummy," that means the dust of Egyptian mummies or what was sold as that and "Man's Blood," and then you've got linseed oil, roses and bolearmeniack which is an earth. The last three ingredients are just added to help bring into a subtle ointment.

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He gives you the elements; the nature: cold, moist; the complexions; phlegm; color; melancholy sanguine; and the planets to use it for. I see that I'm running out of time, and you can tell that I have lots more to do. I want to give you.

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The next two examples I have included because they show the kind of emotional connection that I at least feel with some of the owners of these earlier herbals. This little chunk of a book, it can fit in your hand, was probably brought to this part of the world, to the Delaware Valley, in the mid-17th century to the little Swedish colony there. Timon Stimmen.

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It was probably the only medical book in the Delaware Valley at the time, and it's impossible to know how it could have been used.

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I mean these were not the plants growing around them. This one, which is very hard to read -- I include because of the inscription. "Mary Ward. Her book given me by my granny."
It's probably a child's hand or a teenager's hand showing the use and passage of these books across generations from one woman to another

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for their use. This is a book in English translated from French and Latin. One of the big problems that

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everybody who uses herbals did confront [and] continues to confront -- Flora was complaining of it early in the exhibition -- how do you identify the plants? How do you sort out their names, what they are, how they're related? This is *Pinax Theatri Botanici* of Gaspard Bauhin which is page after page like this; just one plant name after another, but

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what he has done, and it makes it an absolutely essential key to connecting botany from Linnaeus onward to botany before Linnaeus, is that he's told you who gave which plant what name and what book and what he, as a very, very, very, experienced botanist thinks is the right name to use. Linnaeus adopted many, many, many of those names and also the habit of using

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a two-part name for the books. Here, from the picture I showed you earlier of the Parkinson, here are bigger versions of the annotations of a botanist to using Gaspard Bauhin, CB, and another one, Dodanaeus (sp). in practice.

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The examples I've shown are all either books produced in the first two centuries of a new technology -- that is to say things written, printed, painted, stuck into books -- in that period.

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To record, store, share, information about herbs and cures. Now when we're dealing with these books we're dealing with a new technology of accomplishing the same ends and some of the issues are obvious. How do you get the books?

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It's a lot easier now that you can look online and find digitized copies. I've used them over and over again. The languages are a problem, and we're further and further away from those languages. I can tell you, you should not rely on Google Translate. Identifying the plants might be easier. You can search on the names. You can see other search engines. You can use, among other things, the wonderful

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site, www.itls.gov, which helps you translate between scientific names and common names and shows you where they fit in the.

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botanical relationships. Linnaeus is known for

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Creating the binomial nomenclature, a schema of species of names for plants that was especially useful in his day,

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and up until now -- up until recently -- was figuring out the hierarchies of relationships of plants. Now, it's the uniqueness of those names that makes them really useful on the Internet. You can count on the spelling and the name being stable from one site to another. It's hard to identify the sicknesses; what people called

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Consumption long ago, is that the same as tuberculosis? Well probably, but other diseases are a lot harder to identify. The descriptive terminology, the visual emphasis; the emphasis is on flower structure today. Those are issues that cut across the centuries. What are less tangible issues are worth pointing out. How do you figure out how the practitioners work? We got. For instance, we

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got lots of different remedies, different plants used as a remedy for a given medical problem for the eyes: problem "pro oculos", and in the other direction any given plant can be recommended for a host of very different ailments. Is that a practical way to deal -- that vast number of remedies, vast number of plants -- is that a practical way to deal with the seasonal and geographic variation in the availability of plants? Or does it mean that the texts

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have simply accreted, been added to and accreted over the years from different sources? Does the repetition of a remedy from one herbal to another mean that we real life experience has kept it in the backpack of the herbalist?

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Or does it mean that the herbals are simply drawing from the same source -- Dioscorides in particular -- or that everybody is copying everything over and over, whether they believe in it or not, just to be on the safe side. That "you never know principle." I think that can be a real problem in how we use early herbals to make new drug discoveries. We also have to worry about the theories; why remedies

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work. Are we likely to investigate that wonderful ointment for wounds when we see it being cast in the language of both Galenic medicine and astrology? Who knows maybe the moss from a dead man's skull does do something. Now that I've spent a lot more time reading what Dioscorides says, thanks to Lily Beck's translation, I suspect one reason that the book retains so much authority is that Dioscorides

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described effects, but not their causes. That allows each generation to impose their own systems of thought on him and today that would probably be natural product chemistry, molecular biology, evolution, genetics, being applied to it. A third tangible issue is who owns the plants? Who owns the knowledge? Politics and economics, which you may just call greed, increasingly

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collide with cultural traditions, closely held secrets, environmental degradation, the 17th century note "Barbary" in the margin that we saw as a reminder that the drug trade -- both kinds of drugs -- and the exploitation of other cultures, other lands, goes back a long way. I want to draw your attention to a really brilliant new book on this.

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Bitter Roots: The Search for Healing Plants in Africa by Abena Dove Osseo-Asare published in 2001 by the University of Chicago Press.

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It's just an admirable treatment on every aspect. Yes. [inaudible comment from an audience member] Yes. I should say that

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I believe that the PowerPoint and this talk will be put on Rutgers Core, RU Core, so you don't have to get everything down in your notes. But it's a hyphenated name; O-s- s-e-o, Osseo, hyphen Asare, a-s-a-r-e. University Chicago Press,

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But Google it under "Bitter Roots" in 2014.

00:58:14

Okay. Yeah. I started off with that up the minute news story that fuels the optimist's hopeful view that reading old herbals will bring us to new drugs. Let me come full circle back to the end with a story about why we need to pay attention to old herbals. Probably everyone in this room will remember that. In around 1996-97, St. John's Wort, *Hypericum Perforatum*, became a celebrity herb as an alternative

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treatment to relieve depression. As it became big news, good news, it also became, as the recent news story and investigation indicates, [it] became big money.

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Starting round then, John Riddle, a historian of early medicine and botany at North Carolina State -- the world's authority on Dioscorides. I've independently started digging into the herbal traditions around this very common weed, -- you can find it here --

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which had previously in America been known mostly as a noxious weed that could poison cattle -- and both John Riddle and I knew from our reading that early herbals don't recommend it for conditions that would be regarded today as depression.

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Normally that would be melancholia. Professor Riddle made his own headlines in *The Los Angeles Times* in 1998 and again in 2000 by saying that the herbal tradition for St. John's Wort says pregnant women should not use this herb. Dioscorides is very clear, applying St. John's Wort to the womb as a pessary could bring on menstruation, that is, it might

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induce a miscarriage.

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Riddle's pronouncement carries special weight, not only because he wrote the classic study *Dioscorides*, he also wrote the classic study of contraception and abortifacients in the ancient world. It didn't matter.

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Even though we had a big audience, big headlines, for the next decade, the use of St. John's Wort continued to boom. It showed up not only in health food stores and alternative medicine places and pharmacies, but in drugstores and supermarkets. But the warnings were very rare and let me just end with some pictures of St. John's Wort. Two bottles that I bought in my local ShopRite

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supermarket. The one on the right is the old one that I bought in 2009

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and this one bought in 2011. They are virtually identical, but in the 2009

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one there is no warning. Two thousand eleven (2011) there is and I would like to think that I'm partly responsible for that because I wrote to ShopRite and said, "Hey, did you know about what John Riddell has said and there's also been more science to this effect?" So now, if you read -- if you can read the label -- there is a warning drawn from the experience

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of a 2000-year-old, brilliant physician and pharmacologist. Being a new reader of old herbals has taken on a new meaning in the 21st century. Read the labels.

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Thank you.

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I'll be glad to take questions. I was warned by the audio tech guy that this is being recorded for use by RU Core so it'll be on the web, ready [and] open to anybody, so if you don't want your voice or your question to be preserved that way, don't talk while we're on tape. Come up and see me later.

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Okay so questions if you've got [any]. Or they're just too hungry.

01:03:04

All right. Well. Thank you. FERNANDA PERRONE:

01:03:11

So, I'd like to thank Karen for that fascinating presentation.

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I'd also like to acknowledge Flora Boros (sp) and Kathy Fleming who just, in the back there by the door. Please stay.

01:03:29

Enjoy the reception and come down and see the exhibit. Thank you.