GUILD OF BOOK WORKERS JOURNAL VOL. 52



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Bookbinding and the Cotting School Samuel Ellenport

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GUILD OF BOOK WORKERS JOURNAL VOL.52



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ON THE FRONT COVER:

James Ojascastro Bundle of dried *dó* bark in Đà Bắc, baled and ready for transport to papermakers in Bắc Ninh.

Jerushia Graham *Undercurrent: Reflect*, hand cut papercut mounted on museum board, 2019.

Louisa Eastley Gothic binding cutaway model.

PUBLICATION POLICY

The Guild of Book Workers Journal is published annually. Regular issues contain articles selected by peer review and editorial review processes. Submissions are welcome from nonmembers as well as Guild members. Please submit online at https:// guildofbookworkers.org/journal or email manuscripts to journal@guildofbookworkers.org. Final selection of any material for publication is at the sole discretion of the editors of the Journal. Authors of articles and other contributions accepted for publication in the Guild of Book Workers Journal grant the Guild first serial rights to their work in both print and electronic form, and to archive it and make it permanently retrievable electronically. Authors retain copyright to and may republish their own work in any way they wish starting six months after publication. All text, illustrations, and photographs have been reproduced with permission. The views and opinions expressed in this Journal are those of the respective authors and do not necessarily reflect those of the Guild.

The Guild of Book Workers also publishes a *Newsletter* as well as catalogs accompanying each of our national traveling exhibitions. Current members of the Guild receive subscriptions to the *Journal* and *Newsletter* as benefits of membership. All of our publications that remain in print are available for order online at <u>www.guildofbookworkers.org</u>; discounts are available to current members. Please visit us at www.guildofbookworkers.org.

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EDITOR'S NOTE

VOLUME 52 OF THE GUILD OF BOOK WORKERS *Journal* represents the combined efforts of an editorial team dedicated to documenting the work and ideas of a diverse community of book workers. This committee, like the entirety of the Guild of Book Workers executive board and the committees that provide the administrative framework for our organization, is composed entirely of member-volunteers who work in support of you, our membership, and the community of book professionals in North America and around the world. This publication is an expression of the love we have for handmade books and the various disciplines that define them. Instrumental to producing Volume 52 were editorial board team members: Victoria Birth, Susie Cobbledick, Martyna Gryko, Jessica Hudgins, and Kim Norman. Additionally, the work in your hands would not have been possible without the editorial work of Eric Alstrom and the design prowess of Rebecca Chamlee. Perhaps most importantly, thanks must be given to the slate of authors and contributors who worked diligently to publish on their individual research and creative interests.

In selecting the assortment of articles included within this volume, the editorial team has made an effort to think more critically about highlighting voices and stories that have been historically underrepresented in our organization and professional community or historically marginalized within western societies. We have tried to represent the diverse backgrounds and identities of those working in the arts, crafts, and sciences associated with the handmade book, all of whom deserve to be celebrated. In recent years, the importance of Diversity, Equity, and Inclusion (DEI) has come to the forefront of society. Our organization of book workers stands in support of ensuring that all people are invited to and welcomed at the table. This effort isn't finished with the publication of one volume. Highlighting the importance of DEI at all levels of our organization is something that the Guild of Book Workers and the Guild of Book Workers Journal will continue to strive for going forward. The topics of diversity, equity, and

inclusion should be continually revisited and reflected upon as we make communal decisions as an organization, develop leadership roles, and nurture future generations of book workers and those working in allied disciplines.

As the Editor and Chair of the Guild of Book Workers Journal, I've done my best to fill the shoes of those that have served in this role before me. Over the last decade or two there have been ups and downs in our publication cycle. Within that time we've observed periods of inactivity or low authorship and periods of intense interest in publishing. Since taking over as Editor and Chair I've made it my duty to continue to build a team to run the Guild of Book Workers Journal while thinking about sustainability and volunteer leadership within our community. Like the vast majority of the Guild of Book Workers leadership, I am a working professional volunteering time to the organization that we love. Because of this, I view sustainability and continuity as critical to ensuring that none of us are burnt out to the point where we have to shirk responsibilities and let things fall through the cracks. Having a team to work alongside has made producing the Guild of Book Workers Journal a joy.

For the past couple of publishing cycles, the editorial board and I have been fortunate to have had a healthy stream of interest in publishing, and we hope this continues indefinitely. That being said, if we expect a healthy stream of authors going forward, we need to ensure the continuity of our leadership and editorial team. To establish this continuity, we've decided to implement a Co-Editor and Chair role system for the Guild of Book Workers Journal. Going forward there will be a team of Co-Editors working with a larger editorial board. The Co-Editors will each serve two year terms offset by one year so that there will never be gaps in our annual publication cycle. The decision to reformat the Editor and Chair to a joint Co-Editor and Chair role was approved by the executive board and will begin during the 2023-2024 fiscal year.

Returning to the volume you are currently reading, we hope that you enjoy learning from your colleagues working with the book form or those engaged in its study. The dedication of all of those included within the *Guild of Book Workers Journal* is inspiring, and we celebrate all of the creative and scholarly endeavors taking place within our community of book workers. For those interested in contributing to Volume 53 of the *Guild of Book Workers Journal*, the deadline for submission is March, 2024. If you are interested in submitting, please reach out to me at journal@ guildofbookworkers.org

Kyle Anthony Clark

Editor Guild of Book Workers Journal



Jerushia Graham

AN INTERVIEW WITH JERUSHIA GRAHAM

KIM KNOX NORMAN

MANY ATTENDEES AT THE GUILD OF BOOK WORKERS STANDARDS of Excellence Seminar in Atlanta, Georgia (2022) were excited to learn about Jerushia Graham and her work at the Robert C. Williams Museum of Papermaking. Graham had curated an exhibition then on display, A Community of Artists: African American works on paper from the Cochran Collection. This exhibition struck a chord with all those in attendance and led to constructive conversations centered on the work of African American artists and ongoing efforts to create more diverse, equitable, and inclusive spaces and organizations. Following the Standards of Excellence Seminar, the members of the Guild of Book Workers Journal editorial board agreed it was important to continue the conservation. ¶ The following conversation between Jerushia Graham and Kim Norman took place in the late fall of 2022 and goes far beyond Graham's role at the Robert C. Williams Museum of Papermaking and the exhibition she curated. Graham and Norman conducted a heartfelt conversation touching on Graham's work as a leading voice within the community of book arts professionals and her career as an artist-educator working within the mediums of print, paper, and the book.

Jerushia Graham is Exhibition Coordinator for Robert C. Williams Museum of Papermaking (Atlanta, GA) and a working artist who exhibits nationally and internationally. Graham served as the first VP of Exhibitions/ Curatorial for North American Hand Papermakers (2020-2021). She earned a MFA in Book Arts/Printmaking from the University of the Arts in Philadelphia, PA, and BFA degrees in Fabric Design and Printmaking from the University of Georgia in Athens. Graham champions non-traditional learning through creative collaboration.

Kim Knox Norman is Director of Preservation and Digitization Services for Emory Libraries at Emory University in Atlanta, Georgia. She earned an MFA from the first graduating class of the Book Arts and Printmaking program at The University of the Arts in Philadelphia. Knox Norman has been a book and paper conservator in private practice for more than 30 years

-KIM KNOX NORMAN

KIM KNOX NORMAN

Kim: Please introduce yourself to our readers.

Jerushia: I'm Jerushia Graham. I'm based in Atlanta. I'm the museum coordinator at the Robert C. Williams Museum of Papermaking and my background is in printmaking, book arts, and fiber arts.

Kim: Terrific! Before we talk about your creative work, would you please describe your professional work? You just introduced yourself and told us where you worked, but could you say a little bit more about that?

Jerushia: So, at the Robert C. Williams Museum of Papermaking I install and de-install the changing galleries; I schedule the exhibitions; sometimes I curate; and I design the postcards, the promotional items, and upkeep the exhibition pages on the website. I also make all the paper pulp for our workshops and, when needed, I support the education curator.



Dark and Quiet Spaces #3, hand-colored and handbound double-sided digital print, 2022.

Kim: That's a lot!

Jerushia: We're a small staff.

Kim: That's very diplomatic of you.

Kim: When or how did you know that you wanted to be an artist?

Jerushia: As far as.... as long as I can remember, I knew I wanted to be an artist. My parents say I told them at four that I needed a camera and paints, because every good artist takes their own pictures. I don't know where I heard that from. At the time my understanding of an artist was, you know, a painter. So



Dark and Quiet Spaces #1, hand-colored and handbound double-sided digital print, 2022.

I was like *I need a camera and some paints*, and they got me a little kiddie camera. And every year, even to this day, I get some form of art supplies for Christmas.

Kim: Lovely! Like all good artists.

Jerushia: Yes, I got some this Christmas as well!

Kim: Have you had a mentor or mentors who informed and guided your approach to art?

Jerushia: Oh, definitely. Oh man, where to start ...? Robert Putnam was my high school art teacher. He came during my second year at Jonesborough High and just breathed new life into the program. Because of him, I was able to go to Governor's Honors, which is a college experience for high school students in a specific area, and I went into visual arts. Lonnie Graham, who's a photographer based in Philadelphia. I went up to Philly for an apprenticeship program at the Fabric Workshop and Museum and Lonnie and his wife, Christina Roberts, kind of took me under their wing. I got to see the kind of behind-the-scenes work of getting work made and displayed from [the perspective of] a professional. Also, Lonnie's work is community based. Getting to interact with, or assist on, some of his projects and just seeing the sensitivity and care in connecting on a deeper level versus "I am the artist. I'm coming in and I know what's best, what looks good." Really having your ears and eyes open to receiving the amazing gifts that all of us have to offer. In terms of papermaking, Winnie Rattling at University of the Arts and Rick Johnson at the University of Georgia were my intro

into papermaking, and I'm still doing it. I cannot *not* mention them! And then Hedi Kyle at University of the Arts, in terms of just her energy, wonder, and anything can be an art supply attitude...always just playing. She plays, and there's just great joy in it for as long as she's been making art, making books. That wonder and joy!

Kim: You know, I didn't realize until right now that we share Hedi as a mentor. I didn't know that until right now. You graduated from the University of the Arts?

Jerushia: Yes, 2003.

Kim: Okay, I graduated in '90, which was the first class of that graduate program. I didn't know anything about it when I went there to transfer into a different program. Lois Johnson was still there. Was she still there when you were? Lois snapped me up and put me in the room with her for a portfolio review and said, "...you qualify for this program. Are you interested?"



Inner Peace #1, wood engraving, 2007.

I was, and then I interned with Hedi. Yeah, what a great mentor to have!

Jerushia: I mean, all the professors in that program. Yeah, there's so many! I also should mention Marie Cochran at the University of Georgia. I didn't really have a class with her, I was about to graduate, but before then, we would have long conversations in the hallway. She was one of the few Black art teachers in the Lamar Dodd School of Art. Monica Manuel and I...came to her and said, "We want to form a student group for Black art students.", and so she was our mentor and made sure that anytime there was a visiting artist on campus, she'd round us all up like "...Hey, you guys need to come in and meet this person. You need to, you know, bring some work, let them see." You know, constantly



Inner Peace #2, Wood Engraving, 2007. Though the *Inner Peace* works are older they illustrate how my style of papercut comes out of my printmaking background.

just encouraging us to show our work, and not be shy about meeting and speaking to established artists.

Kim: Can you please describe the approach you take when making your artwork? Is it the same each time, or do you have a different approach depending on what you're working on? How does that go for you?

Jerushia: I guess it varies a little bit depending on the materials I'm working with. But for the most part I use sketchbooks. Half of the sketchbook is writing. Like quotes or something I read or overheard, so it's not just visual inspiration. ...I usually make small mock-ups and then scale up to whatever size I'm going to do. Although, I...I have to say, I really struggle with working on a larger scale. I like the fussy stuff.

Kim: Do you think -this is a little bit of an aside, butdo you think you like that, because there's something really personal about the smaller scale books or prints or...?

KIM KNOX NORMAN



Undercurrent: Reflect, hand cut papercut mounted on museum board, 2019.

Jerushia: I don't know. I've heard others who work small say they like the handheld quality of it. Yeah, there's something very intimate about working on a smaller scale. I guess just from the start, as a young artist, I had access to art supplies but I didn't have massive, massive resources, so some of it may just be a habit. Getting used to kind of working on a smaller scale, because if I had one giant sheet, and I can cut it down... now I have six to nine sheets instead of just the one big sheet, you know.

Kim: Yeah, making things last in that way, kind of the economics of scale, you know. Yeah, okay. So, considering your day job and your work as an artist, how do you balance or combine elements of your day job with making art?

Jerushia: Hmm, well I mean, I find inspiration in the shows, regardless of if it's a fine art show, a history show, or science...because the paper museum is not just fine arts. Like, we encompass all of those things, so, I find inspiration, and sometimes, just a kind of

kick in the butt like...look at all this work, you gotta get back in the studio and keep making stuff. Because I am installing and staging, right? So, with any exhibition you have a collection of items, and then figuring out aesthetically how to position them so that they work best in the space. It doesn't seem too crowded; each piece gets its due and intention; and so I think just the design aspect of being an artist translates to work... And then, as a printmaker and book artist, those things require attention to detail and a bit of patience. I think you need that kind of patience to do the things that I do at the Museum as well.

Kim: Definitely. So, as we said, this volume of the *Guild of Book Workers Journal* is focused on looking at book arts through a meaningful DEI lens, offering space for diverse voices to be heard. Can you please talk about your own very personal perspective on diversity, equity, and inclusion, specifically in the book arts world?

Jerushia: Oh... We have a lot of work to do. Whenever I found book arts -and I found book arts late in undergrad with my last semester of my senior year- I got to take my first book arts papermaking class. It was a combined class with Rick Johnson. I wondered, how



Undercurrent: Witness, hand cut papercut mounted on museum board, 2019.



Undercurrent: Wade, hand cut papercut mounted on museum board, 2019.

did I not know about this, you know? The experience made me realize that, for grad school I wanted to pursue book arts. I got to The University of the Arts, and...the only, at least the only Black book artist I was aware of, was Clarissa Sligh. I didn't have a whole lot of other folks to look at as a Black woman, working in book arts. It would have been nice to be aware of some of the other folks I'm like. I looked at Lorna Simpson's photography work, because you know, she combines image and text a lot of times. And so, even though it wasn't necessarily presented to me as book arts, I pulled on that as another person that I could find kinship with... and I get Faith Ringgold's story quotes, thinking beyond the more traditional structures of a book... But that was about it, so I was just kind of doing my thing. Rosae Reeder...I think she had graduated a couple of years before me from the program. She was still there in an administrative capacity in the illustration department. So I knew there were some other women of color that are playing around with this concept. Regardless if they call it book arts or not... But even to this day the list is short, as far as what I know. I'm sure there's a lot...I'm

hoping that there's a lot more activity. It just has not been recorded. Do you know what I mean?

Kim: Yeah, and as you say, we have a lot more work to do.

Jerushia: Yeah, yeah, but attending the College Book Arts Association I was able to connect with Tia Blassingame, and she developed the Print/ Book Artists/Scholars of Color Collective. So I've been involved with them. It's nice to get together in community and just know that there are artists of color working in this field, working in print, working in book arts, working in paper. Yes, we have a long way to go. And, it has to be more than just the every now and then - can you give a presentation or talk - but really figuring out what is, what are the barriers, and how can we ease those barriers to encourage more creators of color to engage with the work; to be creators, to be curators, at all of the levels. Book arts encompasses so many different techniques: print, papermaking, working at the Museum... I see the need for us to be curious, to be writing about and critiquing the work, and to be included in that kind of work. Obviously, this is a special issue. But even going forward, really being mindful and diversifying the voices of all of the issues, not just a special time or a special edition.

Kim: Exactly. In fact, I think that's part of what our effort is. I'm hoping that it's the beginning of, as you say, setting up the inclusion of voices in *each issue*... not, not a special issue but starting purposefully in each issue.



Treading Water in the Deep End #6, papercut mounted on museum board, 2021.



Treading Water in the Deep End #4, papercut mounted on museum board, 2021.

Jerushia: I'm sorry, oh just one other thing. I think this is something that a number of organizations, especially those that deal with the kinds of skill and craft that Guild of Book Workers or North American Hand Papermakers deal with, is engaging future membership in the administration; like committees, organizing, editing, and mentoring. You know, getting them in the door earlier. You'll start to see -or hopefully we'll start to see- a shift to a more inclusive space.

Kim: Yeah, that's a great observation. Like really instilling it from the beginning or the beginning of careers of the people. Examples of people you just mentioned -editors, curators, writers, whomever they may be- and kind of bringing them up through the process naturally. Not just injecting them into the process whenever needed.

So, my next question is -and maybe in a related way- considering this overall social justice movement that we're experiencing, how has your artwork evolved over time or has it changed?

Jerushia: I have to say that my work has always taken the personal as political. I don't necessarily think that everything has to look like a political poster but I've always thought of not only my work but my presence in spaces where there's not a lot of folks that have similar background that... I don't know if I would go so far as to say an act of social justice, but it is a small step of contributing, helping us move forward. I think just thinking about the work, and I'm wondering if earlier on the work might have been a little bit more... direct. I mean, I've always been pretty -even my teachers and my friends always say that- my stuff is subtle. Anyway, so I don't know it... it still wasn't a political poster. But I feel like it might have been a little more heavy-handed than it is now. Now, I just talk about whatever space or place is on my heart at the time. But all of the work is intended to speak to our humanity and encourage empathy. I don't know if I'm answering your question.

Kim: You are, you definitely are, yes. Thank you very much. You want me to go on to the next one? It's sort of related. So, from your own experience, have you encountered any discouraging resistance or roadblocks to your book arts work?

Jerushia: No, not specifically to my book arts work. I mean, I had a professor once say that they couldn't relate to the work, and the work was about family, and so you know...and the question is, is it you can't relate to the work, because, you know...like what really was going on behind that statement? Even though I said we have a lot of work to do, I have to say that both as a printmaker and book artist, and also in the papermaking community. I have been very welcome in those spaces. People have engaged, they've shared techniques, and given encouragement. But I will also say that my background is...I'm an army brat, so I'm used to stepping into spaces. But trying to find the point of connection, I could see these spaces can be intimidating, especially if you come from a community that's not... what am I trying to say... because I can't define everybody's community, I can see how the



Treading Water in the Deep End #5, papercut mounted on museum board, 2021.

INTERVIEW WITH JERUSHIA GRAHAM



spaces could be intimidating. But I personally have found camaraderie and encouragement and friendship, both with the Guild of Book Workers. the North American Hand Papermakers, and Southern Graphics Council, which is a giant conference. If you can't find someone

Seen, Pop-up papercut folio from assorted papers, book board, and book cloth, 2022.

to connect with at that conference, you're not trying. I would have to say that the toughest thing, and again, it's not specifically book arts but just kind of the arts world, I definitely get a lot more requests for exhibitions in February and the surrounding months – Black History Month everybody wants a black artist. You know, it would be nice to be invited and asked to exhibit some other time of year. I take opportunities as they come and I feel kind of conflicted in terms of exhibitions that just highlight a specific group. Like, I love going into the show and knowing oh this is all women artists, or these are all Black artists, they're all Hispanic artists. I also feel a little torn, because we also want to be incorporated. I don't know how to have the cake and eat it too.

Kim: Maybe that's the thing, like as you say, to incorporate generally not just specifically. Not just the months or the weeks surrounding MLK Jr. Day or Black History Month, but all year, all opportunities. That's a really great segue into my next question, which is a little long in the beginning, but I promise there's a question here. Arts organizations and studio art facilities are becoming increasingly accessible and inclusive to underrepresented groups by offering scholarships and financial support, such as sponsorships, for example. With opportunities like these, would you like to see a future platform to encourage diversity in the book arts field? In other words, how can we improve these beginning or initial efforts?

Jerushia: Yes, I would definitely love to see that. And I have taken advantage of some of those opportunities to be able to take workshops. The San Francisco Center for the Book...offers amazing scholarships and getting to take classes I wouldn't have access to otherwise. And then those also being digital has made it more accessible and available. From The Hand Papermaking Journal, the Mildred Thompson Fellow came through the Museum to see the show, and I got to speak with her. I'm interested and excited to see what scholarship she does while she's the Fellow. It's, you know, just like a space of her own. A studio space for women or the Womens' Studio Workshop. We're not there yet. We still need these spaces, and the investment goes a long way. So the folks that get the fellowships and scholarships... I guess, I can't speak for anyone else, but for me that really resonates and ties me to those organizations. I'm more willing to say yes if called to devote the time to serve as a mentor, or to volunteer time, or monetary contribution. It puts some skin in the game like that, with that support. It's not guaranteed that people will stay involved or feed back into it, but it's more likely that they will.

Kim: Exactly. All the increased and concentrated efforts toward DEI initiatives across organizations, not just arts organizations but... you and I could list



In That Moment, pop-up papercut folio from assorted papers, book board, and book cloth, 2022.



Unspoken, Pop-up papercut folio from assorted papers, book board, and book cloth, 2022.

plenty. It's not just talk, as long as there is a give and take like you just described. It can kind of smack of just talk because it's what everyone's doing right now. But unless you actually demonstrate, as you just described perfectly, the ways that these connections can really build on each other... That's when you know that an organization is fully committed to inclusivity and accessibility or access. We have to do the work on the administrative side to stay engaged.

Jerushia: You mentioned checking-in. I'm not just that checked off mark on their list of things. They do want to stay connected; they do want me to be a part of what's going on. It works both ways.

I did a residency with the Creatives Project, which is an artist residency here in Atlanta. They have two programs...one is a studio space for, say, three years... I'm a little fuzzy on the number of years now. It might be for two years and then the other is subsidized housing. But part of what they do so well is reaching out and engaging with their past residents, so when opportunities come, they don't just advertise it to the folks that are currently in residency. If it's a national call or something else, if it's a call for proposals, they'll let their former residents know about the opportunities when they do. Their focus is also engaging community, kind of building an ecosystem of the arts in Atlanta. Again, they'll reach out to past members to come through and volunteer sometime, at the booth or table, serving as a mentor, those kinds of things. But people won't know that you want them around

and that you want them to stay engaged unless you are actively reaching out and saying *Hey*, *don't forget about us. Come on back. We want to see you.*

Kim: Like you said, it's not just that one-and-done kind of, I've checked that box off, it's not just a financial investment right now. It's an investment in the future, like you and anyone who has received any kind of financial assistance or awards or scholarships or sponsorship. To be engaged in the future means that you feel like you're really included, and they really want you to participate in their future endeavors, whatever that is. Do I understand correctly that you recently curated your first exhibition? Was it you curating the exhibition by yourself?

Jerushia: Though it's not my first dip in the curatorial work, A Community of Artists: African American Works on Paper from the Cochran Collection is really the first show I've curated for the Robert C. Williams Museum of Papermaking. But in terms of curatorial projects, my first solo as the curator, that opportunity was given to me by the Hudgens Center of the Arts in Duluth, Georgia. I invited artists that were dealing with social justice issues. I haven't curated a lot of exhibitions. I've served as a juror in a number of competitions and those kinds of things. And that student group that I mentioned, the group at University of Georgia, our main thing was putting together exhibitions, and they were juried shows. So as students we would...get together, outline the



Mmm Hmm, Pop-up papercut folio from assorted papers, book board, and book cloth, 2022.



Yesss, Pop-up papercut folio from assorted papers, book board, and book cloth, 2022.

parameters, and then install the exhibition. So there's that kind of work. The show for the Papermaking Museum was a little bit more work in terms of research, writing, and distilling down information in a way that I had not done before. Virginia Howell, our director, has a background in history, so a lot of times she will distill the information. We have students that help us in terms of the research, and I'm usually doing the graphic design. How do I take all of this information and make it look welcoming and engaging? So in that way, yes. It was my first time... curatorial research and writing. The other shows were more focused on bringing together artists and just letting their artist statements speak for them. A Community of Artists: African American works on paper from the Cochran Collection, it's a long title, because of the historic nature of that exhibition, I had to drill down a little bit more in terms of information, context, and then figuring out what to highlight. So, hats off to all of the curators out there. Those who have professionally trained and those who are dipping their toe in and figuring it out. It's not an easy job but it's definitely rewarding when people walk away with something to chew on for a while. You hope that the ideas, dialogues, and conversations that you presented kind of end up in the subconscious. They're thinking about it for a little, a lot longer than the show is up.

Kim: Do you have any final thoughts about, or plans for, the future of your museum and book arts work?

Jerushia: Two separate questions there ... well, for the book art stuff I just installed a solo exhibition at the Hudgens Center. It included six or seven pop-up folios. I'm really enjoying working with the mechanisms and trying to figure out the right scale. One of my former students graduated and is doing amazing work as a photographer. He came through and he said *oh these need to be bigger*, you *know*. The thing is though, when you start scaling up mechanisms the things that defy gravity require some additional engineering, and I'm in the infancy of understanding of the mechanisms in engineering right now, so there's that. I want to continue exploring pop-ups. I should give a shout out to Carol Barton who was a professor of mine at The University of the Arts. I did not know the gem that I had in her. My interest in pop-ups didn't happen until the pandemic and I had to come up with an online exhibition for the Museum. It ended up being about paper engineering and it kind of sent me down this rabbit hole. And then looking back I'm like, I had Carol Barton right in front of me, and I didn't take advantage. I took the class and thought Oh that's kind of interesting, but it didn't occur to me, like it just wasn't what my focus was at the time and now, now I'm kicking myself in the butt. But sometimes things happen that way. The same with Camille Billops, who was in the exhibition at the Papermaking Museum, and then you guys [at Emory] have the Billops-Hatch. I don't know how [Emory] lists this -as the Hatch-Billops or Billops-Hatch Archive? I met her as a student when I was at The University of the Arts and went to New York for the



Yesss, detail.



P.S. I Love You Matchbox Book, Digital print housed in a matchbox covered in decorative paper, 2023.

National Black Arts Festival. She was so friendly and I just didn't follow up. Some amazing artist said, "*You know, I'd like to see your work, stay in touch.*"

Kim: So, I know these things, these moments, may seem so fleeting. And you're right, as a young person, we don't realize what those opportunities might be at that moment. We're not really thinking about it at that moment. As you said about meeting Camille Billops, do you think now about what happened then?

Jerushia: Yeah, yeah, it's just some missed opportunities. But I'm playing with pop-ups and some stop-motion animation, which is not book arts, but I think it's book arts adjacent. There's something about, when I think of book arts, even if you're not telling a linear story, a combination of images, and the same with animation, is that kind of combining these images and at the end, hopefully, it resonates. Some idea or emotion resonates. I'm not necessarily interested in telling linear stories. A lot of my work is kind of implied or in fragments, like you see this image and hopefully, it inspires you to fill in the

blanks of what happened before and after. In terms of professionally, at the Museum I'm still trying to put on shows. Hopefully shows that stick with people. I would love to get a little more skill in fabrication to be able to do some fancier things, but you can do a lot with very simple techniques. So it's not a requirement. I don't know, no major dreams. I will say that I got a residency at Halden Book Works in Norway which is run by Radha Pandey and Johan Solberg to go in and develop a book arts project to incorporate some of the pop-up stuff and definitely some letterpress printing. That's next year, so terrific to be doing that. I have to say that this experience is coming through Tia's advertising to the members of the Book/Print Artist/ Scholar of Color Collective. Advertising to them that this is an opportunity to put in a proposal, and I was selected. It'll be nice to travel for the first time in a long while.

Kim: Oh, that's so exciting. Congratulations, that's terrific. Well, we've covered a lot of territory. Is there anything else that you would like us to know about you or about your book arts work or anything at all?

Jerushia: Um... to know about me or my book arts work... just that I'm out here, and I'm working, experimenting, and playing. I encourage other folks to do the same and then let us know what they're doing. It's so nice to see what other people are creating. Yeah, that's about it. I might encourage members of the Guild to, since like I said I'm kind of obsessed with pop-ups right now, take a look at the Movable Book Society and what they're doing. They put out an amazing newsletter with so much fun stuff. Check out the Print/Book Arts/Scholars of Color Collective website. We're out there. We're making stuff. Check the work out. I will say that Tia and I will have a shared table at the Tropic Bound Fair happening in February [2023], in Florida. Tia is the Keynote speaker, but we'll also have a table there. Unfortunately, I won't be able to make it physically, but some of my pop-ups and a little series called Dark and Quiet Spaces, which uses a little map fold, will be the on exhibit on the tables.

About the development of my work at the Papermaking Museum, I would love to see us produce catalogs for the exhibitions. Right now I don't quite have the bandwidth, but it is something that I would like to see us consistently provide in the future.

Kim: Fantastic, Jerushia. Thank you very much. This was wonderful. All our appreciation from The Guild of Book Workers, and the *GBW Journal* board thanks you for making time to do this interview. I really appreciate it.

Jerushia: Thank you for the opportunity. And yeah, I love the Guild of Book Workers. We love having the Guild exhibitions come to the Papermaking Museum. It's like Christmas when we get the box and start unwrapping the books!

Kim: Terrific! Thanks, again, Jerushia!

NOTES

AFTER OUR INTERVIEW, JERUSHIA shared the following information for anyone who might be interested in her ongoing activities. She recently taught a Papercut workshop for Paper Book Intensive in May and assisted Nicholas Silhberg's Pressing Pixels letterpress class at Penland in June (2023).

Jerushia noted that a scholarship from Rare Book School to attend their History of Typography course really helped her professionally, because it made Jerushia feel more prepared to teach her first Book Arts/Letterpress class at Kennesaw State University in Georgia. As a full-time employee at the Robert C. Williams Paper Museum, Jerushia no longer teaches that class, but it is an example of the impact that financial support can have for artists or scholars of color and other underrepresented groups.

After teaching the Book Arts/Letterpress course for several years at Kennesaw State, Jerushia served on the review committee for Rare Book School artists scholarships for a number of years. Though many people are aware of the offerings from Rare Book School, it bears repeating what a great organization it is.

Speaking of the impact of support, the Book/ Print Artist/Scholar of Color Collective is fundraising to support the work of artists and scholars of color operating in or writing about the fields of print, book, and paper. Here is a link to this terrific organization to learn more about their fundraising successes: www. bookprintcollective.com

Also, here are links for the Moveable Book Society: https://movablebooksociety.org/the-mbs-zoomshow-and-tell/ and an interview that Jerushia did with Helen Hiebert for her PaperTalk Podcast: https:// helenhiebertstudio.com/podcast/jerushia-graham/.

You can Jerushia's Instagram and website here: https://www.instagram.com/jerushia.graham/.

https://jerushiagraham.wixsite.com/jerushiagraham.



Flowers of the *dó* (Rhamnoneuron balansae) tree, whose inner bark serves as the principal raw material in Vietnamese papermaking.

PRINTS, PLEATS, AND PRESERVATION:

VIETNAMESE HANDMADE DÓ PAPER AND ITS APPLICATIONS

JAMES OJASCASTRO

LEGEND ASSERTS THAT THE FIRST PAPER was made in China by a government official named Cai Lun some two millennia ago, and that some six or seven centuries passed before this carefully guarded invention finally spread outside the Middle Kingdom. By the seventh century CE, proselytizing Buddhist monks took paper eastward to Korea and Japan, and by the eighth century, war between Tang China, the Tibetan Empire, and the Umayyad Caliphate eventually introduced the rest of Eurasia to paper too. Indeed, every well-known hand papermaking tradition, whether European, Himalayan, Indo-Islamic, Korean, or Japanese, tells a similar origin story tracing descent ultimately from China. Unfortunately, this collective narrative almost always omits the tale of the eldest sibling—one largely overlooked, forgotten, and now quite endangered: the hand papermaking tradition of Vietnam.

papermaker, and botanist, currently finishing a Ph.D. in ethnobotany at Washington University in St. Louis in collaboration with the Missouri Botanical Garden. Ojascastro employs a combination of methods—includina fiber trait measurements, experimental papermaking, species distribution modeling, and semistructured interviews— to explore the history, biogeography, and conservation of papermaking traditions (especially of Nepal and Vietnam) through a botanical lens. Outside of academia, Ojascastro uses his research background to guide and inform what plants and which processes will yield paper suitable for origami art.

James Ojascastro is an origamist,

-JAMES OJASCASTRO

ACCORDING TO SOME SCHOLARS, papermaking first reached Vietnam in the second century CE.¹—earlier than any other papermaking culture outside of China itself; however, details on exactly what plants were used for early Vietnamese paper and how they were processed and sheet-formed are entirely unknown, but vestiges of this experimentation are still apparent, with at least a half dozen different trees and bamboos still harvested by different ethnic groups to make artisan paper in Vietnam even today.² But by the thirteenth century CE, industries in the craft villages along the Red River—where Hanoi is today—had already converged on making paper predominantly from the inner bark of just one species: dó (Rhamnoneuron balansae), a small tree closely related to several other Asian hand papermaking plants, including Nepalese lokta and Japanese gampi.

In the eight centuries since, *dó* continued (and continues) to be the dominant raw material for hand papermaking in Vietnam—though mass-produced machine-made wood pulp paper has replaced it in many traditional cultural practices.

Vietnamese dó papermaking shares strong parallels with hand papermaking elsewhere in eastern Asia (e.g., Japan, China, Korea, and the Himalayas): Overall, the processes are very similar, but with key details distinguishing each as distinct traditions. Broadly speaking, eastern Asian papermaking follows a seven-step process: first, bark is harvested from suitable trees or bushes; second, bark is scraped to remove the outer layer and isolate the fibrous inner layer; third, the inner bark is cooked in an alkaline bath until the fibers separate; fourth, the cooked fiber is washed and beaten to a pulp; fifth, the pulp is mixed in a vat with water and a mucilage; sixth, the pulp is deposited from the vat to a screen to form sheets; and seventh, sheets are dried. Since these same steps differ in their execution from region to region, I will describe each step with comparisons to traditions practiced elsewhere.

FIBER HARVESTING

DÓ FIBER HARVESTING USED TO BE PRACTICED by many different ethnic groups in northern Vietnam, including (but not limited to) the Mường and Kinh, but now, the few *dó* harvesters who remain all belong to the Dao Tiền ethnic group.³ A century ago, *dó* harvesters across northern Vietnam planted and cultivated $d\delta$ trees on numerous small plantations, each 30-60 acres in size.⁴ $D\delta$ trees grown on such plantations were coppiced at the end of monsoon season (late summer-early fall) and their branches shipped by porter or cart to village papermakers in what are now the cities of Hanoi and Phú Thọ;⁵ however, with the discontinuation of papermaking in Hanoi proper by the late twentieth century, $d\delta$ harvesting is now nearly extinct,⁶ with only one district 100 km west of Hanoi still supplying $d\delta$ bark for papermaking.

In Đà Bắc, *dó* trees are propagated from seed. During the colonial era, *dó* was deliberately sown as seeds like a crop, but now bark harvesters let the seeds germinate where the fruits fall, later transplanting *dó* seedlings to new locations as needed. Then as now, *dó* is grown under a wide variety of conditions including in backyards, under a forest canopy, on slopes, along roadsides, and among other crops such as mangosteen and cassava. Once it has germinated, *dó* needs on average six to seven years of growth before it achieves a harvestable size—less (as soon as three years) if it is grown in monoculture under open sun, and more (up to eleven years) if grown under a closed canopy.

As the dó trees grow, harvesters maximize yield by pruning young branches to encourage the growth of a single, large, straight stem. At time of harvest, a tree may be pruned of five to twenty branches, each 1-2.5 cm in diameter, to yield about 340 g fresh (130 g dry) bark per tree. Dó trees take at least three years to regenerate biomass before they can be harvested again.⁷ The highest-quality fiber is obtained at the second harvest, when the tree is at least six years old. A typical open-sun dó tree grown for fiber could be harvested four times at three-year intervals over its lifespan; however, after its fourth harvest (as soon as age twelve), a tree can yield only a few weak suckers bearing low-quality fiber and is no longer harvested. If left alone, a *dó* tree may live to the age of twenty or more.8

In Đà Bắc today, *dó* harvesting is conducted primarily in the cooler months of November and December, when papermakers tend to stock on raw materials and when the bark harvesters have already completed their rice harvest. Some *dó* fiber is also harvested in July and August (concurrent

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with other crops), but the summer *dó* harvest tends to be small because *dó* bark does not peel readily when the weather is hot.⁹ Current harvesting seasonality contrasts with colonial records, which report September and October harvests.¹⁰ Unlike in Japan and parts of Nepal, where branches of *kozo*, *mitsumata, gampi*, and *lokta* are severed before being decorticated, *dó* harvest in Vietnam proceeds with the decortication first: An incision is made just above the root collar of the *dó* tree, and the bark is then peeled off the trunk or branch in long strips, leaving the bare wood to dry on what remains of the tree.

Once dry, harvesters come again in winter to cut



Method of removing bark from the *dó* tree, where an incision is made near the base of a branch or trunk and the bark is pulled towards the branch tips.

off persisting dead wood to use as fuel for stoves.

After peeling, *dó* bark must be dried quickly to prevent molding; this can take anywhere between two days and a week, depending on whether it is sunny or raining; once dry, bark is then baled and shipped to papermakers in Bắc Ninh, on the northeastern outskirts of Hanoi.

Altogether, a *dó* bark harvester can earn anywhere between 8 to 40 USD daily during the harvest season.¹¹

Once a lucrative agribusiness, *dó* cultivation in northern Vietnam a century ago attained yields as high as 460 kg dried bark per acre per year (~3500 harvestable *dó* trees per acre per year), with provincial-level bark exports reaching 120 tons or more every year (~920,000 *dó* trees harvested per province per year!), at a rate of 3.45 USD (2020 dollars) per kilogram for high-quality fiber.¹² By sharp contrast today, the

Base of a single dó tree, showing the stages of harvest. First, a trunk is decorticated to remove the bark, leaving the dead wood to dry while still on the tree (center). Next, the wood is chopped down and burned in wood stoves for home cooking and heating, especially in the winter months (lower left). Despite this extreme and routine coppicing, the dó tree is surprisingly resilient and capable of regrowing new trunks from the root collar at ground level (lower right).

Đà Bắc harvesters produce little more than three tons annually, which is sold to the few *dó* papermakers left in Bắc Ninh at a rate of just 65,000-85,000 Vietnamese đồng (2.73-3.57 USD) per kilogram.¹³

Bundle of dried dó bark in Đà Bắc, baled and ready for transport to papermakers in Bắc Ninh.

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PAPERMAKING

Fiber Processing

THE LAST $D\dot{O}$ PAPERMAKING REDOUBT in Vietnam are three villages (Dương Ổ, Đào Xá, and Châm Khê) in Phong Khê Commune of Bắc Ninh Province, where paper has been made by hand since at least 1435 CE.¹⁴ Papermakers here are Kinh, who are the dominant (85% of the Vietnam's population) ethnic group in Vietnam. Here, artisans begin the papermaking process by soaking bales of dry $d\dot{o}$ bark purchased from harvesters in Đà Bắc in tubs of water for three days. Once rehydrated, they then scrape the softened $d\dot{o}$ bark to remove the cortex, toughened fibers, and loose debris.

Artisan in Bắc Ninh scraping rehydrated *dó* bark to remove flecks of black bark and toughened white bark.

Next, the Phong Khê papermakers boil the scraped bark in a cauldron of 12% limewater for two days until the bark strips are soft enough to be pulled apart with bare hands. After cooking, the bark is rinsed through mesh repeatedly to purge the lime and then beaten; long ago, this was done manually using wooden mallets, but now Hollander beaters are used.¹⁵ Once the suspension of fiber pulp is homogenous, it is picked free of bark flecks and other debris and then transferred to a vat, where it is mixed with more water and formation aid in preparation for sheet formation.

Formation Aid

IN JAPAN, KOREA, AND BHUTAN, the formation aid typically used is *neri*, a mucilage extracted from the pounded root of a type of hibiscus called *tororo-aoi*

(*Abelmoschus manihot*). But in Vietnam, the formation aid is obtained by immersing and then straining wood shavings of tall trees (*Litsea monopetala* or *Litsea glutinosa*) in water overnight to yield a mucilage called *mò*.

Artisan in Bắc Ninh shaving a mò (Litsea sp.) trunk.

Shavings of *mò* wood are immersed in a bucket of water to yield a mucilage used as formation aid.

To prepare for sheet formation, the *mò* is then strained into a vat with water and *dó* pulp and mixed vigorously using a pole.

Papermaker in Bắc Ninh stirring *mò* and *dó* fibers together in a vat of water to prepare for sheet formation.

Papermaking Tools

THE VIETNAMESE SHEET FORMATION TECHNIQUE (*seo*), like that of Japan (*nagashizuki*), relies on structurally similar tools.¹⁶ In Japan, *nagashizuki* relies on a special kind of tool with two components: a frame (*keta*) made from *hinoki* (*Chamaecyparis obtusa*) wood, and a screen (*su*) made from very thin bamboo splints sewn together with horsehair or silk chain lines.¹⁷ The *keta* is fashioned from two frames hinged together like a clamshell; during sheet formation, the two frames are closed around the *su* and secured by means of a latch, forming a single unit (*sugeta*). In contrast, the Vietnamese frame counterpart (*khung seo*) is composed of two unhinged, fully separable magnolia-wood parts, such that the

Vietnamese tools for sheet formation, showing the two-part mould (*khung seo*), with the bamboo screen (*liềm seo*) sandwiched in between.

bamboo screen (*liềm seo*) is pinned between the two *khung seo* pieces using only pressure from the hands.

Only the largest *khung seo* are constructed with hinges. The greatest similarities are apparent in the bamboo screens: the Japanese *su* and Vietnamese *liềm seo* are essentially congruent, excepting the chain lines: *liềm seo* today are sewn exclusively with nylon monofilament fishing line.

Sheet Formation

TO MAKE VIETNAMESE PAPER BY HAND, the papermaker holds both pieces of the *khung seo* firmly around the *liềm seo*, and then swings them angularly as a unit into the tank filled with water, beaten fibers, and formation aid.

Papermaker in Bắc Ninh preparing to form a sheet, immersing the *khung seo* edge nearest to her first into the vat.

During the colonial era, the far side of the mould was dipped into the tank first, but today in Phong Khê the technique more resembles *nagashizuki* with the near side of the mould being immersed.¹⁸ Once the mould is fully submerged and oriented horizontally in the tank, it is pulled vertically out of the water and suspended very briefly above the tank to let the water (but not the fibers) drain between the bamboo splints of the *liêm seo*. As the water drains, the papermaker gently teeters the mould from side to side above the papermaking vat (*bể seo*) to distribute fibers uniformly on the *liêm seo*, contrasting starkly with the vigorous front-to-back sloshing typical of Japanese *nagashizuki*.

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Even fiber distribution in the resulting sheet is assured with gentle side-to-side teetering of the *khung seo* just above the vat.

The papermaker may then briefly "float" the mould on the water surface to further shake and wash any loose fibers into place; this step also may help reduce adhesion between the *liềm seo* and the wet paper so it can be couched more readily.¹⁹

The steps between sheet formation and sheet drying are essentially the same across Vietnam, Japan, and Korea.²⁰ To couch the newly formed *dó* sheet, the *khung seo* is lifted out of the way, and the *liềm seo* is deftly flipped over onto a moist sheet of fabric, with the wet paper sheet in between. The bottom edge of the *liềm seo* is flicked up and removed, leaving the wet paper sheet adhered to the fabric. This process of paper deposition is repeated, stacking wet sheets of paper directly onto each other in a post until the desired number of paper sheets are formed.

Couching of the newly formed sheet of *dó* paper onto a post, using the bamboo *liềm seo*.

Once the desired number of sheets are formed and couched, the post of paper is covered with another damp piece of fabric and placed into a screw press overnight to expel excess water.²¹

After pressing, the sheets can be separated from one another. This is done carefully, starting at one corner and then gently peeling each sheet one at a time from the rest of the stack.

After the post is pressed, the papermaker carefully peels the sheets one by one off the post.

Once detached, the sheet is flipped over and gently swept with a soft-bristled brush to remove any stray fibers and then transported in stacks to spacious concrete rooms and stairwells for drying.

Drying

IN VIETNAM, which receives copious amounts of rain throughout the year, drying paper is challenging. During the colonial era, sheets were usually dried either slowly outside (draped individually on bamboo rods and suspended on racks) or—as is still done in Japan,²² Korea,²³, and Bhutan²⁴—quickly indoors, each sheet pasted by brush for a few seconds on an oven-heated, wall-mounted metal plate.²⁵ Today, however, Vietnamese papermakers dry sheets with a third technique: using a pine-needle brush, they paste short stacks of about forty pressed *dó* sheets onto porous, unheated concrete walls indoors, and then they use an army of floor fans to wick away any remaining moisture from the paper stacks.

Drying of *dó* paper is done by pasting short stacks onto porous concrete walls.

This current method is scalable: as many as six thousand dó sheets can be dried per room at any given time. Drying time is seasonal. During the wet summers, paper takes ten days of fan-drying; during the drier winters, paper dries in half that time. Three-day expedited drying is possible

The drying process is accelerated with assistance from a small army of floor fans.

if air conditioning is turned on, but this happens sparingly due to the cost of electricity. Once the paper stacks are completely dry, the sheets are peeled apart, and the finished paper is then baled and sold across Vietnam or else exported abroad—mostly to France.

Once *dó* sheets are dry, they are scraped off the wall and peeled apart one by one, ready for sale.

USES

HISTORICALLY, DÓ PAPER PLAYED an integral role across many aspects of Vietnamese culture, including for writing, painting, woodblock printing, packaging, ritual burning, and the manufacture of fireworks; however, over the last four or five decades, political, social, and economic forces have together rapidly pushed Vietnam's centuries-old papermaking and paper arts traditions to the brink of extinction, strangling some uses and extinguishing others. But as globalization blends new ideas with old traditions, it has inspired young Vietnamese designers to co-opt dó and other handmade Vietnamese papers as a novel medium for all kinds of contemporary arts from around the world. In this article I will describe in detail just two extant uses: one old (Đông Hồ painting) and one new (origami).

Đông Hồ Paintings

PERHAPS THE MOST FAMOUS AND UNIQUELY Vietnamese use of *dó* paper is its role in Đông Hồ paintings.

Named for the village outside of Hanoi where they have been made since the eleventh century, Đông Hồ paintings depict allegorical and auspicious icons of Vietnamese folk tales, such as babies, carp, roosters,

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A typical Đông Hồ painting.

and pigs. The paintings are sold or gifted to bestow good luck and prosperity during special occasions, such as weddings and the Tết holiday (Vietnamese Lunar New Year).

Like with papermaking in Phong Khê, globalization and industrialization transformed the artisanal economy of Đông Hồ village. Previously, Đông Hồ was composed almost entirely of a cooperative that painted icons by hand. But as the market opened, artisans found it more and more challenging to continue making a living with Đông Hồ paintings, and many left the industry. By 1988, the Đông Hồ painting cooperative ended, leaving only Nguyễn Đăng Chế and his family to keep the tradition alive.

Although they are still called Đông Hồ paintings today, this is a misnomer: Painted icons are too prohibitively expensive to sell today, and the "paintings" sold today are instead mass-produced as hand-carved woodcuts. Nevertheless, the process of making Đông Hồ images begins today as it did centuries ago: by whitening *dó* paper, which is naturally straw-colored. Rather than using bleach, Đông Hồ artisans begin by fermenting sticky rice in water.

A bucket of fermenting sticky rice in water, used to treat *dó* paper before making Đông Hồ paintings.

After about five days of fermentation, the starchy liquid is mixed in a 70:30 ratio with finely pulverized, decomposed seashells to yield a milky slurry.

Crushed seashells, which are mixed with the sticky rice solution and give Đông Hồ paintings a subtle pearlescent quality.

The slurry is then brushed onto sheets of *dó* paper, which turn chalky white upon drying. The treated *dó* paper is then ready for painting or printing.

To make Đông Hồ paintings today, artisans begin by drawing a multicolored image on paper as it would appear in finished form. The image is then decomposed into monochromatic layers (usually six or fewer) which, when stacked together, reconstitute

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An artisan in Đông Hồ Village carving blocks of persimmon (*Diospyros decandra*), which are used for printing Đông Hồ paintings.

A Đông Hồ printmaker blockprinting a now-complete Đông Hồ painting.

the initial picture. Each layer is traced onto a slab of *thi* (*Diospyros decandra*) wood, and then chiseled according to the tracing.

Each block is colored by pressing on burlap inkpads, and the prints are layered sequentially on a sheet of seashell-treated *dó* paper and then left to dry.

Once all the necessary wooden blocks are carved for a given image, the Đông Hồ artisans can produce four or five hundred prints per day.²⁶ Although the village sells prints throughout the year, especially to visiting tourists, the overwhelming majority of Đông Hồ paintings are sold in winter, right before Tết.

Origami

IN THE 1950S, A MODEST THOUGH PROLIFIC paper artist named Akira Yoshizawa was invited to exhibit his origami pieces at a museum in Holland. Yoshizawa's exhibition, surpassed four decades later by an even bigger show at the Louvre, thrust origami onto the global stage, transforming it from a Japanese craft to a global art.²⁷ The world took note, and origami neophytes outside of Japan quickly and zealously embraced paperfoldingexperimenting, creating, and collaborating along the way. By the twenty-first century, some kinds of origami had become so intricate that origami artists needed to tailor the structural demands of so-called "super-complex" designs to specific kinds of paper capable of withstanding the abuse of hundreds or even thousands of folds. While origamists in the West and Japan had easy access to countless specialty papers, many talented artists in developing countries did not have this luxury. Constrained by accessibility challenges, one young folder in Hanoi found a solution—practically in his backyard.

Vietnam Origami Group (VOG) was founded in 2005 by just a few young artists in Hanoi, most of whom were still in high school or college. At the time, few kinds of suitable paper were available in Vietnam to fold complex designs; the paper of choice then was a Chinese-manufactured, textured, crisp machine-made paper called pearl crumpled paper. But pearl crumpled paper was not without drawbacks: It became brittle if folded excessively, and it was only available in ten or twelve colors. For want of more durable and customizable papers, some Vietnamese origamists began experimenting with locally available handmade papers—in other words, *dó*.

Like the Đông Hồ printmakers, Vietnamese origami artists must treat their *dó* first, because it is

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too soft and insufficiently crisp to fold untreated. To do this, they smooth a sheet of *dó* on glass, brush a watery solution of white polyvinyl acetate (PVA) glue onto it, and leave it to dry almost completely. When the sheet is still slightly damp, the dó is carefully peeled off the glass and hung to dry completely. The treated sheet is stiffer and can be folded and shaped thenceforth. Color is added by mixing a few drops of acrylic paint in with the PVA solution before application. By demonstrating the versatility and suitability of dó for new artistic purposes, Vietnam Origami Group has not only broadened the corpus of origami knowledge, but also provided a way for paper artists around the world to financially support indigenous papermakers and help them to keep practicing their centuries-old traditions.

"Shark", designed and folded by Nguyễn Hùng Cường from one uncut square of *dó* paper. Photo by Nguyễn Hùng Cường.

Conservation

DESPITE A HISTORY OF PAPERMAKING spanning at least seventeen centuries, Vietnam today is at grave risk of losing its unique and diverse paper arts heritage. As with Japan²⁸ and Korea,²⁹ the greatest threat to hand papermaking in Vietnam is displacement by machine-made, wood-pulp paper industries, which produce cheaper (but often lower-quality) papers at large scales. Fortunately, for some aesthetic, artistic, and conservation-related purposes, machine-made paper cannot replace handmade paper, ensuring that a small but persistent demand for handmade paper continues even today. As a result, just a few bark harvesters, papermakers, and paper artists left in Vietnam continue participating in this tiny artisanal economy today. Together they form a delicate house of cards, where extinction of any single step in the transformation of a plant into a handmade paper product risks the total collapse of Vietnamese paper arts traditions: Đông Hồ paintings cannot be made without dó paper, and dó paper cannot be made if dó bark is not harvested. Furthermore, as has also happened with the dó tree, without harvesters, papermakers, and artists, artisan papermaking plants become less common, with no one interested or capable left to cultivate or manage them.

Notwithstanding its precipitous decline and precarious present status, Vietnamese papermaking and paper arts can still survive and even thrive through the twenty-first century, but urgent and coordinated support is necessary. Fortunately, neither bark harvest, nor hand papermaking, nor most kinds of Vietnamese paper arts have gone extinct completely, and even in places where they are no longer practiced, there are usually still elders alive who retain critical traditional ecological and artisanal knowledge that can be shared and leveraged to revive recently lost practices; however, since Vietnamese paper arts are the product of a complex, stepwise, and interconnected process involving the application of specialized knowledge by just a few highly-trained and irreplaceable people, it is essential that conservation efforts are broadly supportive of the whole system and not just a single step or agent therein. Creative support systems-both domestic and international-are therefore needed to conserve Vietnamese paper arts, but it is also imperative that these support systems

complement, rather than displace, these unique and threatened traditions; origami must complement—not displace— Đông Hồ paintings. So far, with targeted efforts and cautious optimism, this has been the case.

One novel use that is still underexplored is the utility of Vietnamese dó paper in document and book conservation. Many Vietnamese papermakers have documents-still in excellent shape-written on dó paper and made by their ancestors three or six centuries ago. This is especially remarkable given the hot, wet climate of Vietnam and the fact that such heirlooms are rarely (if ever) stored under archival-quality conditions! These anecdotes (observed firsthand by the author on one occasion) point to the possibility that high-quality dó paper could complement kozo as a dimensionally stable, archival-grade conservation paper. In fact, some Vietnamese archivists are restoring old Vietnamese documents with contemporary dó paper. But before this ethnobotanist rashly recommends you paste dó on the tears and defects of any antique book or document, I invite brave conservators to cautiously test and experiment with dó themselves to see exactly under what conditions it performs well as a conservation paper. Short of this, dó can still find greater use in contemporary book arts: although Japanese-bound, dó-paper notebooks are now available for sale to tourists in Hanoi, more work is still needed to fully explore the suitability and versatility of dó paper for artists' books today.

A hand-bound notebook made from sheets of *dó* paper. Photo by Trần Hồng Nhung.

Dó paper can be purchased online from Zo Project, a Hanoi-based social enterprise run by paper scholar Trần Hồng Nhung. Website: https://www.zoproject. com/.

NOTES

1. Jeff Peachey, "Hand Papermaking in Northern Vietnam," *Hand Papermaking* 10, no. 1 (summer 1995): 13-17.

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Images of students at work in the binding area, provided by the Cotting School Archives.

BOOKBINDING AND THE COTTING SCHOOL

SAMUEL ELLENPORT

"A 21ST-CENTURY READER might look harshly on the terms 'crippled' or 'deformed' used by the early leaders... Yet the founders and early leaders of the school were progressive and caring women and men, and their language reflects the times in which they lived."

> —DAVID MANZO AND ELIZABETH PETERS, COTTING SCHOOL, ARCADIA PUBLISHING, 2008

FOUNDED IN 1893 IN THE BACK BAY AREA OF BOSTON, the Cotting School was the first school in America specifically for children with physical disabilities. Its original name was The Industrial School for Crippled and Deformed Children; its stated purpose was to promote "...the education and special training of crippled and deformed children."¹ The driving force in the creation of the school came from two orthopedic surgeons from the Children's Hospital: Drs. Edward H. Bradford and Augustus Thorndike. The majority of the students faced physical problems from being born without limbs or having lost limbs in accidents that occurred in industrial settings. Sam Ellenport has been a hand-bookbinder in Boston since 1971. He has written about, lectured, and taught the craft in the US and England. He helped found the bookbinding program at the NBSS, and remains an advisor. While witnessing the tremendous changes in the book arts, Sam remains a defender of the classic aesthetic developed around the physical book. An avid reader and enthusiastic gardner, Ellenport has taken up the piano after a 70+ year hiatus. It was not until the Keating-Owen Act, the first child labor law, was enacted in 1916 that there was a mandated age floor of 14 below which children could not be hired to work. The underlying issues for students changed over the past century. As the following image from 1970 shows, by then there is no longer mention of accidental dismemberments, and the effects of the polio vaccine first available in 1954 has resulted in the removal of that disease from the list. While earlier cases included children with the debilitating effects of tuberculosis, for example, most of the more recent ailments among students were caused by neurological diseases.

Our students are handicapped by the following diseases:

Cerebral Palsy	62	Brain Stem Dysfunction	1
Spina Bifida	13	Arthritis	1
Muscular Dystrophy	9	Asthma	1
Polio	14	Arrested Hydrocephalus	2
Birth Defects	8	Achondroplastic Dwarfism	1
Cardiac Defects	5	Fibrous Dysplasia	2
Legg Perthes	4	Meobius Syndrome	1
Hemiplegia	3	Neurofibromatosis	1
Polyneuropathy	2	Pseudochondrodysplasia	1
Paraplegia	2	Louis Barr Syndrome	1
Congenital Paraplegia	2	Osteogenesis Imperfecta	1
Arthrogryposis	2	Dyslexia	1
Burn Deformity	1	Scoliosis	1
Myopathy	1	Petit Mal Epilepsy	1
Osteochondritis	1	Slipped Epiphysis	1
Hypopituitary	1		-

A breakdown of the types of handicaps among students in 1970.

Since its founding, the Cotting School's curricula included a full array of typical school subjects: reading, writing, arithmetic, history, and geography. However, what distinguished the school was that all of its students had serious handicaps. In addition to the need for general educational programs and a variety of physical therapies, the Trustees were aware from the start that enabling their students to earn money after graduation was to be a mandatory component of their educational policy. By 1900 the school had set up training programs in several industrial crafts, including basketry, chair caning, sewing and weaving, and printing: The print shop as reported in the Annual Report of 1904, "had filled 336 outside orders and 49 for the School: a total of 220,000 printed items... In 1901 sewing orders totaled \$393.96, cane weaving \$228.59 and baskets \$164.00."² And by 1910 new classes in cobbling, cooking, and woodworking were added to the program. In the *Annual Report* for 1909 Dr. Bradford emphasized the continuing importance of enabling students to become gainfully employed. He saw this as an essential part of "...our central idea of making cripples eventually self-supporting."³ In that same *Annual Report*, it was noted that former students had found remunerative work as stenographers, printers, salesgirls, and workers in electrical supply houses. The following images from the early 20th century show students setting type as well as the cover of the sales catalog which listed services the students were trained to provide:

In 1904 the school moved from earlier locations near Copley Square to a location on St. Botolph Street just west of Massachusetts Avenue. The new building was home to over 100 students, and more programs were added. Between 1926 and 1929 the industrial arts program was expanded. Woodworking grew to include wood finishing and cabinet and furniture making; training in sewing was expanded to include fine linen embroidery, and linotype machines were added to the printing department. Expanded also were the performing arts and visual arts programs. A new assembly hall was built in 1927 and was used for chorus and drama events. A year later a gym was

HAND WORK FROM The Industrial School for Crippled and Deformed Children 241 St. Botolph Street Boston, Mass.

The pamphlet cover advertising work offered by Cotting School students.

The Cotting School building in 1904 on St. Botolph Street in Boston.

added to the campus, and sports were introduced (basketball, baseball, and volleyball) which complemented development of treatments for muscle weakness and the necessity of massage therapies.

Bookbinding was a logical extension of the printing department at the Cotting School, and Austin Murphy first filled that need as an instructor in the 1950s. In 1966-1967 Everett Roundy, then head of the printing department, took over for a year. He was followed by Duane Smoot as instructor and soon after, by 1971, Frank Grazulis joined the staff and served a long tenure.

Frank Grazulis was born in Cambridge, MA in 1913. He graduated from the Rindge Technical High School in 1931. By 1935 Frank was employed as a bookbinder at the Harvard University Bindery, where he worked until he joined the Army during ww11. You can see him standing at the bench just right of center:

Frank Grazulis at the Harvard University Bindery, provided by his son, William Grazulis.

After serving as a technical sergeant in the US Army Air Corps during WWII, Frank worked at the Plimpton Press in Norwood before being hired by Sam Donnell, who ran the New England Bookbinding Company on Blackstone Street in Cambridge. It was from that bindery that Frank took a position at the Cotting School, which was still located on St. Botolph Street in Boston's Back Bay. Frank worked at the school until his retirement in the late 1980s. For over 20 years Frank taught bookbinding to students with different challenges than those who had come a century before. In the past half-century many of the students exhibited neurological disorders instead of loss of limb or physical deformities. Yet the program remained successful and, working with the printing department, the students followed the tradition of the school and produced work for clients.

Frank Grazulis at the Harvard University Bindery, provided by his son, William Grazulis.

The Cotting School was several blocks west of Harcourt Street and The Harcourt Bindery. The link between The Harcourt Bindery and the Cotting School became close once I hired Julia Grazulis, Frank's wife. She became head of Harcourt Bindery's sewing department and strengthened the link between the two places which lasted through the mid-1980s, when Harcourt Bindery moved to South Boston, and the Cotting School relocated to a beautiful 13 acre campus in Lexington, Massachusetts. Harcourt Bindery provided some cutting services as well as gold tooling by hand on special orders for The Cotting School.

Several images exist of the binding area at the Cotting School, mostly from the 1970s. Details in
SAM ELLENPORT



Students collating printed pages and embossing covers.

the images confirm that these were taken before the school moved to Lexington; the old radiators and tiled walls are a giveaway, as are the window shades. The first image shows a student collating printed pages at a table, while in the background two others are doing gold embossing on covers.

Also taken from the Cotting School archive is this image of a student making a cover for one of the many books produced:



A Student making a book cover.

A third image shows both sewing and gold embossing. Notice the pile of books in process on the table in the background. By all accounts, this testified to the output of the printing and binding areas.

Frank was an ideal instructor for the bookbinding program. He was not only a good bookbinder, but



Students sewing, gold embossing, and working in the bindery.

had those characteristics that made him an ideal instructor: patience, persistence, and optimism. He shared the view that the children came first, and that the satisfactions of making an item or completing a project significantly enhanced their self-respect and pride. His tenure at the school benefited generations of students, helping the students build confidence in themselves and their abilities.

After Frank's retirement, the bookbinding department was phased out. Yet the school's commitment to including industrial crafts in the curriculum continues. The industrial crafts, bookbinding among them, share many traits. They were based on mastery of small steps taken in order which, if done carefully and in order, produce a finished product worthy of respect. Much of bookbinding is often repetitious: folding, gathering, sewing through the signatures, or making multiples of day books, folders for presentations, and case bindings. In the instance of the Cotting School, the role of industrial crafts not only inculcated a discipline, but also led to a result in which students could justifiably take pride. There still exists a vocational industrial crafts program that prepares students for paid work, volunteer service, or further training. This is very much in keeping with the Founders' vision of students participating in the world after their Cotting School education. Clearly the vision and values of the school's Founders continues today.

BOOKBINDING AND THE COTTING SCHOOL

NOTES

The two images of Frank Grazulis at the Harvard University Bindery were provided by his son, William Grazulis.

Images of students at work in the binding area were provided by the Cotting School Archives.

If you are interested in learning more about Cotting School, their website is www.cotting.org or you can call Nora Frank at 781-862-7323

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Bradel, bonnet case, three-piece case, Gebrochener rücken, or, lapped-component binding.

THIS IS WHAT I CALL IT/THIS IS HOW I DO IT: THREE APPROACHES TO A COMMON CASE BINDING TECHNIQUE

ANNA EMBREE, DEBORAH HOWE, CONSUELA METZGER

INTRODUCTION

PERHAPS MANY OF YOU HAVE LEARNED to make a case by attaching the boards to each other with a piece of material before covering the case and attaching the covered case to the textblock. What did you call that kind of case? What bookbinding traditions did you associate with that type of case? Vocabulary is such a key component to any discipline; it provides a basic and foundational framework for learning, conceptualizing, and understanding the skill at hand. Sometimes, different vocabulary is used to describe the same or similar practices, and thus confusion can emerge. It was with this in mind that we were inspired to write this article. Through discussions at various times over the past few years we realized that this type of binding has many different approaches and uses, so we thought it would be enlightening to delve into these various nuances. Anna Embree is a Professor for the MFA Book Arts Program in the School of Library and Information Studies at The University of Alabama. She teaches courses and workshops in bookbinding, box making, and special topics in book preservation and book history. Embree has a strong interest in the physical and material aspects of book structures. She has collaborated with printers and papermakers on limited edition handmade books, and has exhibited widely.

Deborah Howe is the Collections Conservator at Dartmouth College Library. She teaches in the Book Arts program there and is on the Board of Directors of the Morgan Conservatory in Cleveland.

Consuela (Chela) Metzger, Head, Preservation & Conservation, UCLA Library, graduate of North Bennet Street School and still in love with book structures. Committed bicycle commuter, hiker, and camper.

APPROACH #1—ANNA EMBREE

What I Call It

I CALL THE TYPE OF CASE IN QUESTION a built-in groove case binding. This owes to the strong joint definition that is created in the case construction process, unlike joints that are defined by brass edge boards (or similar exterior forces) during casing-in. I have also called this case a lap component case binding because of the material that spans the two boards and allows for the creation of the joint prior to covering (this material laps the boards). I have never called this structure a Bradel binding. Though similar in form, it is truly a case binding and therefore does not conform to my understanding of the Bradel structure. I would categorize Bradel binding as part of the in-board tradition, meaning the boards are attached prior to covering, rather than the case binding tradition, where the cover is made off the book.

I use the built-in groove case binding primarily for two types of work: flat-back and rounded case bindings for one-off and edition work. I also use the structure for rounded and backed books only when making new cases for old, but intact, text blocks. The built-in groove structure is excellent for efficiently forming a case to fit an existing (and often deformed) book block with ease; however, I find the pressed groove case (aka French groove) more efficient for editioning rounded and backed books.

How I Do It

Because I primarily use this binding for flat-back and rounded-back books, I will focus my instructions on these types of text blocks. Instructions are for the cases only.

BUILT-IN-GROOVE CASE PREPARATION

Make a Lap Jig

This is a jig I use for quickly and accurately positioning the spine stiffener on the paper that laps the boards of the case. It consists of a large piece of mat or binders board with additional strips of board adhered to two of the edges. When making a jig, carefully place the side pieces to create a perfect 90-degree angle.



Cut Materials for the Case

Always cut the boards, spine stiffener, and lap paper to the same height at the same time.

- 1. Cut two boards for the covers —
- Height of boards=height of text block (including endbands).
- Width of boards=width of text block plus about ½" (final trim later).

THREE APPROACHES TO A COMMON CASE BINDING



2. Cut one Spine stiffener —

FLATBACK TEXT BLOCKS: 20 point card or 2 ply Bristol board. 20 point card is a bit stiffer than Bristol, and this can make case assembly easier.

- Height of spine stiffener=height of boards.
- Width of spine stiffener=thickness of text block plus 4 cloth thicknesses. For very thin (1-2 section books), I increase this dimension to the thickness of the text block plus one board thickness).

ROUNDED TEXT BLOCKS: I prefer to use Stonehenge printmaking paper for the spine stiffener but an 80 lb text weight paper will also work if the book is not very thick. The advantage to the Stonehenge paper is that it is very flexible but thicker than text weight paper. The extra thickness of the Stonehenge paper makes positioning the boards easier and gives a crispness to the spine when the case is folded around the text.

- Height of spine stiffener=height of boards.
- Width of spine stiffener=thickness of text block from shoulder to shoulder at the widest point.

3. Cut one piece of lap paper—70 lb Mohawk super-fine or comparable paper.

- Height of lap paper=height of boards.
- Width of lap paper=width of spine stiffener plus approx. 4".

BUILT-IN-GROOVE CASE CONSTRUCTION

Preparing the Lap Paper Using the Lap Jig

1. Place lap paper into the jig making sure the paper is tight to the L-shape of the jig.

2. Put a ruler on top of the lap paper in alignment with the L-shape of the jig. Adhere the spine stiffener to







the lap paper, pushing it against ruler to ensure it is adhered straight.

3. Allow to dry (approximately 5 minutes).

4. Place the ruler on the other side of the lap paper in alignment with the spine stiffener and trim so both sides are the same widths.



5. Flip the lap paper over and, on the back side of the paper (spine stiffener down), use a bone folder to score along the edge of the spine stiffener through the lap paper.



Measuring the Joints and Attaching the Boards





The joint width for any book of this type should generally be between 5-7mm depending on the size of the book and the thickness of the materials. Joints should only be out of this range in instances when the book is miniature or greatly oversized, and the boards are either extremely thin or thick. 6mm is an excellent starting point and should look nice and function well for most cases.

1. Return the lap paper to the lap jig, spine stiffener side down, and adhere the boards to the lap paper making sure the heads of the boards align with the head of the spine stiffener and that the joints are even. Board placement can be determined by using dividers to make three small prick marks on either side of the spine stiffener.



THREE APPROACHES TO A COMMON CASE BINDING

Board placement can also be determined with a joint gauge.

Note: Boards must be affixed to the opposite side of the paper as the spine stiffener. We want the stiffener adhered to the inside to prevent deformation of the spine when covered. If the spine stiffener is adhered to the outside of the case, it will often start to curl away from the spine–this is especially problematic in flat-back cases.









2. Let dry under light weight.

3. Tear or trim the lap paper where it is not fully adhered. Edges may be sanded to decrease visibility under the pastedowns.

4. Put the text block into the case and measure the fore edge of the boards for final trimming. Fore edge



squares should be 1mm wider than head and tail squares to accommodate the cloth that will be turned in at the spine. If you do not do this, your fore edge square will be too small after covering.

5. Set the measurement for the final board width on the board shear. Align the spine edge of each board to the back gauge when cutting to ensure both boards are cut to exactly the same width.



Covering the Built-in-Groove Case

Instructions are for full-cloth (or paper) covering; however, quarter and half are also acceptable.

1. Cut cloth or paper for covering.

- Height of cloth=height of boards + 1.25" (5%" for each turn-in)
- Width of cloth=width of assembled case plus 1½" (5%" for each turn-in plus a little extra to work into the joints).







2. If desired, draw pitch lines to help position the case on the cloth.

3. Glue out cloth.

4. Center case over cloth. Be sure the lap paper and spine stiffener are face up and the bare boards are face down (towards the cloth).

THREE APPROACHES TO A COMMON CASE BINDING







5. Gently work the cloth against the spine edges of the boards to create well-defined joints prior to adhering to the boards themselves. If you do not do this there will be air pockets at the joints and a less defined profile.

6. Once spine is adhered, gently drop the boards gently onto the cloth – do not press.



7. Turn case over (cloth side up) and lift the cloth on each side. Use folder to accentuate each joint before smoothing the cloth over each board.





8. Miter corners and turn in the head and tail, followed by the fore edges.

9. Allow to dry if not casing in immediately. Place between boards and moisture barriers, and dry under a light weight.



Finishing the Built-in-Groove Case

1. Trim out the turn-ins to an equal amount (approx. $\frac{1}{2}$ "-5%").

2. Wrap case around text block and check fit.

3. If desired, add fills for a more refined look under the pastedown

4. Trim pastedowns to accommodate for the stretch that will occur when the paper is glued out.

5. For a rounded case, use a small dowel or the edge of your bench to round the spine of the case to the same shape as the text block spine.

6. Case-in the text block. Insert moisture barriers and briefly nip. Dry between boards under a light weight. Do not open until completely dry.

APPROACH #2—DEBORAH Howe

I FIRST LEARNED THIS STRUCTURE from Scott Keller, when I was a Conservation Technician at Northwestern. We called it a conservation case because of its strength in the joints and the ability to create a sure fit around what was sometimes an irregular text block. Since that time I have come to know other names for this structure such as Lap Component Case, Bonnet Case, Reinforced Case, Built in Groove Case, and Bradel Case.

When I taught this structure at the Paper and Book Intensive in 2010, I contacted colleagues to inquire what they called it and how they did it. This investigation lead to some interesting conversations about nomenclature, vocabulary and the different approaches that this structure provides. These discussions inspired Anna, Chela and I to write this article.

Acknowledging previous publications on this topic, Peter Verheyen has written extensively on this structure with emphasis on the German approach, referred to as the German Case.

As noted, the key component to this structure is the inner connector piece that joins the spine stiffener and the two boards, forming the case before covering. I tended to refer to this as the "the connecting piece" never having a definite name for it, but now I lean towards Anna's use of the term lap component. It would be instructive to come up with some standard vocabulary pertaining to this structure.

This reinforced case structure can have many applications and variations. Used in conservation, it gives the book a sturdy joint and custom-fit. In decorative bindings, it can be used with variation and adaptation to create unique structures. Such as partially adhering the lap component in order to cover the board at the spine edge and covering the spine with a different material.

INSTRUCTIONS

1. To begin, cut the boards, spine stiffener, and lap component to desired height depending if you like a larger or smaller square. This way they are all cut together. I tend to use mohawk 80 lb text for the lap component, and 10 pt for the spine stiffener. Board width is cut wider than needed, to be trimmed later.



Components laid out before assembling.

2. Once the pieces are cut to height, measure the thickness of the spine and cut the 10 pt. spine stiffener to that measurement, then cut the lap component about 4" wider than that.

3. Glue the spine stiffener to the lap component. This gets rubbed down well then turned over to define the edge of the spine stiffener in order to highlight the transition point of the shoulder.



Defining the edge of the spine stiffener (outside).



Using dividers to measure out the joint width.

4. Measure out the joint width. This of course is adjusted according to what your book needs but I have found that ⁵/₁₆" tends to be a magic average measurement.

5. This measurement is transferred to the lap component by resting one side of the divider next to the defined area and putting a prick mark at the 5/16" point. This is done at the head and tail on both sides of the spine stiffener, making four points. Now you have the placement points where the boards need to sit.



Putting prick marks at the 5\16" point.



The four prick marks.



Board glued up ready to be placed on outside of the lap component.

6. Place about $1\frac{1}{2}$ " of glue on the edge of one of the boards trying to make it slightly uneven.



Checking on the inside for board alignment. Feel the edge of the board at prick marks.



Both boards attached to the lap component.



Inside lap component with torn edges.



Smooth down edge.

7. Using the prick marks as guides place the board on the outside of the lap component. Because the prick marks go through to the inside you can also check the placement from inside as well.

8. Once dry, tear the lap component along the glue line so that the tear is uneven and affords a smooth transition. Once the excess lap component is removed smooth it out with a bone folder.

9. Place the case around the text to check for proper fit.

10. The next step (which is easy to forget and which I have done may times) is to make the final cut for the width of the boards. Measure a hair larger than what appears to be the right measurement because once the covering material is put on the case the fore edge has a tendency to recede. This is one of the key benefits of



Checking for fit.

this structure as it allows for discrepancies in oddly shaped books.



Text block in case to measure for board width.



Mark orientation of case with head of text block.

11. Once the fore edge of the boards are cut, the case is finished and ready for covering. A nice option for this case is to cover in paper. Because of the lap component there is extra strength in the joint which can accommodate a lighter material such as paper. Also, this is a good time to mark the head of the text in the upper left-hand corner and place an arrow on the case depicting the top. This way you will always place your book in to the case the same way.

12. Cut material for covering leaving a bit more turn-in on the fore edge to accommodate for the joints. I tend to cut the covering material a bit over sized then trim after.



Covering material cut with turn-ins.

13. Glue out covering material.



Gluing out the covering material.



Left side of cloth folded over.

14. Once the cloth is glued out, fold over the left side to facilitate the covering process.

15. Place one side of the case into the exposed area of the glued cloth. Apply pressure then turn over case so that the turn-ins are facing down. This can get a bit messy if the turn-ins end up sticking to the scrap paper.



Placing case onto glued cloth.

16. Lifting up the folded cloth, slowly work the cloth into the defined groves of the spine area.

17. Once the right joint is set, open up the cloth and work it across the spine and into the left joint.



Beginning to work the cloth into the joint.



Beginning to work the cloth into the spine.



Working the cloth across the spine while lifting cloth.

18. Once the cloth is nicely set into the joints and across the spine, the rest of the cloth is lowered onto the other board.

THREE APPROACHES TO A COMMON CASE BINDING



Continuing into the other joint.



Laying the rest of the cloth down onto the board.



Rub down spine and boards ensuring good adhesion.

19. Turn over case, cut corners, and do turn-ins. Turn-ins may need to be reglued.



Cutting corners.



Corner detail, second cut.



Corner detail with small tab.

20. Once the case is covered, let it sit for a moment with the boards flipped back to insure the joints dry nice and crisp.



Smoothing down turn-ins at head and tail inside.



Smoothing down turn-ins at head and tail outside.



Insuring joint definition.

21. While the case is still damp, place it around the text block to help start forming the spine around the



Setting text block in case.

text block. Define joints with bone folder. Once the covering material is dry, I trim out the turn- ins.



Defining joints.

22. Case in as normal. When putting this style of case in the nipping press I will tend to use rods rather than the sharp edged brass boards.

Photography by Margery Cantor, the Impermanent Press mcantor@inquiringmind.com.

APPROACH #3—CHELA Metzger

WHAT WE CALL IT, HOW WE DO IT

DEAR READER, I HESITATE to delve into what I call the "world's most fussy case binding," but then I realized that I am not going to describe the leather covered Built-In-Groove Case with Headcap, which is actually the world's fussiest case binding, so now I feel better. I am going to talk about a cloth covered Built In Groove Case in this article.

I call this type of case a "built in groove" because you do not need brass edge boards, knitting needles, or rods in the groove when pressing the book after casing in. By the time you case in, the groove is set, and of course it is perfect. When I first learned this case binding at North Bennet Street School under Mark Esser, we called it a "Bradel" binding, but after hearing the term Built-In Groove, that sounded good to me and I stuck to it.

I use this type of case almost exclusively when I make a new case binding, which is very rarely, so keep that in mind. Speed is not of my essence with this binding at this point in my life. I very much like the look of the crisp groove in this style of case. But from a conservation point of view, it works very well for books where the board placement and groove must accommodate two very different shoulder shapes, and the spine may be pretty differently shaped from head to tail, since it can be modified with ease. This example assumes a regular spine shape and regular shoulders.



Spine Stiffener for the Wrapper

Cut a spine stiffener to adhere on the inner face of the wrapper. I generally use a thin machine-made paper for this, to pull the wrapper into a curve as the adhesive dries. This spine stiffener must be the exact width of the spine or a shade narrower if you are accounting for adhesive expansion and have very thin covering material. It should be a 1.5 cm or so taller than the height of your text block.

Create a Wrapper

1. Cut a piece of wrapper paper slightly shorter in height than your spine stiffener, and the width of the spine plus 4 or so cm on each side. This wrapper paper should be robust, at least 80-pound text and squared up.

2. Draw a 90-degree head-to-tail line for spine stiffener placement on that wrapper paper in such a way that you have room for the spine strip in the middle of the wrapper, and roughly the same amount of wrapper paper on each side of the adhered spine strip.

3. Adhere the spine strip to the wrapper paper carefully along your 90-degree head to tail pencil line, allowing some excess spine stiffener paper at the head and tail of the wrapper. Bone down carefully, and nip in the press.

4. When dry, trim off excess spine stiffener paper at head and tail.

5. Cut the wrapper to the desired height of your case, with or without squares.

6. Turn the wrapper spine stiffener side up, and with a straight edge and bone folder crease along each side off the spine stiffener strip and fold the wrapper paper up at a 90-degree angle. You now have a wrapper that should have a slight inward curve from the adhered thinner spine stiffener paper, and should fit your book spine width nicely. If it does not, make another!



Mark and Crease the Base of the Shoulder on the Outside of Your Wrapper

1. Mark the head and tail of your wrapper in a way that does not get covered up by the covering material.

2. Holding the text block inside the wrapper carefully, mark the base of the shoulder on each side with your thumbnail. Do this in a few places, and choose and "average" base of shoulder distance. Be sure to make the marks where there is swelling from the sewing. For this text block we are assuming the base of the shoulder is roughly equal on each side. Translate the chosen distance from the top of the shoulder to the base of the shoulder to the wrapper on either side of the spine stiffener strip by marking your desired base of shoulder measurement with tiny tick marks on each side of the spine stiffener strip on the OUTSIDE of the wrapper and use a pencil to connect your marks and create a base of shoulder line on the outside of the wrapper.

3. Crease this base of shoulder line on the outside of your wrapper, and bend the overhanging paper up at a 90-degree angle.

4. Fit the wrapper over the back of the text block and shoulder and be sure you are happy with your base of shoulder line. If not, make a new wrapper.





Mark a Board Placement Line Outside Your Base of Shoulder Line on Your Wrapper

1. Depending on the angle of your shoulder and the bulkiness of your covering material, mark the appropriate board placement lines on the outside of your wrapper with a pencil. This line will likely be away from your base of shoulder crease, depending on the angle of your shoulder.

2. The gentler the shoulder and the thinner the covering material, the closer the board placement can be to the base of the shoulder. The closer to 90 degrees the shoulder is and the thicker the covering material is, the more a "one board's width from base of shoulder" distance makes sense.

3. The goal of this board placement decision is to offer the case more material in the joint to flex at a gentle angle when the boards are fully thrown back from the text block. The beauty of a case binding with a groove is that the covering material does not have to flex 90 degrees on one tiny top of shoulder point, but there are several millimeters of material involved when the board opens.

Choose Boards and Attach the Boards to the Wrapper

1. In general, to minimize high points that could abrade more than others in shelving, the boards should be about the height of the top of the text block shoulder.

2. Cut your two boards to the height of the wrapper, but leave the fore edge 1.5 cm longer than the text block width.

3. Create a 2 cm or so stripe of glue on the spine edge of each board and apply the boards to the board placement line on the wrapper very carefully. I would use straight PVA stippled onto the board, and work quickly to accurately place the boards into position on the board placement line.

4. Nip the wrapper and boards in the press. Dry under some weight for at least 20 minutes.

Tear or Cut Away the Excess Wrapper on the Inside of the Boards

Test your wrapper with the boards attached. The fore edge will be oversized. If you are happy with everything, tear or cut away the excess unadhered wrapper from the boards. Careful tearing away of unadhered wrapper can give a soft transition line, but be careful not to have large areas of delaminated paper wrapper weakening your board-to-wrapper attachment. Cutting excess wrapper paper and sanding works too. The idea is a nice transition from wrapper to board.



Trim The Fore Edges of the Two Boards

1. Make sure your case is placed on your text block the way you want it. Use your dividers or other tool to mark the boards for the proper fore edge square to match your head and tail squares.

2. Cut each board along that fore edge line.

3. Check the fit of the case, making sure the head and tail orientation is as you want it. If you are happy, keep going. If not, trim the fore edge if you can, or start over.

4. Sand the edges of the head, tail and fore edges of the case boards as desired.



Cover the Case

1. Since you have worked so hard to create a lovely groove, be sure to cover your case in such a way that the covering material is well adhered to the spine edge of the boards and along the joint area, with no gaping of any kind. This takes some doing. Your wrapper/boards combo is not "flat" so you need to work from the spine, then across the joint, then up the edges of the boards to get a crisp groove.

2. Consider creating a "pressing strip" that fits between the boards and over the spine so when you put the case in the press, the covering material receives pressure over the spine as well. I usually give the case a long nip with that "pressing strip" in place, then remove the strip and press the book for longer in the press.



3. I was trained to not worry about uneven turn-in with this kind of case, since I would be trimming them out on the inside of the boards at a bevel.

Case In as You Normally Would After Trimming the First and Last Leaf, but be Sure the Head-To-Tail Orientation is What You Wanted Before Casing In.

I often place the case with text block inside of it on a pressboard then throw back the case board, adhere any layers from the spine onto the endpaper, glue up the endpaper, and then close the board. But there are other ways.









Conclusion

I enjoy making cases like this, and I appreciate a very crisp groove. In particular though, I like how this can be adapted to fit a variety of wonky spine shapes in book conservation. There are many variations on this theme. If you really want to break my brain ask me about a "built-in-groove split board" structure, with no hollow tube.

THREE APPROACHES TO A COMMON CASE BINDING



Assembled cradle with book

MAGNETIC CHARM: Constructing a Three Piece Collapsible Book Cradle

CAITLIN JOCHYM

THIS ARTICLE WILL OUTLINE THE CONSTRUCTION of a magnetic, collapsible, and adjustable book cradle. The process will be demonstrated step-by-step using photos and descriptions and includes a diagram to provide a visual reference for measurements and placement. I designed this adjustable cradle while working in the Cornell University Conservation Lab after I saw posted in the Preservation Lab Blog a similarly constructed support designed by Elizabeth Rideout that used a velcro system. I found many inspirational adjustable book cradle and support ideas and designs in my subsequent investigation of the subject. Notably, those of Jeff Peachey, Roger Williams, Mindell Dubansky, Nora Lockshin, and others. Nora's retrofit box cradle uses the same system of steel channels and embedded magnet

Caitlin Jochym is a book conservator and artist based in Endicott, NY. She holds degrees from Albion College and the University of Iowa Center for the Book. For the past 15 years, Caitlin has worked in the field of conservation at Cornell University, the University of Iowa, and the National Archives. In 2013, she established her private practice, The Black Finch Bindery, serving museums, historical societies, antiauarian book collectors, and members of the community. Caitlin is a long-standing member of the Guild of Book Workers and holds Professional Associate Membership status with The American Institute for Conservation.

-CAITIN JOCHYM

The purpose of a collapsible and adjustable support is to provide something that will work with many different items as well as being easy to store and transport.

Rare books used for research and instruction are often fragile and both boards need to be supported. Though many of us are experienced in handling fragile books, some handlers might not be. Having a simply constructed and easily adjustable support that is intuitive to set up is ideal for this purpose. This collapsible cradle folds flat, can be easily carried, and takes up little space on the shelf when not in use.

The use of magnets is advantageous in several ways. The strength of the magnetic attachment of the wedges to the base eliminates the need for stops or fastenings to hold them in place, which is valuable in presentation when you want to draw little attention to the support. This cradle is relatively simple to construct and the materials are easy to procure.

It consists of an outer case constructed of two boards and a spine, which opens to create the base, and two collapsible wedges. The case is covered in cloth with two steel channels on the inside of each board. Two similarly constructed wedges have strong magnets embedded in flanges that correspond to the location of the steel channels. In this article, meant to be a practical guide, I will outline the steps I used to construct the supports.

MATERIALS:

For the case:

- PVA
- 2 pieces of binders board 12" x 12"
- 1 spine piece of binders board 12" x 1"
- 4 steel strips 12" (2 for each board of the case)
- 1 piece of 20 pt. card cut to fill space between steel strips
- 1 piece of 20 pt. card to line the other side of the board
- 1 piece of book cloth to cover the outside of the case
- 1 piece of book cloth to cover the inside of the case edge to edge

For each wedge:

- PVA
- 2 pieces of binders board 11 7/8" x 1"
- 1 piece of binders board 11 7/8" x 61/2"
- 1 piece of binders board 11 7/8" x 3¹/2"
- 4 neodymium magnets (1" x ³/₄" x ¹/₁₆")
- 20 pt. card to reinforce flange pieces and fill between magnets
- Book cloth to cover upper side of wedge
- Book cloth of a contrasting color to cover underside of wedge (to help orient the position of the wedge when it is being assembled for use)

STEP 1:

Prepare the case boards:

I will describe the process of preparing one board, however it is much easier to prepare both boards simultaneously.

Cut the two boards and the spine. Because the boards are square, it's very important to mark the grain direction to avoid confusion. The steel strips run horizontally to form the base that the magnetic flanges will stick to. Their placement is arbitrary as long as it corresponds with the placement of the magnets. Place the steel strips 1½" from head and tail of the boards.



Marked boards.

Before placing the steel strips, rough cut three pieces of 20 pt. card slightly larger than the infill areas. The grain of the card should run parallel to the grain of the boards. Also cut a piece of 20pt. card to line the opposite side of the board. In my early prototypes I experienced warping of the boards and this seems to have solved that problem. The height of the center piece of card should fit exactly between the marks

THREE PIECE COLLAPSIBLE BOOK CRADLE

made for the steel strips and slightly longer than the width to be cut and sanded later. Set these aside. For the narrow infill areas at head and tail, cut the card stock pieces so as to leave roughly ¹/₄" overhang all around, this excess will be cut and sanded later.



All components laid out.

The steel strips are then adhered with PVA. I have found it helpful to hold them in place for a few seconds to let the PVA set enough to prevent slipping. Place between waxed paper and boards and nip in the press.



Adhered strips.



Sanding edges.

When the boards come out of the press, use PVA to adhere the infills of 20 pt. card, and nip or place under a weighted board. When these are dry, cut the excess with a knife and sand the edges smooth.



Completely prepared boards.

CAITLIN JOCHYM

STEP 2:

Cover with cloth:

This process is the same as building a case for a book. Cut cloth allowing for a 1" turn in on all sides. The joint should be two board thicknesses. Be sure to adhere the bare side of the boards, the steel strips should be face up when positioning the boards on the cloth. Cover and then place under a weighted board to dry.



Laid out on cloth.

Measure a piece of the same cloth slightly short of the height of the covered boards and about ½" longer than the width of the assembled case. This piece of cloth can be measured and cut exactly, but I find it easier to trim the edge after it has been adhered. Glue out the cloth leaving about ¾" dry at the untrimmed edge. Cover inside of case by placing cloth flush with the edges and proceed to put it down and working it into the joints. It should be left to dry under weight. Once it is dry, mark the unglued edge to trim flush with the edge of the case and use a small brush to put down the trimmed edge with PVA.



Case with infill cloth untrimmed.



Finished case.

STEP 3:

Prepare the wedge boards:

Each wedge consists of four pieces: a vertical leg, a hypotenuse, and two flanges, one on each side, that fold under to attach to the steel in the case/base. The two flanges will house the embedded magnets.



Wedge pieces laid out.

Lay out the flange pieces of the wedge. Line one side of the flange pieces with 20 pt. card. On the opposite side, mark the position of the magnets. The position of the magnets should match the position of the steel strips on the base, approximately 1½" from the head and tail.

Trace the shape of the magnets and cut away layers of board to seat the magnets. Fill the area between the magnets with 20 pt. card to make them flush. Adhere them with PVA. Flood the surrounding area with PVA to fill any spaces between the magnet edges and board.

THREE PIECE COLLAPSIBLE BOOK CRADLE



Marking for magnets.



Flanges with magnets embedded.

Cut a piece of cloth to allow for 1" turn ins and allowing for three joints of 4 board thicknesses. The exposed magnets should be FACE DOWN when positioning the wedge pieces on the cloth. Cover inside of wedge in the same manner as the case, edge to edge with a contrasting color of cloth to distinguish the underside of the wedge when assembling.



Wedge, flat with contrasting cloth.

There are precautions that need to be taken when working with rare earth magnets. They are very strong and can easily pinch fingers or fly across the bench and shatter if you aren't working in space cleared of metal tools and other magnets. I tend to stick them to the nipping press on my bench so they are secured and visible. I store them separately from other tools and supplies. K&J Magnetics has a safe handling video which is worth taking a look at if you are going to work with these magnets. I also suggest reading Gwen Spicer's wonderful book, "Magnetic Mounting Systems for Museums & Cultural institutions."

Overall, I think this cradle is a good alternative to bulky systems, offering both portability and compact storage. In addition, it is attractive and easy to set up and dismantle. Magnets are a versatile tool and I look forward to seeing what else can be done with them. Further reading on the use of rare earth magnets in conservation can be found at the AIC Wiki which has a comprehensive list of sources on the subject.

CAITLIN JOCHYM

MATERIAL SOURCES

Board: https://www.talasonline.com/Davey-Binders-Board?quantity=1&thickness=26 .098"

Card stock: Perma/Dur heavy duty folder stock - University Products

Cloth: Canapetta book cloth -Talas

Magnets: KJ Magnetics https://www.kjmagnetics.com/ search-pn.asp?pg=1&stext=BXoC1

Metal Strips: K&S Precision Metals https:// www.amazon.com/gp/product/BoooLNW4CS/ ref=ppx_yo_dt_b_search_asin_title?ie=UTF8&psc=1

PVA: Talas Jade 403

ACKNOWLEDGEMENTS AND FURTHER READING

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THREE PIECE COLLAPSIBLE BOOK CRADLE



lmage 1.

THE EMPEROR HAS NEW CLOTHES: Conserving an imperial Ethiopian manuscript

GARRETT SUMNER

IN EARLY 2021, the Stephen O. Murray and Keelung Hong Special Collections at the Michigan State University Libraries (MSUL) selected XX MSS oversize 306, or the *Fetha nagast*¹, (henceforth MSS 306) for a crowdfunded conservation campaign (image 1). Although the manuscript and binding were in fairly great condition with only minor physical damage, it was the manuscript's most visible feature—a colorful silk wrapper—that had suffered such extensive physical damage as to require conservation. It is a well-tread trope that manuscripts do not just contain history, but are themselves the material carriers of history, with the passage of time resulting in the accumulation of new markers of history, meaning, and authenticity, reflecting the long lives of manuscripts. The conservation and re-housing of MSS 306 afforded an opportunity to further investigate this large manuscript, silk wrapper, and their colorful histories.

-GARRETT SUMNER

Garrett Sumner is currently the Conservation Librarian at Michigan State University Libraries. He received his MA Conservation Studies from West Dean College (UK) and his MS Library and Information Science from Pratt Institute. He prefers Ethiopian jazz over reggae music.

ETHIOPIA AND THE MANUSCRIPT TRADITION

ETHIOPIA IS LOCATED IN THE HORN OF AFRICA, with historic borders extending to the Red Sea, and great diversity in terms of environment, topography, culture, and religion. Tradition states that Christianity first arrived in Ethiopia, then the Kingdom of Axum, in 43 C.E. in the earliest years of the church. Officially, Christianity had become the established religion during the fourth century when a Syrian-Greek missionary named Frumentius was appointed the first bishop of Ethiopia by the Patriarch of Alexandria, thus establishing a connection with the Coptic Church of Egypt and, more broadly, the various orthodox churches of the Eastern Mediterranean. This relationship would persist until 1949 when the Ethiopian church was granted autocephaly, or self-governance, by the Coptic Church.

In 1270 C.E. Yekuno Amlak established the Solomonic Dynasty, which would rule until the 1974 coup d'etat against Emperor Haile Selassie I. Important to the long life of this dynasty-the longest in world history-was the Fetha nagast, or "The Law of the Kings." The Fetha nagast was first composed in Arabic during the thirteenth century by the Coptic Egyptian writer Ibn al- 'Assal as a canon for civil and ecclesiastical administration. Tradition states that the Fetha nagast was introduced to Ethiopia sometime in the fifteenth century, when Emperor Zar'a Ya'qob (1434-1468), frustrated that justice in his empire was still administered according to the Old Testament despite living during the New Testament, sent a scribe to Alexandria to copy for him a book of law he had heard of that had been promulgated by Emperor Constantine of the Eastern Roman/Byzantine Empire. Thereafter, the Fetha nagast circulated in two forms: one in the traditional liturgical language of Geez and the other in Geez alongside the vernacular Amharic translation with commentary. The first printed edition of the Fetha nagast appeared in 1897 in Rome exclusively in Geez, and the first edition of the Geez/ Amharic translation was printed in 1935 in Addis Ababa under the patronage of Haile Selassie; however, with the Italian invasion of Ethiopia in 1935 all copies of this edition-printed but still unbound-were burned and destroyed, along with the printing press.²

The long-standing historic relationship with and influence from Eastern Orthodox communities manifests itself in the characteristics of the Ethiopian bookbinding tradition. In sync with the other binding traditions of the Eastern Mediterranean (save the Armenian tradition), these bindings feature unsupported, link-stitch sewing; flat spines; wooden boards that are anchored to the textblock by a sewn board attachment and cut flush with the textblock; primary and secondary endbands sewn proud of the head and tail; and leather straps.

Ethiopian bindings are sewn at paired stations using two needles for each pair of sewing stations. When viewed from inside the textblock, this results in a double thickness of thread inside the gatherings between the paired stations (image 2). The wood used to make the boards comes from two evergreen trees: wanza (Cordia africana) or wayra (Olea africana), each of which are native to East Africa. Ethiopian bindings typically feature a red-brown goat or sheep leather, although they are often left without any covering material. Tooling, when present, is blind and typically features simple geometric patterns surrounding a latticework-like cross. Unique to Ethiopian bookbinding is its style of endband, which features a slit braid made from leather which is positioned at the head or tail and then connected to the textblock and spine by thread sewn through the braid, the gutter of the quire, and the covering leather (image 3).³ Despite being composed of a parchment textblock and wooden boards, Ethiopian bindings rarely feature clasps or ties to keep the book compressed and closed.⁴



Image 2: View of double-thread sewing from inside quire of MSS 306.



Image 3: MSS 306, endband.

Of particular interest to this article is the frequent presence of textiles in Ethiopian bookbinding, the use of which was first recorded and published in 1859.⁵ Textiles were incorporated into the binding in one of two ways: the first as a pastedown inside the turn-ins of the leather on the inner face of the board and the second as an unadhered external wrapper. Textile pastedowns seem to be more common than wrappers, the practice being noted in numerous historical sources; however, this assertion should be treated with caution, as the very nature of a wrapper means that it can be added or removed from a binding at any point, whereas a pastedown is more-or-less permanently affixed to the binding. Derillo and Gervers.⁶ in researching the Maqdala Collection of Ethiopian manuscripts at the British Library, found that in the 154 volumes they examined, there are 158 distinct textiles. Of these, 49% are from India, 37% are from Europe, and the remaining 13% from the overly-broad category of the Middle and Far East. Of these 158 textiles, 70% are either silk or a silk/cotton blend.

MSS 306

Provenance

MSS 306 WAS COMMISSIONED and completed in 1919 for Ras ("prince," roughly) Tafari Makonnen—who would later assume the regnal name of Haile Selassie I, meaning "Power of the Trinity," upon his coronation as Negusa negast, or "King of Kings" in 1930 (image 4).



Image 4: Seal of Ras Tafari-M on f. 32v.

According to a regulation issued by the wonderfully named Ministry of the Pen, which was to determine the amount of time needed to copy a manuscript, the *Fetha nagast* was to take exactly eight months and fifteen days to complete.⁷ On 23 September 1936, four months after the invading Italian army entered the capital of Addis Ababa and forced Emperor Selassie

GARRETT SUMNER

into exile, the manuscript was sold to the Church of Yakka Mika'el in the eastern part of the city (image 5). The circumstances around this transaction are unclear, although it has been assumed the Church acquired it for safe keeping, as this church had a long history of safeguarding valuable religious and cultural items during times of turmoil.⁸ Later in 1960, the manuscript was acquired by an unknown person, under unknown circumstances. In 1970, this unknown person sold the manuscript to Charles Ahlgren, a US diplomat stationed in Ethiopia at the time. Finally in 2005, Alhgren's family donated the manuscript to the MSU Libraries, where it has been housed in Special Collections ever since.



Image 5: Seal of Church of Yakka Mika'el on f. 34r.

Characteristics

MSS 306 MEASURES 379 mm x 305 mm x 113 mm and is composed of 354 parchment folia written in three columns in black and red ink. The parchment sheets are a combination of calf and goat skin, and the collation follows Gregory's Rule, with few exceptions. The manuscript is sewn on two pairs of sewing stations with a thick vegetal thread, with thick wooden boards. It is covered in red goatskin with turn-ins that cover the entirety of the inner face of the boards, with no textile pastedown. The blind tooling is elaborate and exceptionally tidy (compared to many other Ethiopian bindings) and even extends to the inner face of the boards, although in a much-simplified pattern (images 6-7). And of course, there is the silk wrapper which was likely added at a later date (more details below). Bibliographically, the most unique feature of MSS 306 is that it is possibly the largest single-volume copy of the *Fetha nagast* on parchment.⁹



Image 6: View of blind tooling on outer left board (image enhanced for clarity).



Image 7: View of blind tooling on inner right board.

Upon arrival to the Wallace Conservation Lab, damage to the manuscript and its binding were fairly minor. The thread securing the interbraided leather endbands to the spine had been severed at both the head and tail, and the covering leather was torn about one centimeter at the joint of the left board. The spine had gone concave—implying that the manuscript had been well-used—but otherwise the binding was strong and robust. The endbands were secured by tying off new 35/3 Barbour's linen thread at the severed ends of the original thread and following the original pattern and holes. The torn joint was repaired with acrylic-toned Japanese tissue and wheat starch paste.

The most significant damage was to the textile wrapper, which was in such a fragile state that simply removing the manuscript from its custom enclosure (not to mention actually opening and using the manuscript) was prohibitively risky. The most extensive damage to the silk textile and its muslin lining was along the spine, particularly the joints, as well as the foredge. So deteriorated and messy was the torn textile that some Special Collections staff began referring to it as "the bird's nest" (images 8-9). While searching for a textile conservator to undertake the task of stabilizing and repairing the silk textile, first it had to be decided whether, post-treatment, the textile should remain separated from the manuscript or if it should be reunited. While keeping the manuscript and textile separate would allow for safer use and continued visibility of the blind tooling, it was ultimately decided that the textile should be reunited with the manuscript, as that was the state in which it arrived at MSUL, and that separating the accumulated material layers of the object's history could constitute a greater risk of immaterial damage.



Image 8.



Image 9.

THE SILK ROAD LESS TRAVELED

AFTER THE WRAPPER HAD BEEN SENT to the Textile Conservation Workshop (TCW) in New York, questions regarding the provenance of the silk textile emerged. It is safe to say that the textile was certainly a later addition to the manuscript, since it simply makes no sense to have such fine leather and blind tooling be immediately covered by a textile wrapper. Doubts about the Ethiopian origin of the wrapper arose when I began to examine the MSU Museum's extensive collection of East African textiles.¹⁰ The silk wrapper bore no resemblance to the Ethiopian textiles in the museum, which were more typically a plain weave with block printing. Viewing hundreds of digitized



Image 10: Syrian textiles, purchased by the author in Jerusalem in 2007.
GARRETT SUMNER

Ethiopian bookbindings from the British Library, Princeton University Library, and Hill Manuscript Museum and Library likewise yielded no clues as to the origin of MSS 306's textile.

Eventually and through pure serendipity, I was able to determine that the silk wrapper is a Syrian textile that was likely acquired in Jerusalem. In a trip to the region in 2007, I acquired some beautiful striped textiles which were later fashioned into pillowcases (image 10). After sleeping with said pillows for over a decade and working on MSS 306 for close to a year, I very belatedly realized that these textiles were nearly identical in pattern, style, and material.

For centuries, Syria has been a center of textile production, especially silk, and is the origin of damask patterns. These fabrics have long been prized among Palestinian women, particularly those from Jerusalem and Bethlehem, for use in wedding dresses and other ceremonial costumes.¹¹ These silk (and silk/cotton blend) textiles are recognizable by their thin, colorful, repetitious stripes that usually contain smaller geometric patterns within each stripe. Since the 1930s, one Syrian family, the Abu Khalafs, has operated a small shop selling these imported Syrian textiles. This shop is located in the Christian Quarter of the Old City of Jerusalem, just around the corner from the Church of the Holy Sepulchre complex, which contains Deir es-Sultan, a monastery home to Ethiopian monks in Jerusalem since the early nineteenth century (image 11).



Image 11: View of Deir es-Sultan and Holy Sepulchre Complex. Ron Almog, CC BY 2.0 <https://creativecommons. org/licenses/by/2.0>, via Wikimedia Commons.

There has been a consistent Ethiopian presence in Jerusalem since the twelfth century, and this community was particularly prominent in the late nineteenth and early twentieth centuries, when the imperial family sponsored the purchase of land in the city for the construction of a church and housing for the growing Ethiopian community there.¹² Since the Middle Ages, pilgrimages from Ethiopia to Jerusalem, by way of Egypt, were very popular and as such, pilgrimage routes with dedicated hostels for Ethiopian pilgrims had been well established.¹³ Exemplifying the strong connection between Ethiopia and Jerusalem is the fact that the library of the Ethiopian Patriarchate of Jerusalem has one of the largest collections of Ethiopian manuscripts in the world outside of Ethiopia, at over seven hundred volumes.¹⁴

Haile Selassie himself twice visited Jerusalem-a long tradition for the imperial family-first in 1924, and later in 1936 after his exile due to the Italian invasion of Ethiopia. Upon his arrival in 1924, he first visited the Church of the Holy Sepulchre complex, followed by visits to the other holy sites in Jerusalem and nearby Bethlehem. Like his predecessors, his visit to Jerusalem was both a pilgrimage and a diplomatic mission. Since the nineteenth century, Jerusalem had been a site of European intrigue in the wake of the French Revolution and its hostility to the Catholic church. But rather than simply being a site of pilgrimage for the House of Solomon, Jerusalem was a place where the imperial family could interface with and exert themselves against the European powers of the day as imperial ambitions in East Africa grew.¹⁵

Selassie's second visit to the city was less cheerful, yet the local reception he received upon arrival demonstrates the positive light in which the Palestinian community viewed him and the Ethiopian community. Fleeing the Italians now occupying Addis Ababa, Selassie went into exile in the United Kingdom, stopping first in Palestine. He arrived in Haifa on May 8, 1936, shortly after the beginning of the Great Palestinian Revolt (1936-39) against the colonial British Mandate. This uprising witnessed what is considered the largest general strike in history, when Palestinian workers struck against British occupation; however, Selassie was held in such high regard by the local community that as his train arrived in Jerusalem, he was greeted by a cheering crowd of an estimated five thousand people (image 12). The Arab Motor Strike Committee even agreed to excuse three drivers from the strike in order to transport him and his family to the King David Hotel, with the head of the committee personally guaranteeing their safety, and even opening their car doors for them.¹⁶ Selassie and his family stayed in Jerusalem for two weeks before continuing their exile in the United Kingdom.



Image 12: Haile Selassie I (center, in white) arriving in Jerusalem, 1936. Library of Congress, Prints & Photographs Division, LC-DIG-matpc-13591.

CONCLUSION

THERE ARE YET MULTIPLE EXPLANATIONS of how a Syrian textile, likely purchased in Jerusalem, ended up on a manuscript that, as far as is known, never left Ethiopia until the 1970s. It is possible that the textile was gifted to Haile Selassie during his first visit to Jerusalem in 1924 and that it was later fashioned into the wrapper on the manuscript. It is also possible that the textile was brought back to Ethiopia by a pilgrim, perhaps belonging to the Church of Yakka Mika'el (the manuscript's second owner), at another date. Regardless of the exact route the silk textile took to arrive on the manuscript, the entirety of MSS 306 is nonetheless a material testament to the engagement of Ethiopia with the city of Jerusalem and demonstrates the often messy and composite nature of the Ethiopian manuscript tradition.17

All photos, unless otherwise noted, by the author, courtesy of the Stephen O. Murray & Keelung Hong Special Collections, Michigan State University Libraries, East Lansing, MI.

NOTES

1. There is no single accepted transliteration of the Ethiopic script into English. For this article I have used the transliteration found in the MSUL catalog, which follows Library of Congress standards.

2. Peter Strauss, ed., The Fetha Nagast: The Law of the Kings (Addis Ababa: Faculty of Law, Haile Sellassie I University, 1968), xv-xix.

3. See Greenfield 17-22; Szirmai 49.

4. Dennis Nosnitsin, "Lesser Known Features of the Ethiopian Codex" in Movements in Ethiopia, Ethiopia in Movement: Proceedings of the 18th International Conference of Ethiopian Studies, eds. Éloi Ficquet, Ahmed Hassen and Thomas Osmond (Los Angeles: Tsehai Publishers, 2016): 87.

5. Berthe Van Regemorther, "Ethiopian Bookbindings," The Library 17, no. 1 (March 1962): 87.

6. Eyob Derillo and Michael Gervers, "Textiles in Ethiopian Manuscripts," May 4-5, 2021, Textiles in Manuscripts Conference, University of Toronto, https://booksilkroadstextiles.artsci.utoronto. ca/?page_id=743.

7. Sergew Hable Selassie, Bookmaking in Ethiopia (publisher unidentified, 1981), 33.

8. Getahun Mesfin Haile, "Mss 306 or Ras Täfärī's Fetha Nägäst: Some Notes," Journal of Ethiopian Studies 43 (2010): 83.

9. Haile, "Mss 306 or Ras Täfärī's Fetha Nägäst: Some Notes," 77.

10. Digitized and available at https://museum.msu. edu/.

11. Stephanie Saldana, "The Surviving Threads of Syria's Textile Industry," February 1, 2016, https://web.archive.org/web/20220811091650/ http://www.mosaicstories.org/2016/02/01/ the-surviving-threads-of-syrias-textile-industry/. 12. Vicken V. Kalbian, "Haile Selassie in Jerusalem: Sanctuary for the Lion of Judah in the Holy City," Jerusalem Quarterly 74 (2018): 72.

13. Otto F. A. Meinardus, "Ecclesiastica Aethiopica in Aegypto," Journal of Ethiopian Studies 3, no. 1 (1965):23.

14. Ephraim Isaac, "Shelf List Of Ethiopian Manuscripts In The Monasteries Of The Ethiopian Patriarchate Of Jerusalem," Rassegna di Studi Etiopici 30 (1984-86): 57.

15. Stephane Ancel, Magdalena Krzyżanowska and Vincent Lemire, "The Ethiopians in a Global City" in The Monk on the Roof: The Story of an Ethiopian Manuscript Found in Jerusalem (1904), trans. Kate Matthams Spencer (Leiden: Brill, 2021): 190-194.

16. Kalbian, "Haile Selassie in Jerusalem," 77-79.

17. Nosnitsin, "Lesser Known Features of the Ethiopian Codex," 88.

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CONSERVING AM IMPERIAL ETHIOPIAN MANUSCRIPT



Expositions of the Dominican Gospels, adapted to dialectical method and rhetoric, 1544. 164 x 110 x 46 mm.

IN PURSUIT OF HISTORY: An undergraduate's experience with bookbinding

LOUISA EASTLEY

THOUGH BRIGHAM YOUNG UNIVERSITY (BYU) does not have a formal Book History program, I found opportunities to study bookbinding and bibliography independently, especially as a student conservation technician in the university library's conservation lab. After studying medieval books from the library's Special Collections, I created an interactive exhibit to give other students an opportunity to see and appreciate these artifacts. This included touchable models I created using materials from the period, a video demonstrating binding methods, and extant objects from the Middle Ages. By focusing on narratives shown by the books, visitors were able to better understand the significance of these collection items. Louisa Eastley is a recent graduate from Brigham Young University in English and History. The emphasis of her study has been on book history and medieval literature and history. She has been an employee in the BYU Library's conservation and book repair labs since 2019. She will be studying at the University of lowa Center for the Book in Fall 2023. Alongside bookbinding, she enjoys historical dressmaking, reading, and rock climbing.

-LOUISA EASTLEY

STUDYING BOOK HISTORY Independently

FOR SEVERAL MONTHS IN 2018, I had the opportunity to work with refugees from Myanmar in Indiana, USA, teaching English and helping people learn to navigate American society. As I sat on one family's floor, they diligently paged through a worn paperback copy of a Chin/English side-by-side dictionary, one passed down to them from their grandfather. But it was falling apart. Though I had taken only a basic bookbinding class, I offered to do my best to repair this book. Using what I see now as rather childish conservation practices, I reglued the spine, made a cover from laminated cereal boxes and a small cotton remnant, and used cheap scrapbook paper as endsheets. The finished project was certainly nothing more than functional, but it extended the life of the book and enabled this family to continue using their heirloom to learn.

This experience, among others, helped me understand the importance of conservation. Books, especially, have value both as relics of another age and as vehicles for helping people to understand the experiences and ideologies of others. I chose to study literature as an undergraduate because I believe in the power of books to create understanding and change, but I chose conservation as a method to preserve the history, heritage, and potential of a work's physical form.

As a student at Brigham Young University (BYU), the opportunities to study book history, bookbinding, and conservation are present, but scattered. Without any formal program available to me, I've cobbled together classes from linguistics, chemistry, history, literature, and art to teach me about this esoteric but fascinating field. Of fundamental importance to my learning process was my job as a student conservation technician at the BYU library. BYU, unlike most universities, has a conservation lab that employs three full-time conservators and up to ten student conservation technicians at any given time. I've been working in the lab since April of 2019, and I have been bench trained in diverse conservation treatments and practices. Students work on both circulating and Special Collections materials, learning on the job how to appreciate objects and preserve them for future researchers. In the end, the artifacts themselves taught me more than any professor.

I originally became interested in medieval bindings when I worked on a semester-long internship with conservator Christina Thomas documenting the historical progression of bookbinding. The project's purpose was to create a wholistic timeline of methods and materials used by bookbinders throughout history for use by students in the conservation lab and broadly within the university. However, as I researched, I was particularly drawn to the Gothic style bindings in the collection. (BYU has several hundred books from the Late Middle Ages, many in their original bindings.) Though I continued my research on the progression generally, creating descriptions of sewing types, covering materials, and decoration preferences from the early Coptic codices to the pulp paperbacks of the 1970's, I began spending the majority of my time studying books from roughly 1250-1550 CE. I love their enduring strength, the elegant minimalism of the bindings, and the resourcefulness of the binders.

After trying (and largely failing) to explain to friends and family what made the experience of handling these objects so impactful to me, I realized that having personal proximity to an item is often a fundamental part of understanding their significance and structural beauty. Additionally, I discovered that the collection was largely unused due to lack of advertising, a multi-step process for access, and a cultural shift away from studying physical artifacts.

CREATING AN EXHIBIT

MY ACCESS TO BOOKS from this period made me want to extend that privilege to other students. I decided that I wanted to make these unique BYU resources more readily available to viewers in the form of an exhibit. In coordination with the curator of the Rare Book Collections, library security, and my supervisors in the conservation lab, I had the opportunity to explore the Special Collection vaults, choosing books that demonstrated significant aspects of bookbinding methods in the Middle Ages, many of which had lain hidden away since their acquisition by the BYU Library. I closely examined hundreds of books, comparing their attributes to those discussed in scholarship about various aspects of bookbinding. Oftentimes, I had to use the aesthetics of different periods to determine whether the book's binding was original or if it had been rebound by a later owner.

For example, while the catalogue may list a particular book as original to 1465, only the printed text block would be extant and the cover would be newly covered in blatant Victorian gold embossing. I wanted the exhibit to not just show medieval books or materials, but to focus specifically on binding types and methods from that era.

EXPLORING MEDIEVAL BOOKBINDINGS

THE PROCESS WAS SOMEWHAT CYCLICAL. Though I had researched bookbinding in this period in scholarly work, I was often trying to visualize the writer's descriptions of books without accompanying images. Thus, I was often relying on the books in my hands to teach me more about what was standard, making connections and assumptions based on the variety of books in the archive. I would pick up a book, decide whether to continue studying it based on my research, then return to the conservation lab for more theoretical research that would inform the object itself. Over time, I was able to draw my own conclusions based on my hands-on experiences.

The Gothic period of bookbinding in the fifteenth century followed the beginning of widespread printing and increased literacy following the invention of the printing press. This led to many more books being bound, and thus many more surviving in archives and Special Collections today. J.A. Szirmai, in his Archeology of Medieval Bookbinding, claims that while this expansion had the potential to improve the binder's skills, as they had more opportunity to practice and learn, his overall observation lead him to believe that "faced with the phenomenal output of ... presses, [binders] had started to compromise on the quality of their materials but even more on that of their work" (173). Indeed, the examples from this period in the BYU Special Collections demonstrated a huge variety of binding styles and binding qualities.

For example, this 1544 copy of *Expositions of the Dominican Gospels* is one of the very simplest and cheapest bindings possible, with the vellum simply creased in a single layer around the text block. It may have been intended to be temporary until a nicer case could be afforded, but it is also likely to have been kept simple and intended for daily use. On the other hand, this *Questions on the Four Sentences* from 1481 demonstrates a tremendous commitment to quality workmanship. It is sewn over paired cords, with each sewing hole reinforced on the inside of the signature with a tiny scrap of parchment. The leather cover is filled with blind tooling, the endbands were made with dyed leather strips braided around a core, the edges of the textblock are dyed yellow, it was at some point (perhaps originally) fitted with a chain to prevent theft, and the title was written on both the head and the tail. Though it doesn't look gaudy, it was obviously created with a great deal of love and attention to detail.





Questions on the Four Sentences, 1481. 248 x 176 x 42 mm.



Questions on the Four Sentences, 1481. 248 x 176 x 42 mm.

MODEL MAKING

AS I DEVELOPED THE EXHIBIT, I hoped to call attention to these notable features of the items in a way that students could understand and connect with. A professor of book history recently asked me what I considered to be the best way to help students be interested in archival materials. The two main ideas I shared with her were to: 1) create a tactile environment with hands-on models and a demonstration video of bookbinding methods and 2) visualize a historical narrative for each object. I tried to use these methods in my exhibit, enabling visitors previously unfamiliar with bookbinding to understand and appreciate the books, the materials, and the variety of those methods in the Gothic period.

Prior to my preparation for this exhibit, I had already made a couple of replica bindings as class projects: a limp vellum binding for a History of the Book class and a standard gothic model for a Late Middle Ages History class. The exhibit eventually included models for parchment over boards bindings, tacketed bindings, herringbone and knot-tack sewing, alum-tawed Gothic covering, sewing over single cords, and sewing over parchment tapes, as well as some samples of parchment, different types of leather, and cording. These were models, not full bindings, because I wanted visitors to be able to see the inner workings of the books and compare them to the Special Collections items.



Rationale of Divine Duties, 1493. 298 x 220 x 57 mm.

This book, the Rationale of Divine Duties from 1493 represents many of the standard elements of a German Gothic binding. Indeed, it is so standard that there are two more nearly identical bindings in the BYU collection alone. To make this model, I used materials as similar as possible to the original, including handmade paper, goat leather (although observing the original under a microscope revealed it was calf), undyed linen thread, alum-tawed sewing supports, and brass sheets for clasp-making. Additionally, I used period-appropriate tools, including a sewing frame, hand chisels and planers, and a paring knife. I followed the original method of endband construction and decorated the leather with the same pattern of blind tooling. Overall, I found that this breakaway model helped visitors to the exhibit understand the norms of the time period well.

As I made each binding, I filmed segments of each step. I later compiled these clips into a comprehensive summary of the binding process and materials



Gothic binding breakaway model.

condensed into about eight and a half minutes. When I visited, I noticed that many visitors would stand and watch the entirety of the video, sometimes even staying for several loops. I consistently heard that it was their favorite part of the exhibit and really helped them understand how the bindings were put together. Even seeing the finished product or having it in their hands wasn't as helpful for visualization purposes as the video, but all the elements together removed much of the confusion that seeing the collection items independently might have.

NARRATIVE FROM INCONSISTENCIES

PERHAPS IT IS MY LITERATURE BACKGROUND talking, but I believe that the best way to instill these artifacts with meaning is to give them a story. Ideally, that story would be entirely based in fact, but even a story based on probable 'what if's' can help a person to understand the potential importance of objects. When writing the captions for the exhibit items, I highlighted different design elements with a narrative focus. I would highlight the monastery the book was bound in, the trade routes through which a binder would get leather, or the different styles that were preferred in different areas.

This narrative approach was easiest when the books were unusual in some way (when they differed from the regional or time period's standard), or when something specific had happened to them. This



The Book of Lorenzo di Bartolo di Piero de Bardi, 1433. 289 x 235 x 54 mm.



A Moral Mirror, 1476. 495 x 349 x 146 mm.

LOUISA EASTLEY

tacketed limp vellum ledger was held shut during daily use with a metal buckle. This utilitarian detail makes it fairly easy to see a fifteenth century accountant carrying it under his arm as he walked the streets of Venice collecting numbers from various businesses. This elaborate lectern book certainly tells a different story, with its covers so massive that they required multiple widths of oak boards glued together. As a binder myself, I can only imagine how tedious it might have been to flip the signatures open and shut to access the stitching holes with nearly two feet of flopping material.





I also tried to tell the story of the book itself through the centuries. Though a book may have been bound in a Gothic style originally, later owners would often adapt the bindings to suit the adapted beauty standards. This book, for example, was bound in beige colored leather

Light of the Soul, 1479. 295 x 214 x 80 mm.

with a braided leather endband, but a later (probably Early Modern or Victorian) owner had the spine sloppily painted to match the aesthetics of his library. I was surprised to find that four of the seventeen books included in the exhibit have this painted spine treatment.



Works and Treatises, 1497. 278 x 205 x 52 mm.

This half leather over boards binding is missing the last several signatures, likely due to bug damage. It wasn't rebound, the cover was just slumped over the empty section. Imagine the owner's frustration as they were forced to remove dozens of printed, but worm-eaten pages!

CONCLUSION

OVERALL, I FOUND THIS TO BE A FUN and informative experience all around. While I admit that bookbinding and book history are obscure topics, this was an opportunity to create some awareness, understanding, and enthusiasm for the field. I was surprised, but pleased, to see how many people were interested in learning more after seeing the exhibit. At the conclusion of the project, I feel, as Emily Dickinson wrote, that "A precious mouldering pleasure 'tis / To meet an Antique Book / In just the Dress his Century wore / A privilege I think ... his presence is Enchantment / You beg him not to go / Old Volumes shake their Vellum Heads / and tantalize just so" (17).

AN UNDERGRADUATE'S EXPERIENCE WITH BOOKBINDING

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The above photograph reproduces a drawer of brass bookbinders' type from Dornemann & Co. in Magdeburg.

THE INDUSTRIAL SAND CASTING OF BRASS TYPES FOR BOOKBINDERS IN GERMANY AROUND 1910

DANIEL JOHN ANDREW REYNOLDS

THIS ARTICLE IS A TRANSLATION, WITH COMMENTS, of an illustrated description of the manufacture of brass typefaces for bookbinders. Dornemann & Co. from Magdeburg, Germany, included the original German-language text at the beginning of a catalog showing specimens of its brass typefaces. While it has no publication date, Dornemann & Co. probably produced that catalog around 1910. Established in 1905, Dornemann & Co. became one of Germany's largest brass-type suppliers. It delivered products to bookbinderies across Europe, North America, and South America. Before founding the company, Fritz Dornemann had spent more than two decades in the brass-type-making industry, including several years as the manager of another Magdeburg-based firm. That company may have been the first in Germany to manufacture brass typefaces. Although Dornemann & Co. replaced the sand-casting method described in this article with another manufacturing tactic during the 1920s, the means described here were likely similar to those used by brass-type manufacturers in other western countries. This article's description of Dornemann & Co.'s early-20th-century methods presents them in English for the first time.

Dr. Dan Reynolds is an American designer working in Germany. He teaches typography at the Hochschule Niederrhein University of Applied Sciences in Krefeld. Reynolds spends the rest of his time researching the history of Germany's typefoundries, particularly their activities between 1871 and 1914. As a student, he first came in contact with typographic history during his coursework at the Rhode Island School of Design. While continuing his studies at Offenbach in Germany, Reynolds began visiting the library at the Klingspor Museum. From 2004 until 2011, he worked at Linotype GmbH—a German successor of the old Mergenthaler Linotype Company in Brooklyn. He received a doctorate in philosophy from the Braunschweig University of Art in 2019. His research has been published by the Cooperativa Anonima Servizi Tipografici, the Fine Press Book Association, Klim Type Foundry, the Max Planck Institute, the Printing Historical Society, Poem Editions, and the Steidl Verlag.

In the late nineteenth and early twentieth centuries, two kinds of brass typefaces were manufactured for the German book-making and letterpress-printing industries¹. Brass "poster types" were one variety.² Those were very robust, allowing them to be printed on more surfaces than paper, such as fabric or cardboard. Yet those poster types were produced at type height, enabling letterpress printers to use them together with foundry types and wood-type fonts when printing on paper. Brass types for bookbinders were the other variety. These were not necessarily type-high. The lettering on book covers and spines had long been embossed into leather or cloth with brass stamps and lead-alloy printing types; however, embossing wears printing types down quickly, especially if the letters are heated beforehand. Brass has a much higher melting point—about 1800° F, compared with 600° F for type metal—and its robustness prevents it from wearing out. While brass types' durability made them attractive for bookbinding, their production was more labor-intensive than foundry types; and although brass typefaces were available in many sizes and styles, there were always more foundry types on the market. That helps explain that while brass-type was a successful bookbinding product, it never fully displaced the use of foundry type in that industry.

Both kinds of brass types were initially manufactured in Germany via sand casting. Brass poster types were probably the younger of the two varieties. Their sand-casting process was developed in Leipzig during the mid-1880s by a punchcutter named Hugo Friebel.³ While I do not know which German firm was the first to produce brass types for bookbinders, the oldest examples I have encountered come from a Magdeburg-based printing house and typefoundry established in 1834. It was manufacturing brass stamps for bookbinders by 1842⁴ and sold brass types by 1868,⁵ though it may have begun manufacturing them a decade or more beforehand. During the 1870s, the company stopped casting foundry typefaces for printers, but it continued manufacturing brass types for bookbinders. The printing department also eventually closed. Edmund Koch acquired this business in 1880, and four years later, a young man named Fritz Dornemann came from the Julius Klinkhardt typefoundry in Leipzig to work for

it. Originally from Nordhausen, about sixty miles to Magdeburg's southwest, Dornemann had been born in 1860.

Fritz Dornemann was Edm. Koch & Co.'s director by the end of the nineteenth century, but he left the firm in 1904.⁶ In 1905, he established his own engraving firm called Dornemann & Co. It quickly became one of Germany's largest brass-type manufacturers, surviving both the First and Second World Wars. Dornemann & Co. continued to operate for more than twenty years under the German Democratic Republic, the communist regime established in the part of Germany occupied by the Soviet Union after World War II. During the 1970s, the business was reorganized as a state-owned company called VEB Prägeschriften und Gravuren. After German reunification, this was purchased by another Magdeburg engraving company, which today operates out of the old Dornemann & Co. factory.

THE SOURCES FOR DORNEMANN & CO.'S TYPEFACES

BRASS-TYPE MANUFACTURERS like Edm. Koch & Co., Dornemann & Co., and Otto Kaestner (another provider mentioned below) likely purchased the master forms for casting their products from Germany's large commercial typefoundries. Otto Kastner-who, as we shall see, cast its brass types from typefoundry-style matrices-and other brass-type manufacturers using sand-casting methods may have acquired their models from the typefounders. Slugs of letterforms separated by a uniform-width space would have been easy for typefoundries to create via the electroplating processes they already used when creating many of their matrices. Piracy has been endemic in every era of type-making history.⁷ Each brass-type manufacturer surely had products in its catalogs that it acquired illegitimately. As there were many companies in Germany's brass-type marketplace, it is easily imaginable that some firms stole more readily than others.

While it would be impossible to reach a judgment on every Dornemann & Co. product's origin today, the company almost certainly acquired many of its typefaces legitimately. For instance, shortly after its founding, it developed a close relationship with the large Berlin-based H. Berthold AG typefoundry. Dornemann & Co. developed a brass poster-type substitute sand cast with steel instead.⁸ Most of the typefaces in Dornemann & Co.'s steel-type specimen are Berthold designs, and an internal H. Berthold AG notebook indicates that Dornemann & Co. was the source of the steel types it sold to customers, too.⁹ Given that Dornemann & Co. and Berthold partnered when it came to other products, it is not difficult to imagine that Berthold provided the model slugs. One Berthold typeface, Accidenz-Grotesk, can be seen in figure 1.

Similarly, I suspect that Dornemann & Co. purchased brass-type rights for the Offenbacher Schwabacher from Gebr. Klingspor and Grasset from its German distributor, Genzsch & Heyse. In 1910, these type designs were likely still under the protection that German design patents provided.¹⁰ In Dornemann & Co.'s ca 1910 catalog, notices reading "sole right of reproduction" appear at the bottom of the pages displaying the Offenbacher Schwabacher, Grasset, and Accidenz-Grotesk typefaces.¹¹

This article explains the sand-casting process that Dornemann & Co. used to manufacture brass types for bookbinders between 1905 and the early 1920s. Since that process was complicated enough to warrant clarification, Dornemann & Co. published an illustrated account around 1910. Titled "Kurze Abhandlung über die Fabrikation von Schriften für die Vergoldepresse," this four-page description appeared in the preface of a 124-page brass-type specimen catalog.¹² I have translated that account into English below. This article reproduces all illustrations from the text, including their original captions. Since those captions were brief, I have added more information to them. My translation begins here:

GENERAL INFORMATION

THE MOST IMPORTANT THING in the manufacture of typefaces for the gilding press are the models, which are laborious and very expensive to produce. Therefore, the models are also the most valuable part of an engraving company's inventory; in our case, for example, they have an acquisition value in the hundreds of thousands.¹³

Large-scale production of gilded lettering is not possible without models, and without one, fast delivery and moderate selling prices with good workmanship are unthinkable. Often, a customer believes that fonts can easily be made, according to any given template, expressly for his order. He is then extremely surprised when he is told that there are no models for the font he requested and that the bespoke production of the typeface is impossible, thanks to the high costs. Other customers believe themselves to be better informed and consider the matter from a different angle. They calculate it like this: "The forms or models are there. All you have to do is make a mold from them, and 'the font will be done." He cannot understand how, according to such simple logic, we do not immediately carry out his order. At the same time, he stubbornly points to the prices in the catalog, which he believes are far too high. The matter is not as simple as it may seem to some; in fact, it is much, much more difficult than most people think. The main work in the production of typefaces is not complete once the models are cast. It has only just begun.

MODELS

THE FONT MODELS ARE LINES on which the letters of an alphabet and the associated characters are positioned according to certain rules and arranged side by side in such a way that there is a gap (space)¹⁴ between the individual letterforms for the saw to cut through. Only the types for ribbon-printing¹⁵ and poster types are different¹⁶. Because of their size, they have enough body to be molded, cast, engraved, and finished as individual sorts.



Above, the text's illustration for Modellzeilen, or model slugs. Each contains several letters. The slugs would be pressed into sand to create the sand-casting matrices, in which new slugs out of brass would be cast. From Dornemann & Co., "Kurze Abhandlung über die Fabrikation von Schriften für die Vergoldepresse," vi. Another Magdeburg-based company, Böhme & Co., produced the illustration. Source: Staatsbibliothek zu Berlin – Preußischer Kulturbesitz.

DANIEL JOHN ANDREW REYNOLDS

As an aside, the capital or initial letters have the technical term "uppercase," while the small letters are called "lowercase."¹⁷



Above, the text's illustration for Gießen, or casting. It shows two men pouring molten metal into a large sand-casting mold. From the same source as the previous image.

METAL

METAL PLAYS A CHIEF ROLE in the manufacture of typefaces. It should be both hard and robust. Such a composition is obtained from copper and tin. [In German,] the gunmetal is called Rotguß [red cast] because of its reddish color. When copper and tin are mixed in the right proportions and well conjoined, they produce bell metal or bronze, which is the metal best suited for letters that will be embossed [Pressenschriften].

Another variety is brass, called Gelbguß [yellow cast] in German, whose components are copper and zinc. As a category, brass also includes the so-called "wild" gunmetal, often used as a substitute for expensive bell metal when copper and tin prices are high.

On the other hand, we expressly point out that we only process the very best raw metals, regardless of current metal prices. Since we have our own metal foundry – in contrast to some other engraving companies – we can give a full guarantee that our typefaces and engravings for the gilding press are, in fact, manufactured from bell metal or bronze rather than just being described by those names.¹⁸

MOLDING AND CASTING

THE MATERIAL FOR MOLDING TYPEFACES and engravings for the gilding press is a particular kind of sand that is not found everywhere – just in a few areas of Germany.¹⁹ Furthermore, tall and elongated frames made of iron or brass are required for molding, with openings for the pouring channel and two air channels on one narrow side. The first of these sits in the middle of the latter two. When two of these frames are placed on top of each other and connected, they form the molding or casting container.

When the molding work is complete, the molding boxes are placed in the drying oven to remove the moisture from the sand. At the same time, the sand becomes solid enough to withstand the pressure of the liquid metal sufficiently.

When one proceeds to the casting, the two molding box parts – which always belong together – are fitted onto one another, with guidance and support being affected by pins located outside. Several boxes thus assembled are placed in a screw press with the pouring channel facing upwards. The liquid metal prepared in the graphite crucible is then carefully poured into the middle of the three openings that form the pouring channel's mouth.

Once the metal has cooled, the boxes or castingdevice bottles are disassembled. The cast metal is then removed, which destroys the sand mold in the process. If more casts are needed, new casting molds must be formed again and again – a fact that should especially be noted by those who were previously of the opinion



The left-hand image above shows the sand mold inside a casting frame. Dornemann & Co. employees would have pressed several model slugs, one after another, into wet sand to create this mold. The above-right illustration shows a rendering of the metal cast made from the mold on the left. From Dornemann & Co.,"Kurze Abhandlung über die Fabrikation von Schriften für die Vergoldepresse," vii. Another Magdeburg-based company, Böhme & Co., produced the illustration. Source: Staatsbibliothek zu Berlin – Preußischer Kulturbesitz.

that the impressed form remains intact forever, allowing for as many castings as one likes.²⁰

After the casting has been freed from the loose and burned-on sand adhering to it, and the individual rows have been knocked off the central rod, the casting rows are sorted, and at the same time, the bad ones are discarded.

ENGRAVING

EVEN THE BEST CASTING does not turn out in such a way that it can immediately be placed in the hands of the engraver. The main problem is that, due to the uneven contraction or shrinkage of the casting metal, the individual lines of type differ in height and often collapse in the middle. In large typefaces, that is particularly noticeable in an unpleasant way.



Above, the text's illustration for Rohguß-Zeile, or raw-cast lines. The image shows two slugs after being taken out of the sand-casting mold. At this stage, the letterforms' surfaces are still too rough for use. From Dornemann & Co.,"Kurze Abhandlung über die Fabrikation von Schriften für die Vergoldepresse," viii. Another Magdeburg-based company, Böhme & Co., produced the illustration. Source: Staatsbibliothek zu Berlin – Preußischer Kulturbesitz.

However, since having a completely even face is the first prerequisite for achieving an exact height for all individual letters along a line, all slugs must first be aligned. Then, the face-sides must be sanded down until they are completely flat, and each letter stands as high as all the others. This processing cannot be avoided. It naturally changes the original image of the letters; the latter becomes stronger or bolder and no longer in the same proportion because letters standing further upwards on the slug have to be sanded down enough to match the height of the deeper ones. Then, it becomes the engraver's task to trim down the deformed letters on the slug so that they appear the same as they do in the type specimen from which the customers place their orders. In other words, it comes down to the skill and understanding of the engraver whether or not the letterforms are reproduced as they appear on the models; the models alone cannot guarantee this.

That is especially true for the smallest and most condensed typefaces. Because of the smallness and narrowness of their letter images, they can only be imperfectly reproduced by casting and, therefore, place increased demands on the engraver. But finishing those letters is also associated with considerable difficulties because their body sizes are so small. Logically, cleanly engraved and precisely justified typefaces in small sizes must therefore be more expensive than their successively larger sizes.



Above, the text's illustration for gravierte Gußzeile, or engraved slugs. Here, we see the same slugs shown in the previous image, but now their letters have been sanded down, and an engraver has removed all excess weight resulting from the sand casting process. The letters have also been polished, and each one is ready to be sawn off of the slug. From the same source as the previous image.

FINISHING

THE ENGRAVED SLUGS PROCEED to the finishing shop for further processing, where they are planed to the correct height, justified so that the baseline is aligned to the expected position, polished, broken apart into individual letters, fonted together, and prepared for shipping.²¹ All this work must be carried out with utmost care and by specialist workers, for the slightest mistake in finishing the typefaces will jeopardize their usefulness. For instance, just a little bit of carelessness on the part of the planer will cause some letters – after they have been cut off of the slugs and bundled together into packaged fonts – to differ in height and then sometimes protrude too much during printing, while other will not print at all. On the other hand, a tiny oversight on the part of the justifier will prevent the letters from sharing a common baseline and cause them to "dance," as one says.

Cutting the slugs apart into individual letters is also a job that requires the utmost attention. If the saw blade does not go very sharply through the center of the space between two letters, too much from the beard of one letter will be removed, and too little from the other. As a consequence, when a title is composed with these letters, one will stick too close to other letters while another will stand so far away from its neighbor that one might think tracking had been added.²²

Polishing is not that simple of a matter, either. The types should receive a high gloss polishing. That means they must be vigorously polished. Yet, polishing too much will destroy the engraving's sharpness.

FINAL WORD

AS WE HAVE SEEN, fabricating typefaces for the gilding press is as difficult as it is time-consuming and expensive. Therefore, it is also self-evident that typefaces for embossing that meet the highest requirements cannot be supplied cheaply. Contrary assurances should not be believed. Anyone who intends to purchase typefaces for the gilding press should be wary of cheap offers, for cheap and good have always gotten along badly. *[End of my translation]*

CHANGES AFTER 1922

EVEN BEFORE FRITZ DORNEMANN established Dornemann & Co., a second method for making brass types for bookbinders had been introduced. A Krefeld engraving company operated by Otto Kaestner developed a way to cast brass type from foundrytype-style matrices in hand-held molds—just like all foundry types made before the nineteenth century had been cast.²³ Dornemann & Co. purchased Kaestner's brass-type business in 1922.²⁴ After that, it began casting its brass types from matrices instead of the sand-casting process described above.²⁵

As with brass and bronze, standard typefounding equipment could be coaxed into casting with zinc. For larger sizes, type router-cut from aluminum blocks proved simpler to produce than Hugo Friebel's brass poster types or the steel types that Dornemann & Co. also made.²⁶ While those aluminum fonts could be used for poster printing, they were aimed at printing on cardboard and textiles. Bookbinders fonts are still manufactured from brass, bronze, and zinc-aluminum today. My impression is that most of those sorts are individually cut by routers. That is a lot like wood type, although the routers used are digitally driven instead of guided by hand; however, casting has not entirely been replaced. The Maison Alivon in Paris-which provides hand tools for bookbinders-claims to be "the last bronze-type founders in the world."27 Much present-day embossing and foil-stamping is not made with fonts of type but with plates made from zinc or brass. The designs in these plates are chemically etched—a process that offers contemporary designers a great deal of flexibility since the plates can be created from vector files they produce themselves, with the help of software applications like Adobe Illustrator.

CONCLUSION

SINCE BRASS IS SUCH A DURABLE MATERIAL, a second-hand market for brass bookbinding types thrives. As I completed this article in December 2022, ebay.de had more than 2,900 listings for fonts of this kind.²⁸ A cursory glance at the search results suggests that-typographically speaking-many of these types have designs dating to the end of the 1890s and the early 1900s, although the brass types could have been cast decades later. The fonts are on body sizes of various heights. Many of the results are for fonts that only include numerals. Brass-type foundries like Dornemann & Co. also sold fonts with fewer sorts. restricted to the numbers. So it is not clear whether those search results contain complete fonts as once delivered or simply a surviving subset. Krefeld, the German town where I live and work, has a population of about 225,000. It is still home to three manual bookbinderies. Two still include brass fonts for gilding and embossing. Although it is often impossible to identify a brass font's manufacturer simply by looking at its sorts, many of the fonts still in circulation today must have been manufactured by Dornemann & Co.

While I have not conducted a survey, I have run across several workshops in Germany and the Czech Republic that still have the original packaging for one or more of their Dornemann & Co. fonts. There is a lot of research into the industry that could still be undertaken. German brass-type makers like Dornemann & Co. sold their products internationally. Those are presumably still common in many places. More information about the environment they were created in may be helpful and enriching to contemporary craftspeople interested in their products.



The above photograph reproduces a drawer of brass bookbinders' type from Dornemann & Co. in Magdeburg. The original packaging is also inside the cabinet, and the label tells us that this is Dornemann & Co.'s font number 11348. That's the 36p size of Friedrich Wilhelm Kleukens's Halbfette Kleukens-Antiqua. The Bauersche Gießerei originally published that as a foundry typeface in 1910. Later, Dornemann & Co. began distributing the design in brass. I took this photo at UMPRUM in November while visiting the Prague art school's new technical building. Depending on exactly when in the 20th century's first four decades this font was purchased, the brass types were either made by sand casting or by a matrix/hand-mold method.

This article was peer-reviewed

EDITOR'S NOTE: Editor's note: Dornemann finishing tool pamphlets have been digitized by the Staatsbibliothek zu Berlin and can be found at https:// bit.ly/42FXO5m. Two digitized Dornemann catalogs can also be viewed here: https://digitalcollections. rit.edu/luna/servlet/s/qcmn32. They are part of the Rochester Institute of Technology's online Cary Graphic Arts Collection: https://digitalcollections. rit.edu/luna/servlet/RIT~1~1, where other materials related to printing and bookbinding can be found.

NOTES

1. An earlier version of this article appeared on my blog as part of a series of posts examining the history of Germany's brass-type manufacturers. See Dan Reynolds, "Sandcasting brass types for bookbinders," TypeOff., accessed on December 18, 2022, https://www.typeoff.de/2022/12/ sandcasting-brass-types-for-bookbinders/.

2. Poster types were manufactured from several more materials later in the twentieth century, particularly from resin–as in the Plakadur types from H. Berthold AG–and aluminum. For details about these latter alternatives to wood type, see Dafi Kühne, "Alternatives to wood type in the 20th century" (MRes diss., University of Reading, 2019).

3. Wilhelm Jacob, "Die Herstellung von Messingtypen auf Hohlfuss für Buchdruckzwecke," Klimsch's Jahrbuch: *Technische Abhandlungen und Berichte über Neuheiten aus dem Gesamtgebiete der graphischen Künste* 6 (1905): 83–88.

4. Originally established in 1834 as Ries & Comp., this company's name changed to Alfred Falckenberg & Comp. in 1842. See Albert Falckenberg & Comp., "Schrift- und Polytypen-Proben von Albert Falckenberg & Comp. in Magdeburg," *Journal für Buchdruckerkunst, Schriftgießerei und die verwandten Fächer* 9, no. 9 (September 1842): n. p., supplement to the issue following col. 144.

5. To date, the earliest mention of Falckenberg & Comp.'s brass types that I have found is in J. R. Herzog, L. Brade's *Illustrirtes Buchbinderbuch* (Leipzig: Verlag von Otto Spamer, 1868), 194.

6. Friedrich Bauer, *Chronik der Schriftgießereien in Deutschland und den deutschsprachigen Nachbarländern* (Offenbach am Main: Verlag des Vereins Deutscher Schriftgießereien, 1928), 144–145. Bauer wrote that Dornemann directed the Edm. Koch & Co. for twenty years. Since he was only twenty-four when he came to the company, however, I suspect that he joined it as a lower-level employee and was only named its director after the death of its owner, Edmund Koch, in 1890.

7. As this article discusses late-nineteenth-century German practices in English, readers may well wonder how the contemporary typefounding operated in the United States. One of the best books on that subject, providing both an overview of the industry and vignettes of several type designers and engravers active within it, is William E. Loy, Stephen O. Saxe, and Alastair Johnson, Nineteenth-century *American Designers and Engravers of Type* (Newcastle, DE: Oak Knoll/London: The British Library, 2000).

8. Dan Reynolds, "Berthold steel types from Dornemann & Co," TypeOff., accessed on December 18, 2022, https://www.typeoff.de/2022/11/ berthold-steel-types-from-dornemann-co/.

9. Handwritten notebook in the historical archive at the Stiftung Deutsches Technikmuseum Berlin, shelf number I.4.327 NL Möllenstädt. H. Berthold AG, Berthold-Schriften (n.p., n.d.), 250–252.

10. Germany introduced design patents in 1876, and the country's type-makers took immediate advantage of the protection these could offer their business. Before 1906, Gebr. Klingspor operated under the name "Rudhard'sche Gießerei." I have not been able to locate the Rudhard'sche Gießerei's design patent for the Offenbacher Schwabacher, but another style from that "family" was registered on April 27, 1898; see Deutscher Reichsanzeiger und Preußischer Staatsanzeiger, "Deutscher Reichsanzeiger," Universitätsbibliothek Mannheim, accessed on December 18, 2022, https:// digi.bib.uni-mannheim.de/viewer/reichsanzeiger/ film/010-9417/0077.jp2. Genzsch & Heyse received a German design patent for the Grasset typeface on December 3, 1900. Based on a November 20, 1903 notice that ran in the December 3, 1903 issue of the Deutscher Reichsanzeiger newspaper, that patent was likely scheduled to expire on December 2, 1910; however, Genzsch & Heyse could have filed for another extension, which would have extended its rights over the Grasset typeface until about 1915. See Deutscher Reichsanzeiger und Preußischer Staatsanzeiger, "Deutscher Reichsanzeiger," Universitätsbibliothek Mannheim, accessed on December 18, 2022, https:// digi.bib.uni-mannheim.de/viewer/reichsanzeiger/ film/051-9459/0436.jp2.

11. The German text is "Alleiniges Recht der Vervielfältigung." See Dornemann & Co., Dornemann & Co. Madgeburg, Deutschland, Fabrikation von Schriften u. Gravuren für Buchbinder (Magdeburg: Dornemann & Co., n. d. [ca 1910]), 2, 24, and 60.

12. Dornemann & Co. [ca 1910], vi-ix.

13. In 1910, one hundred thousand Marks had an equivalent purchasing power of €600,000. "Kaufkraftäquivalente historischer Beträge in deutschen Währungen," Deutsche Bundesbank, accessed December 18, 2022, https://www.bundesbank.de/resource/ blob/615162/13c8ab8e09d802ffcf2e5a8ae509829c/ mL/kaufkraftaequivalente-historischer-betraege-in-deutschen-waehrungen-data.pdf.

14. The German term used for "space" here is *spatium*. The specific *spatium* that Dornemann & Co. workers placed between the letterforms in its model slugs was probably as wide as the saw blade they used to cut each successive sort from the brass slug that resulted from the casting process.

15. Dornemann & Co. also made brass types for printing texts on ribbons. It called those products Bändeschriften.

16. Dornemann & Co., Ferro-Typen für Plakatund Zeitungsdruckereien, sowie für Papierwaren-, Kartonnagen-, Säcke- und Kisten-Fabriken. D. R. G. M. (Magdeburg: Dornemann Co., 1930).

17. In German, this sentence reads: Nebenbei sei bemerkt, daβ die großen oder Anfangsbuchstaben die technische Bezeichnung "Versalien" haben, während man die kleinen Buchstaben "Gemeine" nennt.
"Versalien" and "Gemeinen" are typical German typographic terms for majuscules and minuscules.

18. Brass is an alloy of copper and zinc, while bronze comes from combining copper and tin–although the alloy could include other metals. Dornemann & Co. created its alloys from the necessary raw materials, and the exact compositions may well have been company secrets. These may have also changed over time depending on the metals' availability. At least one later Dornemann & Co. catalog for bookbinders expressly titled its products as "bronze types." 19. In today's manufacturing, the sand used is called "green sand," meaning it has "wet" qualities, like wet "green" wood. It can hold the molded shape and not crumble. It often has clay added to it. That is almost certainly a different substance than what Dornemann & Co. used.

20. Dornemann & Co.'s sand-casting process seems incredibly similar to how brass type was made in Korea; see Beth McKillop, "The History of the Book in Korea," in *The Book: a Global History*, ed. Michael F. Suarez and H. R. Woudhuysen (Oxford: Oxford University Press, 2012), 593–604, here 599–600. For illustrations of the process, see Indra Kupferschmid, "Jikji and Korean type making," Flickr, accessed on December 18, 2022, https://www.flickr.com/photos/ kupfers/albums/72157677404991818.

21. At typefoundries, this finishing process is called hand-dressing. In wood-type manufacturing, it is called trimming. For more information about hand-casting foundry type, see Stan Nelson, "Dressing Type," YouTube, accessed on December 18, 2022, https://www.youtube.com/watch?v=LiJXXzx9yko.

22. My use of the term "tracking" is probably an anachronism here. What the author meant, in the original text, is that a sort with too much negative space on one side would appear to viewers as if additional spacing material had been placed before or after its letterform.

23. Otto Kaestner mentioned this in the foreword to one of his company catalogs. In English, he wrote that "with one exception all engravers manufacture their hand-blocking types in the same way as blocking types [for embossing] ... my types are cast singly in copper moulds exactly as metal types." Otto Kaestner, *Muster-Buch über Messing-Handdruckschriften, Stempel u. Fileten* (Krefeld: Otto Kaestner, n. d. [ca 1901–1909]), n. p.

24. Robert A. Mullen suggests that casting brass type from hand-held moulds was the most common manufacturing method in the United States, although other methods were also used. He writes, "most American brass type was cast, often in hand moulds, though sometimes in a casting machine. At least one American company engraved the character on cast type bodies. The larger sizes of brass type were probably cast in sand moulds." See Robert A. Mullen, *A Short History of Brass Type in America* (La Crosse, WI: Xanadu Press, 2014), n. p.

25. Heinrich Lüers, "Wie entstehen die Handvergoldeschriften aus Messing? Ein Gang durch eine Messingschriftgießerei," *Der Buchbinderlehrling. Monatsschrift für die deutschen/schweizerischen und österreichischen Buchbinderlehrlinge* 16, no. 3 (1942): 16–24.

26. Kühne, "Alternatives to wood type," 65-71.

27. The exact statement is "La maîtrise de ces opérations portées par « notre temps » et « notre histoire » est pourtant devenue exceptionnelle, puisque force est de constater que nous sommes devenus les derniers fondeurs de caractères en bronze au monde!" The Maison Alivon dates back to 182. See "Notre maison," Maison Alivon, accessed on December 18, 2022, https://maison-alivon.com/notre-maison/.

28. Search results for "Messingschrift," ebay.de, accessed on December 18, 2022, https://www.ebay. de/sch/i.html?_from=R40&_sacat=0&_nkw=messingschrift&_blrs=spell_check.

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Italics—Please italicize all book and journal titles. Article titles should be enclosed within double quotation marks. Isolated non-English words and phrases should be italicized, with the following exceptions:

- Non-English proper nouns.
- Technical terminology in common use or for which there is no equivalent term in English.
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