

mPach

Integrated Publishing and Archiving of Journals in HathiTrust

Seth Johnson, Bryan Smith, & Kevin S. Hawkins
Michigan Publishing

Overview

1. Overview of mPach, a package of tools for publication of born-digital journals in HathiTrust
2. Introduction to mPach's Prepper interface
3. Technical discussion of mPach's Norm utility for converting Word DOCX files to JATS XML

Michigan Publishing

Michigan Publishing is the primary academic publisher of University of Michigan and is based in the University Library.

Michigan Publishing has long used a system called DLXS as its primary publishing platform, but we need an architecture that will scale better in order for us to continue to grow.

publishing.umich.edu

What is HathiTrust?

Partnership of research libraries around the world

Shared digital repository certified to be preservation-quality with over 10 million digitized volumes (nearly 500 terabytes of data)



HATHI
TRUST

www.hathitrust.org

Publishers and Archives

Publishers require flexibility to innovate. But archives need stability.

HathiTrust provides us with an infrastructure in which to provide long-term preservation and discoverability while allowing for innovative services to be built on top.

Main design principle

Archiving happens as a byproduct of publication rather than after the fact.

JATS and mPach

JATS was selected because of the increasing coalescence of the publishing industry around this open, non-proprietary standard.

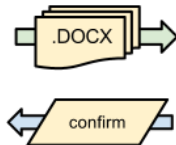
Publishing (“blue”) tag set works for born-digital literature, with a constrained set of tags to render, unlike “green”. But unlike “orange” it also includes important metadata elements (in <front>).

mPach overview

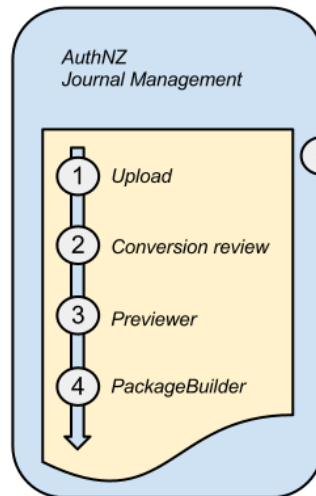
mPach

Peer Review and Editorial Workflow

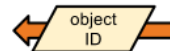
OJS
or
other editorial
management system
or workflow



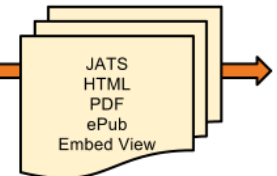
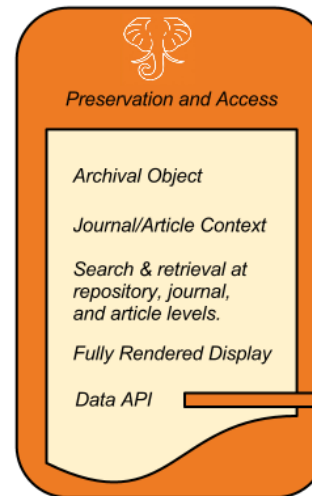
mPach Prepper



Submitter



HathiTrust



www.hathitrust.org/mpach

Prepper

Dashboard for administering a journal and putting manuscripts through the production process

Guides the conversion process from DOCX to JATS (using Norm)

Ruby on Rails application

Prepper Article Prep (1 of 8)

mPach Jeremy Morse

Dashboard

Journals

Help

feedback

Journal of Electronic Publishing

Upload article

No file chosen

Resume article

Article Title	Author	Vol	Issue	Status

Manage Volumes

VOLUME:

PUBLICATION YEAR:

VOLUME NO.:

Issue No.	Publication Date	Issue Title	Status
1			
2			

Notifications 4

- Hypernews, Hyperreaders and Beyond** was accepted by HathiTrust *yesterday*
- Hypernews, Hyperreaders and Beyond** was submitted to HathiTrust *three days ago*
- Kevin Hawkins** uploaded article **Two Future Binaries to Journal of Electronic Publishing** *six days ago*
- Kevin Hawkins** can now submit articles to **Journal of Electronic Publishing** *two weeks ago*

[Show all](#)

Prepper Article Prep (2 of 8)

mPach Jeremy Morse

[JOURNAL OF ELECTRONIC PUBLISHING](#) > COLOR VARIABILITY AND BODY SIZE OF LARVAE OF TWO EPOMISSPECIES (COLEOPTERA, CARABIDAE) IN ISRAEL, WITH A KEY TO THE LARVAL STAGES

[Conversion Report](#) | [Add Media](#) | [Preview](#) | [Supplemental Material](#) | [Review](#)

Conversion Report

Article Metadata

Please review the following metadata. If there are any typos or excluded fields, please correct in your source document and re-submit.

ARTICLE TITLE

ARTICLE SUBTITLE

AUTHORS	Given name	Surname	Email	Affiliation
	<input type="text" value="Gil"/>	<input type="text" value="Wizen"/>	<input type="text"/>	<input type="text"/>
	<input type="text" value="Avital"/>	<input type="text" value="Gasith"/>	<input type="text"/>	<input type="text"/>

CONTRIBUTORS *No contributors found*

KEYWORDS

ABSTRACT

PUB DATE

Prepper Article Prep (3 of 8)


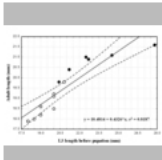

mPach Jeremy Morse

JOURNAL OF ELECTRONIC PUBLISHING > COLOR VARIABILITY AND BODY SIZE OF LARVAE OF TWO EPOMISSPECIES (COLEOPTERA, CARABIDAE) IN ISRAEL, WITH A KEY TO THE LARVAL STAGES

[Conversion Report](#) [Add Media](#) [Preview](#) [Supplemental Material](#) [Review](#)

Add Media

The following 9 media files were detected. Please review.

Media	Filename	Size	Alt text	Upload new version
	image6.jpg	340 KB	<input type="text"/>	<input type="button" value="Choose File"/> No file chosen
	image9.jpg	95 KB	<input type="text"/>	<input type="button" value="Choose File"/> No file chosen
	image1.jpg	173 KB	<input type="text"/>	<input type="button" value="Choose File"/> No file chosen

Prepper Article Prep (4 of 8)

mPach Jeremy Morse

JOURNAL OF ELECTRONIC PUBLISHING > COLOR VARIABILITY AND BODY SIZE OF LARVAE OF TWO EPOMISSPECIES (COLEOPTERA, CARABIDAE) IN ISRAEL, WITH A KEY TO THE LARVAL STAGES

Conversion Report Add Media Preview Supplemental Material Review

Pageturner Preview

Article Information

Color variability and body size of larvae of two *Epomisspecies* (Coleoptera, Carabidae) in Israel, with a key to the larval stages

Gil Wizen
Avital Gasith

Abstract Species identification using the characteristics of developmental stages is challenging. However, for insect taxonomy the coloration of larval stages can be an informative feature. The use of live specimens is recommended for this because the color fades in preserved specimens. In this study we examine the possibility of using variation in coloration and color pattern of larvae in order to distinguish between two ground beetles species *Epomis dejeani* (Dejean, 1831) and *Epomis circumscriptus* (Dufschmid, 1812). We present an atlas and describe the coloration and body size of the three larval stages of the above species based on live specimens. An identification key is given for the three larval instars of the two *Epomis* species. The first instar larvae of the two *Epomis* species can be easily distinguished based on their color. From the second instar on, the variability in coloration and color patterns increases, creating an overlap in these attributes between larvae of the two species. Except for minor differences in color of the antennae and the base of the mandibles, larvae of the two species are indistinguishable at the second

◀ Previous Next ▶

Prepper Article Prep (5 of 8)

mPach Jeremy Morse ▾

JOURNAL OF ELECTRONIC PUBLISHING > COLOR VARIABILITY AND BODY SIZE OF LARVAE OF TWO EPOMISSPECIES (COLEOPTERA, CARABIDAE) IN ISRAEL, WITH A KEY TO THE LARVAL STAGES

Conversion Report Add Media Preview **Supplemental Material** Review

Supplemental Material

Article PDF

No file chosen

Other Material

File	Label
<input type="button" value="Choose File"/> No file chosen	<input type="text" value="e.g., Data for figure 2, ABC conference presentation, etc."/>

Optional. Upload up to **one** PDF version of the article.

Optional. Upload additional supplemental material, such as data sets, presentations, etc. You can add an **unlimited** number of files. Please provide a descriptive **label** for each item.

Prepper Article Prep (6 of 8)

mPach Jeremy Morse ▾

[JOURNAL OF ELECTRONIC PUBLISHING](#) > COLOR VARIABILITY AND BODY SIZE OF LARVAE OF TWO EPOMISSPECIES (COLEOPTERA, CARABIDAE) IN ISRAEL, WITH A KEY TO THE LARVAL STAGES

[Conversion Report](#) | [Add Media](#) | [Preview](#) | [Supplemental Material](#) | [Review](#)

Review

We successfully build and validated the METS package. This article is ready for submission to HathiTrust.

[← Previous](#) [Submit >](#)

Prepper Article Prep (7 of 8)

mPach Jeremy Morse ▾

[JOURNAL OF ELECTRONIC PUBLISHING](#) > COLOR VARIABILITY AND BODY SIZE OF LARVAE OF TWO EPOMISSPECIES (COLEOPTERA, CARABIDAE) IN ISRAEL, WITH A KEY TO THE LARVAL STAGES

A Confirmation of submission

mPach submission # 0123456789

The HathiTrust has received your submission for

[Color variability and body size of larvae of two Epomisspecies \(Coleoptera, Carabidae\) in Israel, with a key to the larval stages](#)

[Return to journal...](#)



Dashboard



Journals



Help



feedback

Prepper Article Prep (8 of 8)

mPach Jeremy Morse

Dashboard

Journals

Help

feedback

Journal of Electronic Publishing

Upload article

No file chosen

Resume article

Article Title	Author	Vol	Issue	Status
Color variability and body size of larvae of two Epomisspecies (Coleoptera, Carabidae) in Israel, with a key to the larval stages	Gil Wizen, Avital Gasith	1	1	Submitted

Manage Volumes

VOLUME:

PUBLICATION YEAR:

VOLUMNE NO.:

Issue No	Publication Date	Issue Title	Status
----------	------------------	-------------	--------

Notifications 4

- Hypernews, Hyperreaders and Beyond** was accepted by HathiTrust *yesterday*
- Hypernews, Hyperreaders and Beyond** was submitted to HathiTrust *three days ago*
- Kevin Hawkins** uploaded article **Two Future Binaries to Journal of Electronic Publishing** *six days ago*
- Kevin Hawkins** can now submit articles to **Journal of Electronic Publishing** *two weeks ago*

[Show all](#)

0.0.0.0:3000/journals/2#manage-volumes-widget-body

Article View in HathiTrust

Home About Collections Help Feedback

HATHI TRUST Digital Library

FULL-TEXT CATALOG

Search words about or within the items

Advanced full-text search Search tips Full view only

LOG IN

« Back to *Journal of Electronic Publishing* collection

[JEP]
the journal of
electronic
publishing

Journal of Electronic
Publishing
Vol. 15, No. 1 (Summer 2012)

About this journal

About this Article

Refurbishing the Camelot of
Scholarship: How to Improve the
Digital Contribution of the PDF
Research Article

John Willinsky
Alex Garnett
Angela Pan Wong

View full catalog record

Copyright: (cc) BY

Get this Article

Download (PDF)
Download (XML)
Download (EPUB)

Supplemental Materials

Data Set (XLS, 35K)

Add to Collection

Login to make your personal
collections permanent

Select Collection

Add

Share

Permanent link to this article
<http://dx.doi.org/0000.0000.000>

Version: 2012-07-19 16:37 UTC

Search In this text Find

Refurbishing the Camelot of Scholarship: How to Improve the Digital Contribution of the PDF Research Article

John Willinsky, Alex Garnett, and Angela Pan Wong

Volume 15, Issue 1, Summer 2012
DOI: <http://dx.doi.org/10.3398/3336451.0015.102>
Permissions

This paper was refereed by the Journal of Electronic Publishing's peer reviewers.

Abstract

The Portable Document Format (PDF) has become the standard and preferred form for the digital edition of scholarly journal articles. Originally created as a solution to the need to "view and print anywhere," this technology has steadily evolved since the 1990s. However, its current use among scholarly publishers has been largely restricted to making research articles print-ready, and this greatly limits the potential capacity of the PDF research article to form a greater part of a digital knowledge ecology. While this article considers historical issues of design and format in scholarly publishing, it also takes a very practical approach, providing demonstrations and examples to assist publishers and scholars in finding greater scholarly value in the way the PDF is used for journal articles. This involves but is not limited to graphic design and bibliographic linking, the deployment of metadata and research data, and the ability to combine elements of improved machine and human readability.

Introduction

The Portable Document Format (PDF) was released by Adobe Systems in 1993 to facilitate the electronic distribution of documents. It was created to assist the circulation of digital documents among the newly networked computers that were spreading through offices, whether in local area networks (LAN) or through the Internet. What had become apparent was that documents were being prepared by various word-processing programs, each with their own proprietary file format. With networking racing ahead of file compatibility, John Warnock, Adobe Systems cofounder, in 1991 initiated what he called the Camelot Project in order to solve the "view and print anywhere" problem, as he neatly characterized it (1991, p. 1). Nearly a decade earlier, in 1982, the resourceful Warnock, working with Charles Geschke, figured they had solved the same problem with PostScript (marking the beginning of Adobe Systems). However, PostScript was itself not proving universally applicable. It required "powerful desktop machines," as Warnock put it, as well as PostScript printers (1991, pp. 1-2).

The goal of Camelot was to develop a lightweight file format that would serve the broadest possible range of users, at least until widespread computing power caught up with the demands of PostScript. Camelot was intended, then, as a temporary, transitional solution to the view-and-print-anywhere problem.^[1] Its history and success proved otherwise. When launched in 1993, the file format's poetic Camelot moniker was replaced by the prosaic "portable document format," now universally known as PDF. In 2008, Adobe released the PDF as an open standard for others to develop applications for writing and reading it, in what we might think of as the new twenty-first-century corporate spirit of open standards and open source software.^[2]

In scholarly communication, the PDF has become the standard file format for research articles published in the electronic edition of peer-reviewed journals. Although many journals also publish a HTML version of their articles along with a PDF, the bulk of the research literature is now available in PDF. Over the last decade, the majority of researchers have switched to reading the online edition of journals available through their library's electronic collections (King, Tenopir, Choemprayong, and Wu, 2009, p. 131; Hemminger, Lu, Vaughn, and Adams, 2007). While finding articles online is becoming a common practice, most academic faculty print out a good proportion of the PDFs they wish to read, while younger and more research-oriented scholars lead the way in reading articles on their computer



FULL-TEXT CATALOG

Search words about or within the items



LOG IN

Advanced full-text search Search tips

Full view only

[JEP]

the journal of electronic publishing

Journal of Electronic Publishing

Owner Michigan Publishing

Description

The Journal of Electronic Publishing (JEP) is a forum for research and discussion about contemporary publishing practices, and the impact of those practices upon users.

Our contributors and readers are publishers, scholars, librarians, journalists, students, technologists, attorneys, and others with an interest in the methods and means of contemporary publishing.

Visit External Website

ISSN 1080-2711

Search in this journal Find

Articles (369) About This Journal

Sort by: Date Descending

- + Volume 16 (2013)
- + Volume 15 (2012)
- + Volume 14 (2011)
- Volume 13 (2010)
 - + Number 3 (December 2010)
 - + Number 2 (Fall 2010)
 - Number 1 (Winter 2010)

The Short-Term Influence of Free Digital Versions of Books on Print Sales by John Hilton, III; David Wiley

UP 2.0: Some Theses on the Future of Academic Publishing by Phil Pochoda

Our Book by Sandra Ordonez

Launching (and Sustaining) a Scholarly Journal of the Internet: The International Journal of Baudrillard Studies by Gerry Coulter

Justify Just of Just Justify by Mohamed Elyaaakoubi; Azzeddine Lazrek

XML Production Workflows? Start with the Web By John W. Maxwell; Meghan MacDonald; Travis Nicolson, et al.

Editor's Note by Judith Axler Turner

- + Volume 12 (2009)
- + Volume 11 (2008)
- + Volume 10 (2007)
- + Volume 9 (2006)
- + Volume 8 (2005)
- + Volume 7 (2004)
- + Volume 6 (2003)
- + Volume 5 (2002)
- + Volume 4 (2001)
- + Volume 3 (2000)
- + Volume 2 (1999)
- + Volume 1 (1998)

Journal View in HathiTrust

Norm

Converts DOCX to JATS XML.

1. Parse DOCX XML
2. Internal Representation and Mapping
3. Create JATS XML and assets

Norm Usage

Stand-alone command-line application.

Input: DOCX or ODT file

Output:

- document_name.zip/

- document_name.xml (JATS)

- assets/

- image_1.png

- image_2.png

Word Styles and Norm

Color variability and body size of larvae of two *Epomis* species (Coleoptera, Carabidae) in Israel, with a key to the larval stages

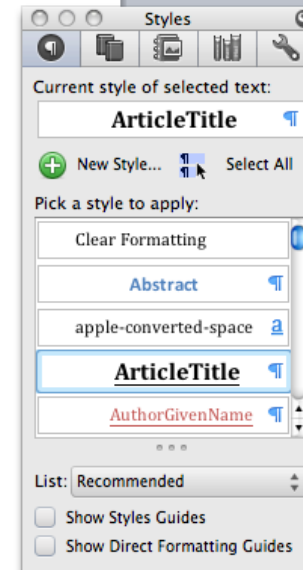
Wizen
Gil
Casith
Avital

Species identification using the characteristics of developmental stages is challenging. However, for insect taxonomy the coloration of larval stages can be an informative feature. The use of live specimens is recommended for this because the color fades in preserved specimens. In this study we examine the possibility of using variation in coloration and color pattern of larvae in order to distinguish between two ground beetles species *Epomis deileani* (Dejean, 1831) and *Epomis circumscriptus* (Duftschmid, 1812). We present an atlas and describe the coloration and body size of the three larval stages of the above species based on live specimens. An identification key is given for the three larval instars of the two *Epomis* species. The first instar larvae of the two *Epomis* species can be easily distinguished based on their color. From the second instar on, the variability in coloration and color patterns increases, creating an overlap in these attributes between larvae of the two species. Except for minor differences in color of the antennae and the base of the mandibles, larvae of the two species are indistinguishable at the second and third larval stages. To the best of our knowledge this is the first attempt to use variation in coloration and color pattern in live larvae in order to identify coleopterans. The color atlas of the larvae enables simple separation of the two *Epomis* species without requiring sophisticated magnifying devices, although it is less straightforward at the second and third larval stages. We found similar body lengths between the two species for all developmental stages, except for third instar larvae prior to pupation. In the two species the difference in larval body length before pupation positively correlated with that of the adult beetles. More than 70% of the adults length can be explained by the length of the late third-instar larva; i.e. the large larvae develop into large adults. The larger specimens are the females.

Epomis larvae, Carabidae, color atlas, body size

Introduction

Coloration can be an informative feature for insect taxonomy (van Emden 1957, Luff 1993¹). While the larvae of some ground beetles (Carabidae) have been well studied (reviewed in Lawrence 1991²) for other beetles the larval stage is still unknown. Those



Norm Transformation Process

Given:

Word document

Configuration specifying:

- Word styles corresponding to each JATS elements
- Parents for each JATS elements
- Appropriate section (head, body, back) for each JATS element

Step 1: Transform data into internal representation

Create empty array for each section (head, body, back)

For each element in DOCX body:

- Find style and contents of element
- Determine which JATS element (configuration)
- Determine which section (configuration)
- Append tuple [JATS element, content, style] to section's array

DOCX XML with Word Style

```
<w:body>
  <w:p>
    <w:pPr><w:pStyle w:val="ArticleTitle"/></w:pPr>
    <w:r>
      <w:t>Color variability and body size of larvae of
two</w:t>
    </w:r>
    <w:r>
      <w:rPr><w:i/></w:rPr>
      <w:t>Epomis</w:t>
    </w:r>
    <w:r>
      ...
```

Norm configuration mappings (default.cfg)

```
[ FRONT ]
```

```
ArticleTitle = article-title
```

```
[ FRONT-PARENTS ]
```

```
article-title=title-group
```

```
title-group = article-meta
```

```
article-meta = front
```

Step 2: Render JATS output from internal representation

Create empty Document Object Model (DOM) tree

For each section (head, body, back):

- Add node for section to tree
- For each tuple for section (see step 1):
 - Create node for JATS element tuple
 - Find parent for element (configuration)
 - Attach node to parent

Marshall output to XML.

Sample internal representation: article title

Title: Color variability and body size of larvae of two *Epomis* species (Coleoptera, Carabidae) in Israel, with a key to the larval stages

In Norm's internal representation:

```
('article-title',  
  [('Color vari...of two', None, None),  
   ('Epomis', ['i'], None),  
   ('(Coleoptera...stages', None, None)],  
  'ArticleTitle')
```

An article title in JATS

```
<article>
```

```
  <front>
```

```
    <title>
```

```
      <article-meta>
```

```
        <title-group>
```

```
          <article-title>
```

```
            Color variability and body size of  
            larvae of two <i>Epomis</i> species  
            (Coleoptera, Carabidae) in Israel,  
            with a key to the larval stages
```

```
          </article-title>
```

Future Plans for Norm

Support for OpenDocument (ODF) format
underway

Considering other formats (LaTeX, PDF)

Planning to release Norm under open source
license

www.lib.umich.edu/mpach