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Coordinating Expertise to Preserve and Increase Discoverability of Key University of Tennessee Agricultural Serials

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Abstract

This article describes a successful collaborative effort between a branch and the main campus library at the University of Tennessee (UT), Knoxville, to digitize agricultural serials. Experts in agricultural content, preservation, digitization, and metadata worked to preserve three agricultural print publications and make approximately 3,800 issues discoverable for patrons on campus and beyond. This discussion provides a background to Extension and the Experiment Station in Tennessee, outlines previous attempts made to digitize agricultural serials at UT Libraries, and details decisions made during the digitization process and metadata creation. These experiences offer a model for other libraries pursuing similar digitization projects.

Key Terms: agricultural publications; digital collections; digitization; agricultural extension; agricultural experiment station; preservation

Introduction

Preservation efforts focused on agricultural literature in the United States began in earnest in the 1990s through the National Preservation Program for Agricultural Literature (NPPAL), but several states, including Tennessee, had only recently successfully preserved their agricultural resources. From 1996 to 2008, the National Endowment for the Humanities (NEH) also funded the digitization of agricultural materials from 29 states (Caminita, Cook, & Paster, 2017). While impressive, this left many states without external support for the preservation of their agricultural publications. Since the termination of the NPPAL's NEH-funded program, new initiatives to preserve these resources have developed, just as the methods for preservation also have evolved. In 2017, University of Tennessee Libraries (UT Libraries) received funding from Project Ceres, a collaboration between the Center for Research Libraries (CRL), the United States Agricultural Information Network (USAIN), and the Agriculture Network Information Collaborative (AgNIC), which supports the print preservation and digitization of agricultural publications from each state's Extension and Experiment Station. As of 2019, 13 states had not participated in either a Project Ceres award or NEH grant: Alaska, Delaware, Maine, Massachusetts, Nevada, New Hampshire, New Jersey, Oregon, Rhode Island, South Carolina, Utah, Vermont, and Virginia (Caminita et al., 2017, p. 309). This list indicates that there is still a significant need for the preservation of agricultural literature. For other state institutions considering digitizing, describing, and sharing similar resources, we share the following ad-hoc and formalized efforts to help inform their decision-making.

History of Extension and the Experiment Station in Tennessee

The University of Tennessee's Board of Trustees established the Tennessee Agricultural Experiment Station in 1882, five years before the Hatch Act of 1887, which provided federal funding for experiment stations across the country (Sims, 1952; Whatley, 1994). In 2009, the

Tennessee Agricultural Experiment Station became AgResearch ("50 Years", 2018).

Research topics varied and developed throughout the Experiment Station's history and

included livestock, entomology, diseases, soils, and principal crops. The Experiment Station

began releasing bulletins, annual reports, and other pamphlets and progress reports in 1888.

Farmers often requested these publications at the time of publication; the 1889 *Annual Report*

of the Experiment Station reported "nearly 5,000 Tennessee farmers requested to be placed

on the permanent mailing list for publications" (Whatley, 1994, p. 11). The bulletins *Diseases*

of the Irish Potato and *Cottonseed Hulls and Meal as a Food for Livestock* distributed 15,000

and 19,000 copies respectively (Whatley, 1994).

The first county agricultural agents in Tennessee were appointed in 1910, with six

agents by February 1911 (Sims, 1952). Also around this time, Virginia P. Moore became the

first home demonstration agent in the state, "promoting the importance of education for rural

women in Tennessee," by improving rural schools and developing canning clubs for women

and girls (Romans, 2017, p.48). Other home demonstration agents were appointed in 1911.

The work done by these county agents was unconnected with the University of Tennessee

until the establishment of the Division of Extension under the Smith-Lever Act of 1914

(Sims, 1952) and the extension agents merged with the university. Soon after, the Division of

Extension began releasing annual reports and circulars for Tennesseans to learn about home

management, farm management, horticulture, and family and consumer information. The

Division of Extension later became the Agricultural Extension Service; its brand since 2004

has been UT Extension ("50 Years," 2018).

Project Background

The University of Tennessee Libraries did not participate in the NPPAL program funded by

the NEH from 1996 to 2008, to preserve significant state agricultural materials and create

ranked bibliographies of state agricultural literature (Gwinn, 1993; Caminita et al., 2017).

While UT Libraries planned to participate in Phase 7 of the NPPAL, NEH funding ended

before the project could start (Caminita et al., 2017). As a result, UT Libraries did not create

a bibliography or digitize its materials at that time. However, in preparation for participation

in Phase 7 of the NPPAL, a preservation plan was created for the Pendergrass Agriculture

and Veterinary Medicine Library, a branch of UT Libraries (Mellinger & Starmer, 2002). The

plan proposed that the Extension and Experiment Station materials published by the

University of Tennessee should be transferred to Special Collections. Many of the materials

subsequently were moved, while others previously had been preserved on microfilm and

housed in Hoskins Library, the storage site for UT Libraries. Patron access was limited to

those who could travel to the Hoskins or Special Collections reading rooms.

Due to staff turnover, the partnership between the branch library and the main library's

preservation team, as planned by Mellinger and Starmer, lost momentum and faded. Until

2017, Pendergrass staff and student library assistants (SLAs) carried out the preservation and

digitization of these core materials. Scanning occurred in the Pendergrass branch, with files

uploaded into TRACE, UT's institutional repository. There was no coordination of these

projects with the Special Collections or Digital Production teams in the main library.

The scans were of varied quality due to an abundance of natural light in the Pendergrass

Library and the type of scanner used. The materials were not disbound prior to scanning,

which resulted in loss of content along the gutter in some scans. The work occurred

sporadically, with progress updated in an Excel spreadsheet that was difficult to locate in the

Pendergrass staff's shared files. Other institutions have observed similar pitfalls. Jenda and

Weisbrod (2013) noted, "Both the College and the Libraries had done some in-house

scanning of these documents and were fully aware of the limitations of running a digital

project on an ad-hoc basis" (p.6). Although uncoordinated with the off-site preservation

teams, the significant goal of this work was to make these valuable items more accessible.

The Pendergrass manager and the agriculture and natural resources librarian reached out to the librarians located at the main library, recognizing that they could not achieve this goal alone. They would need to combine their knowledge of agriculture and of UT Extension and Experiment Station's work with others' expertise.

Coordinating Expertise

In 2017, the UT Libraries submitted an application for Project Ceres funding, to digitize a selection of UT Extension and Experiment Station serials. The proposed project, the Agricultural Serials Digitization Project, was a collaboration between the branch and main library. Working in partnership would mean significantly increasing discoverability and access to these materials. The main library could provide digitization resources (both technology and staff) and metadata expertise, while the branch librarians brought subject knowledge that was invaluable to the selection of materials and the creation of the bibliography. The digital projects librarian at the main library coordinated efforts between the two libraries – scheduling meetings and keeping communication channels open – and managed the project using Jira (a ticketing/project management tool) and Confluence (a wiki tool used to store and manage project documentation). She also was responsible for coordinating efforts between the various departments (Special Collections, metadata, cataloging, digital production, developers) within the main library, and for tracking progress. At the initial kickoff meeting, all the stakeholders created a work plan, charting the project requirements and milestones over the forthcoming year. A review of similar agricultural collection preservation projects provided a framework for the overall project based in best practices (Becker & Monks, 2013; McGeachin, 2010; Meger & Draper, 2012). This digitization project is intended to be a starting point for future collaborative projects between the main and branch library, to continue preserving and providing access to the historical University of Tennessee Extension and Experiment Station collections.

<p style="text-align:center">**Materials**</p>

Selection of Materials

The titles selected for preservation in this project were *Tennessee Farm News* (title varies),
Tennessee Farm and Home Science, and the *Extension Special Circulars*. These titles total
over 3,800 issues. The materials were selected based on the need for print preservation, and
the absence of previous digitization by the Pendergrass Library staff for the institutional
repository. These titles were not publicly accessible in HathiTrust, as were many of the
University of Tennessee Extension and Experiment Station annual reports and bulletins.

Items available in TRACE were not considered for preservation as part of this project.
These required a more comprehensive assessment to determine their quality, and to decide on
re-scanning and creation of a digital collection. While the quality was variable, these items
were still accessible and discoverable via the Library catalog and Google searches.
Considering this, the determination was to begin coordinated preservation efforts with
materials that were most in need of it and the least accessible.

Description of Materials

Tennessee Farm News is a series of weekly news releases published by the University of
Tennessee Extension Service, with the title varying over the years. The preserved
publications, dating 1921-1988, are mimeographs of weekly releases covering historical crop
yields, markets, farm tips, and Tennessee agriculture programs. Previously cataloged by
series title, it was difficult to know the content of individual issues without the reader going
through the publication.

The *Extension Special Circulars*, previously preserved in a Southeastern Library
Network/Association of Southeastern Research Libraries (SOLINET/ASERL) Cooperative
Microfilming Project (NEH PS-20317; SOL MN05264-5267 TKN), include publications

from 1925 to 1968. Each circular has a unique title and topic, and varies in size and length. Topics include building plans, home gardening and horticultural advice, rural engineering information, clothing and home management, animal husbandry, and farm management. To find what topics the circulars covered, a user had to look through the circulars by hand, or scroll through microfilm reels, as they were cataloged by series title. Digital access makes them easier to search by topic.

Tennessee Farm and Home Science is a quarterly progress report released by the University of Tennessee Experiment Station, and this project preserved publications from 1952 to 1990. While there is a microfilm copy in storage, the print copies are used more often. The first 22 issues include Extension Service reports. This publication title later became *Tennessee Agri Science*. It primarily published agricultural research conducted at the Experiment Station's research centers across Tennessee.

Digitization

Collection Assessment and Preparation

The stated purpose of Project Ceres is to retain and preserve agricultural print serials and to provide electronic access to them through digitization (Center for Research Libraries, 2018). With this in mind, an initial assessment of the selected publications took into consideration both the long-term preservation needs of the print materials and, based on their condition, the most appropriate method of digitization.

Both the *Tennessee Farm News* and *Tennessee Farm and Home Science* were bound into volumes. The university archivist and preservation technician determined that these could be disbound for digitization by the technician. For long-term preservation purposes, separate archival-quality envelopes housed each issue, with the envelopes stored in Princeton files after scanning. Disbinding and re-housing in this way not only satisfied long-term

preservation needs, but also simplified the digitization process. The *Extension Special Circulars* were stored in a box, not bound into volumes. Some circulars contained staples; others were sewn or were loose leaves. Bindings were removed prior to digitization, with each publication re-housed in a separate envelope for long-term storage. The SLAs did all the re-housing and labelling work. The university archivist and preservation technician also assisted with another of the grant's deliverables, the completion of a questionnaire concerning storage conditions for the print items.

Planning and Benchmarking

The Digital Library Federation Assessment Interest Group's Cost Calculator (DLF, 2015) was particularly useful in the planning and benchmarking process. To determine the number of pages that could be digitized within the limits of the grant's budget and timeframe, we benchmarked scanning times on the document feeder scanner for post-1940s issues, and on the i2s Suprascan Quartz planetary scanner (the "Digibook") for the more fragile issues. Thus it was possible to calculate the number of digitized pages per minute, including scanning and recording minimum metadata. Deducting the cost of equipment and supplies from the maximum dollar amount available for the award, and dividing the remainder by the SLA hourly rate, resulted in the total scanning hours available. Converting scanning hours into minutes calculated the total possible digitized within the award budget.

Factors in benchmarking and budgeting included:

- Collection preparation time

- Cost of re-housing supplies

- Type and condition of materials

- Most appropriate equipment/digitization method

- Scanning time, including capturing minimal metadata at point of scanning

- SLA hourly rate.

Quality control (QC) was omitted from the above calculations. The digital production manager was responsible for QC, but this position's time was not included in the award budget (due to the limited funds available).

Digitization Methods and Technical Specifications

The majority of the selections were stable enough to be digitized using document feeder scanners. Given that the value of these materials was in their textual content, with negligible artifactual value, the document feeder scanner was appropriate. Award funding covered the purchase of a Fujitsu fi-7600, to accompany an existing Fujitsu fi-7700 scanner. These scanners handled single- or double-sided pages, grayscale/color, and scanning time was very fast.

The file naming convention was set and scanning profiles created in the Fujitsu proprietary software. The feeder guides on the scanner and automatic cropping (just within the page edges) meant that no additional cropping/deskewing was necessary. A "comments" column on the digitization record sheet allowed the SLAs to make a note of any irregularities in the printed pages (e.g., the printed text was skewed rather than the page itself being skewed during scanning), which facilitated a more efficient QC process.

For the planetary scanner setup, we created a baseboard template for accurate placement of a page for each new scan. In the scanning software, there was a template to scan and save each page on the baseboard separately. Additionally, the software automatically generated a filename that included item and page level information. The new digital production manager greatly improved this planetary scanning and post processing towards the end of the project. The manager wrote custom software for image and metadata manipulation and processing (https://github.com/photosbyjeremy/utk_ProjectCeres).

Sources for the technical specifications used for this project were the Federal Agencies Digital Guidelines Initiative's (FADGI) *Technical Guidelines for Digitizing Cultural Heritage Materials: Creation of Raster Image Files* (Rieger, 2016)*,* and HathiTrust/University of Michigan's digitization specs (University of Michigan, 2014). The digitization lab does not meet all the environmental recommendations of the FADGI guidelines, so the process is not fully FADGI "compliant"; however, FADGI's guidelines informed specifications such as file formats and resolution. The project's specs came from FADGI's Documents (Unbound): General Collections and Bound Volumes: General Collections, 3-star recommendations (Reiger, 2016, p.23):

- Master file format: TIFF

- Resolution: 400 ppi

- Bit depth: 8 bpc

- Color space: Adobe 1998 or Grey Gamma 2.2

- Color: Color and/or grayscale.

Grayscale was suitable for the majority of the material in the three serials. However, *Tennessee Farm and Home Science* had color front and back covers. In order to best represent the physical item, but also to reduce file size, the final digital object was a combination of color and grayscale. As the document feeder scanners were so fast, the best way to achieve the mixed pages was to scan the items twice - once in color and once in grayscale - into two separate folders, then combine the two folders programmatically once scanning was complete. The final results better captured the physical publications and were worth the additional processing (Figure 1).

Digitization Sheets, Initial Metadata

The CRL provided a metadata spreadsheet; we saved it as a Google sheet and used it as a basis for the lab's digitization sheets. Combining the CRL spreadsheet with the lab's allowed

us to record additional information, at the point of scanning, required for the grant such as details about the item's physical condition. The combination sheet recorded metadata such as unique identifiers, titles, and extent, as well as tracking information (e.g., box number, person working on the box, date scanned, steps completed), and QC comments and instructions (e.g., check page order, orientation, cropping).

Quality Control (QC)

The original plan was for the digital production manager to carry out the QC. Unfortunately, at the time of project initiation, the manager's position was vacant. A graduate SLA (GSLA) stepped in to do the QC work. In the initial stages of the project, AV Preserve's Metadata Quality Control (MDQC) tool (https://www.weareavp.com/products/mdqc/) verified the files' technical specifications. This was an easy-to-use tool with a short learning curve, which suited the absence of a digital imaging specialist. The GSLA ran the MDQC tool on all files, carried out visual QC, and oversaw any necessary rescanning. As noted above, by project's end a new digital production technical manager was on board.

Deviation from Original Benchmarking

The budget and workflow deviated from the original benchmarking in several ways. The most notable was the increase in SLAs' salaries. Shortly after submission of the Project Ceres application, the SLA hourly rate increased from $8 to $9. This meant that, in theory, the budget calculations were incorrect. In reality, the award funding paid for as much as possible, with the remaining salary covered by the Libraries' SLA budget.

An unanticipated discovery was that *Tennessee Farm News* had a greater number of fragile issues than expected. As a result, there was more scanning time using the planetary scanner. Due to the irregular nature of the *Extension Special Circulars*' numbering and publication dates, these required a bit more preparation work than originally estimated. None of this negatively impacted completing the work within the timeframe.

In addition to the improvements made to the planetary scanner digitization workflow, the digital production technical manager streamlined other post-processing tasks, some of which are under further development to apply to future projects. In order to fulfill the requirements of delivering PDFs to the CRL, code was created to extract metadata from the image files, which was used to name the files and arrange the directories as required for the deliverables (https://nbviewer.jupyter.org/github/photosbyjeremy/utk_ProjectCeres/blob/master/agrtfhs_crl_deliverables.ipynb?short_path=e4e300a).

Metadata

Workflow and Implementation

We created descriptive metadata, to ensure the interoperability and discoverability of these collections both within and beyond the local platform. Given the large number of issues (over 3,800), one significant goal was to streamline the workflow for data entry as much as possible. Two SLAs in the UT Libraries' Digital Production Lab were responsible for metadata creation, under the guidance of the metadata librarian. While one student was pursuing a degree in library science, neither had significant prior experience in creating descriptive metadata or assigning Library of Congress subject headings.

We established a list of subject headings for the students to consult; this simplified the assignment of subject headings for the students and standardized the description of similar content across the collection. The list supported the use of controlled headings without requiring students to search library authorities themselves. During the initial phases of entry, the students suggested additional terms for the established list based on the content they encountered. In total, the final list consisted of 76 topical subject headings, covering concepts from "4-H clubs" to "World War, 1939-1945--War work." Additional lists captured name

authority headings, such as "United States. Agricultural Adjustment Act of 1938", and publisher names.

Following data entry, metadata processing conformed to the library's typical workflow. The Google sheet data was uploaded to OpenRefine, an open source program for cleaning data, which remediated and reconciled the values. To create XML records following the Metadata Object Description Schema (MODS), an export template was written. The records were ingested into Islandora, the library's digital collections repository. In addition, these records were added to the library's Primo discovery layer via OAI-PMH (Open Archives Initiative Protocol for Metadata Harvesting), making the items findable through the main library catalog.

Description of Content

In creating the metadata, we were attentive to distinguishing characteristics of the materials that might offer unique access points. While all three titles focused on agriculture in Tennessee, the issues also touched upon historical and political events at the time of publication. When prominent, subject headings were assigned to provide access points for those interested in reading these issues from a historical perspective. Particularly prominent throughout *Tennessee Farm News* were references to World War II, captured primarily through the Library of Congress (LoC) subject headings "World War, 1939-1945--Food supply". Hopefully, these subject headings will encourage patrons outside of the field of agriculture to intentionally and serendipitously discover these materials. Promotion of the collection to the UT Libraries' history liaison librarian also will be beneficial in increasing awareness of these publications to the widest possible audience on campus.

In addition to the national historical movements the issues touched upon, several local names and organizations featured prominently in these texts. As Becker and Monks (2013, p. 237) note, agricultural publications created by land grant universities can be extremely

valuable to students as they provide a local context that simply is not captured by more popular national publications like *Time*. With the help of the Cataloging department, several LoC name authority files were updated and created for this project. Publisher values consisted primarily of two entities, the Agricultural Extension Service and the Agricultural Experiment Station at the University of Tennessee, but the official name for these organizations changed over the span of the three publications. Because of this, work needed to be completed to establish end and start dates for these publishers so that the form of the name used at the time of publication would be present for each item. Furthermore, an original LoC authority record for Webster C. Pendergrass was created for this project. Pendergrass is the namesake of the Pendergrass Library and served as a Dean of Agriculture and former extension agent in Tennessee.

To accurately reflect the format of all three publications as serials, several fields were added to the metadata. All three publications were assigned ISSNs through the LoC, an effort undertaken by Joy Panigabutra-Roberts, Head of Cataloging. The metadata captured the title variations for each publication, subsequently reflected in the item-level metadata. Of the publications, *Tennessee Farm News* proved to be the most complicated with regard to title changes, with a total of six variations in the nearly 70 years of issues represented in the collection. Furthermore, each issue was assigned the form term "periodicals" from the Art and Architecture Thesaurus (AAT). *Tennessee Farm News* also was assigned the narrower term "press releases" to more granularly describe its specific format. Finally, the MODS schema used a unique element called "issuance" to indicate the method in which a resource was issued. For all three publications, an issuance value of "serial" was assigned, to further emphasize that these resources were continuing, periodically produced publications.

To improve discoverability, we added information to the records. One example of this is the inclusion of publication authorization numbers (PAN) in the metadata records for

Tennessee Farm and Home Science. These numbers consisted of 13 digits separated by dashes and preceded by the letter "E" (e.g., E11-0415-00-002-88). The PAN served as an additional MODS identifier; patrons searching for known issues via this number could easily retrieve and identify the relevant items in the search results. University Printing and Mail assigned the identifiers to track funding expenditures, as required by the state code (Public Property, Printing and Contracts, 2010). The first six digits indicated the source of funding for the publication, the last two digits the year of printing, and the three digits preceding the year indicated the issue number.

To aid discovery and properly identify issues of the University of Tennessee Extension Special Circulars, we included the circular numbers, placed in an identifier tag with a type attribute of "circular". Circular numbers are surrogates for the volume and issue numbers typical of periodicals. Circulars are a particular form of publication, distributed to a group of people with a shared interest. In agriculture, circulars commonly communicated practical knowledge of farming practices and management.

Interoperability

To broaden access to these serials, we shared the records with the Digital Public Library of America (DPLA) and WorldCat. The process for sharing MODS records with WorldCat is relatively straightforward using its Digital Collections Gateway service. Once MODS records are created and shareable via an OAI endpoint, records from the endpoint can be automatically mapped to MARC fields using the Digital Collections Gateway. However, for the publications to be accessible via DPLA, several standards needed to be met. The records had to comply with DPLA's Metadata Application Profile (MAP). The DPLA required that all records include Rights Statements (RightsStatements.org) values to indicate the copyright status of each work. Through both manual evaluation and a program developed by UT Libraries' digital production technical manager, each issue was checked for the presence of

the word "Copyright" or "©". This analysis revealed that none of the issues across the three publications included a copyright notice. The periodicals were not registered officially with the Copyright Office. For *Tennessee Farm News* and *Tennessee Farm and Home Science*, all issues published prior to March 1, 1989 were given public domain status as these did not comply with the required formalities (Hirtle, 1999). *Extension Special Circulars* were authored by individuals employed by the Agricultural Extension Service; as works-for-hire, copyright was held by the University of Tennessee Institute of Agriculture (UTIA). In the case of works-for-hire, copyright lasts 95 years from the date of publication, so all of the circulars were noted as "In Copyright" (United States Copyright Office, 2012, p. 3). The copyright statements made the records compliant with DPLA standards, while also providing guidance to potential users on the proper re-use of these digital assets across all platforms.

Using particular terms within the AAT to describe the form of the publications (e.g., "periodicals") also brought the records into compliance with DPLA's standards. In DPLA's MAP 5 (yet to be fully implemented), Appendix C outlined specific terms to be used in the future for a format-specific facet on DPLA's interface. The list contained a very limited number of terms to make the facets manageable for users. While terms like "press releases" and "newsletters" described the materials best, we added the broader term "periodicals" to make these resources discoverable across platforms.

Local Interface

The UT Libraries' local Islandora platform provide access to the three publications, for use by university and public patrons. The serials are available at the following links: *Tennessee Farm and Home Science* (https://digital.lib.utk.edu/tfhs), *Tennessee Farm News* (https://digital.lib.utk.edu/tfn), and University of Tennessee *Extension Special Circulars* (https://digital.lib.utk.edu/utesc). Multiple search methods are possible because of the descriptive metadata and the Optical Character Recognition (OCR) of each document's text.

Visitors to the collections can use facets on the left side of the page to search by subject, format, author (when applicable), and geographical coverage (Figure 2). In addition, visitors can complete full-text and keyword searches using the search box. Upon selecting a particular record, users can also download a PDF of the document, examine the content in the Internet Archive BookReader, and view metadata in the "Click for Details" section or directly in the MODS record (Figure 3).

Creation of a Bibliography

While these three titles are now digitized and preserved, other historic serials from the University of Tennessee Extension and Experiment Station remain undigitized, inaccessible, or difficult to discover in searches. A bibliography of these serials was created, to support future identification of and decision making about which titles to preserve. The scope of this bibliography followed guidelines from Project Ceres, to document historical print serials and serials published by a land grant university, in this case the University of Tennessee, through 1988 (https://ecommons.cornell.edu/handle/1813/41461). Per the Project Ceres guidelines, the bibliography excluded monographs, maps, and pamphlets. We created a list of search terms to locate items published by the University of Tennessee Extension Service and Experiment Station. The search terms corresponded with Library of Congress authority records for the varied names of the departments since their creation to present day. WorldCat, HathiTrust, and the UT Libraries' catalog were searched in a process similar to that described by Level and Standish (2007). Search results were exported into a Zotero library to be sorted through and verified before being added to the bibliography (available at https://www.zotero.org/groups/2362118/utkprojectceresbib). In addition to the standard bibliography format, the project team plans to create an online and interactive version of the

bibliography for readers to explore more easily, similar to the Colorado Agriculture

Bibliography hosted on Springshare's LibGuides (Watson, Level, & Oehlerts, 2019).

Conclusion

The goal of the Agricultural Serials Digitization Project was to partner Pendergrass Library

staff's specialist knowledge with the preservation, digitization, and metadata skills of Hodges

Library staff. The successful collaboration resulted in broader access to approximately 3,800

issues of three publications, while also ensuring the long-term preservation of the print

originals. The University of Tennessee has a rich history of agricultural research, and the

Libraries' collection of agricultural serials reflects this. This collaborative project establishes

benchmarking and workflows, and will inform future digitization efforts of these materials. It

is the first step in an effort to close the gap in the availability of digitized agricultural

literature from Tennessee.

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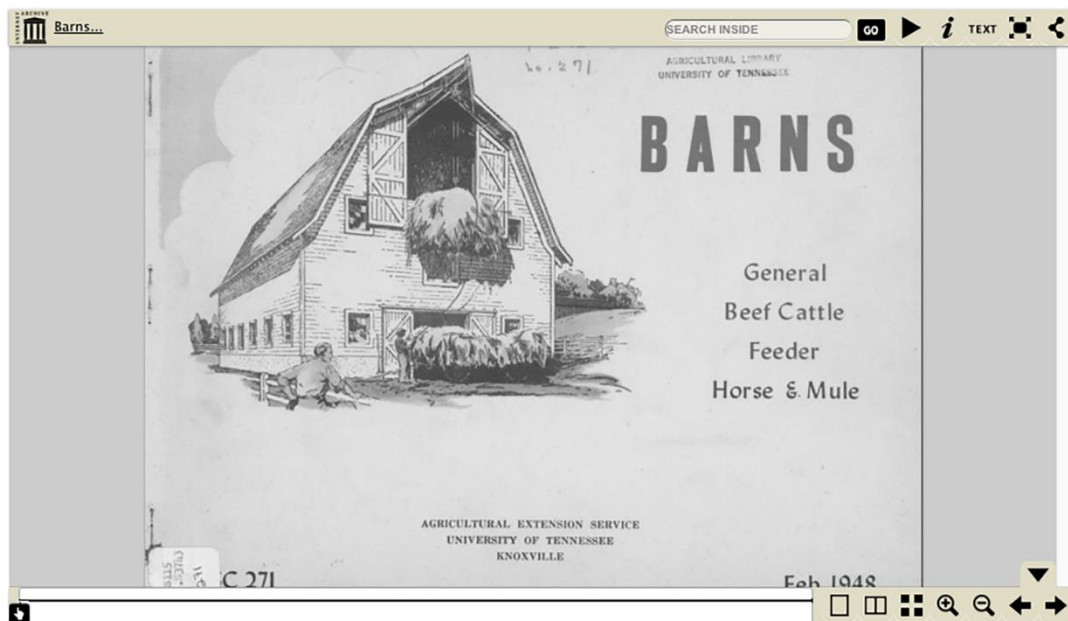Figure 1. Issues of *Tennessee Farm and Home Science* included color and black and white pages.
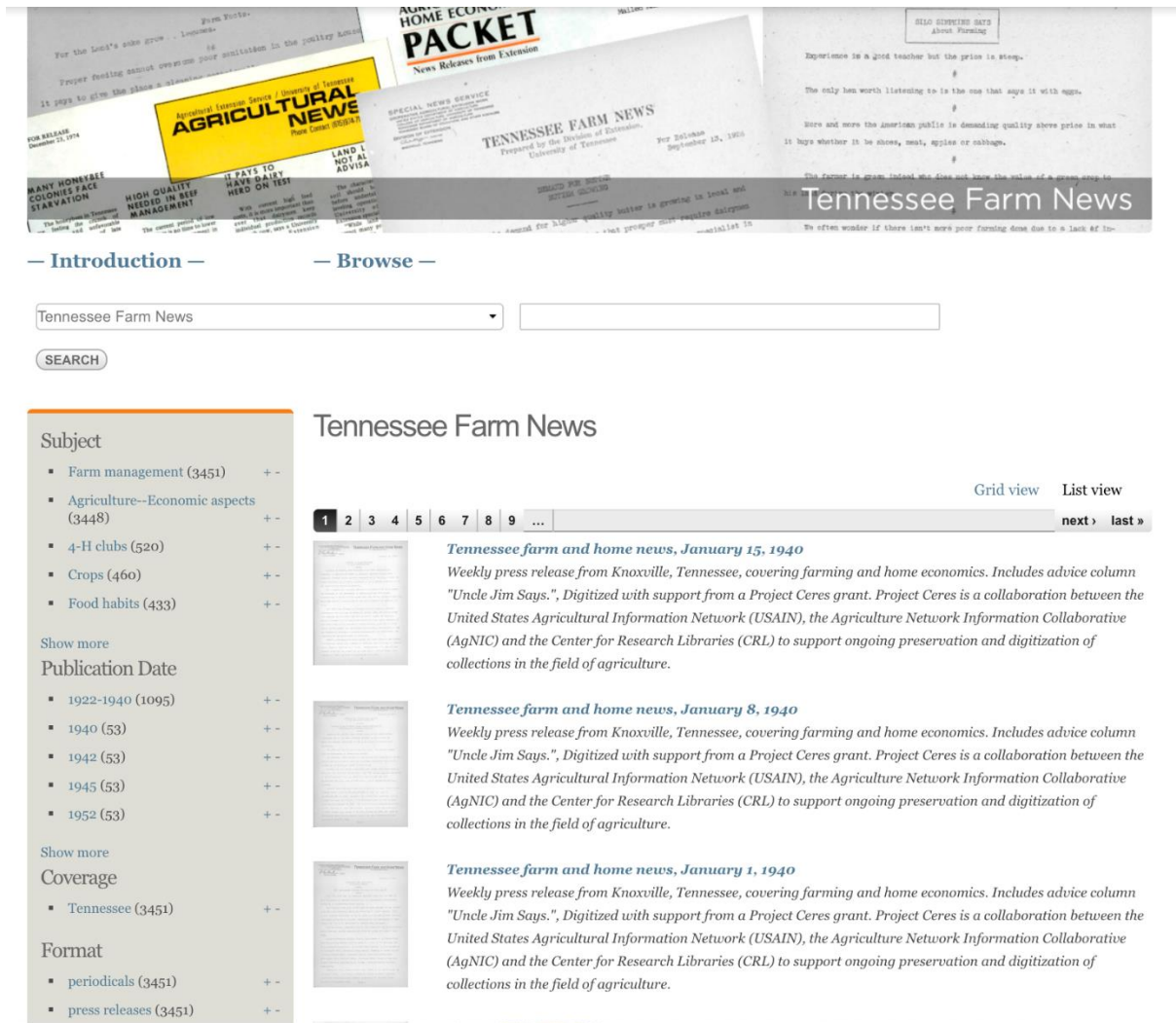
Figure 2. A screenshot of *Tennessee Farm News* in the University of Tennessee Libraries' Digital Collections local interface.

Figure 3. A screenshot of an individual record from the *Extension Special Circulars*.