



**“Setting up a digitisation
service in a week”.**

University Digitisation Service

Joe Arthur
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Technical Support Officer



Overview

- History
- What we do
- Technical development
- Show and tell
- Lessons learned
- Invitation to collaborate



History

- 1970s : Record Services microfilm
- 2004 : Invoice scanning
- 2006 : Record Services incorporated in to University Library - refocus on Library collections
- 2010 : University Digitisation Service (UDS) formed and relocated to Bouverie St
- Who are UDS' clients?

Site Selection

The big move



- State Library
- Architects
- Builder
- Removalists
- IT Department
- Vendors
- Clients

Site Selection

- Development of specifications with SLV



Equipment selection and acquisition

- Second hand ATIZ book copier redesigned
- A3 flatbed scanner
- Zeutschel OS14000, A1 600dpi





Establishment & Progression

- Staff and equipment relocated to Bouverie St
- No disruption to financial imaging
- 'Normal' operation by week's end
- Expansion of services & staff



Engaging with staff & students





Technical Development

Ben Kreunen,
Technical Support Officer



Technical Development: Practical goals

- Highest possible image quality
- Automate image processing
- Embed metadata in all files
- Integrate operations
- Operational flexibility
- Opportunity to think differently

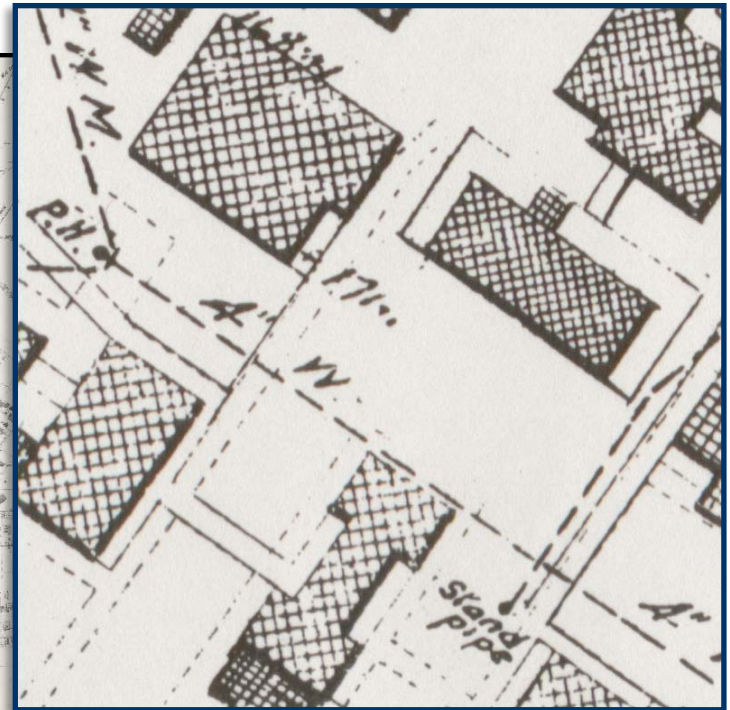
Technical Development

- Reconfiguration of ATIZ book copier
- Brief testing of Zeutschel OS14000
- Flatbed scanner workflow on paper only



Technical Standards

- Same as everyone else BUT varied according to nature of material



Technical Standards

- Reflective illumination of illuminated manuscripts



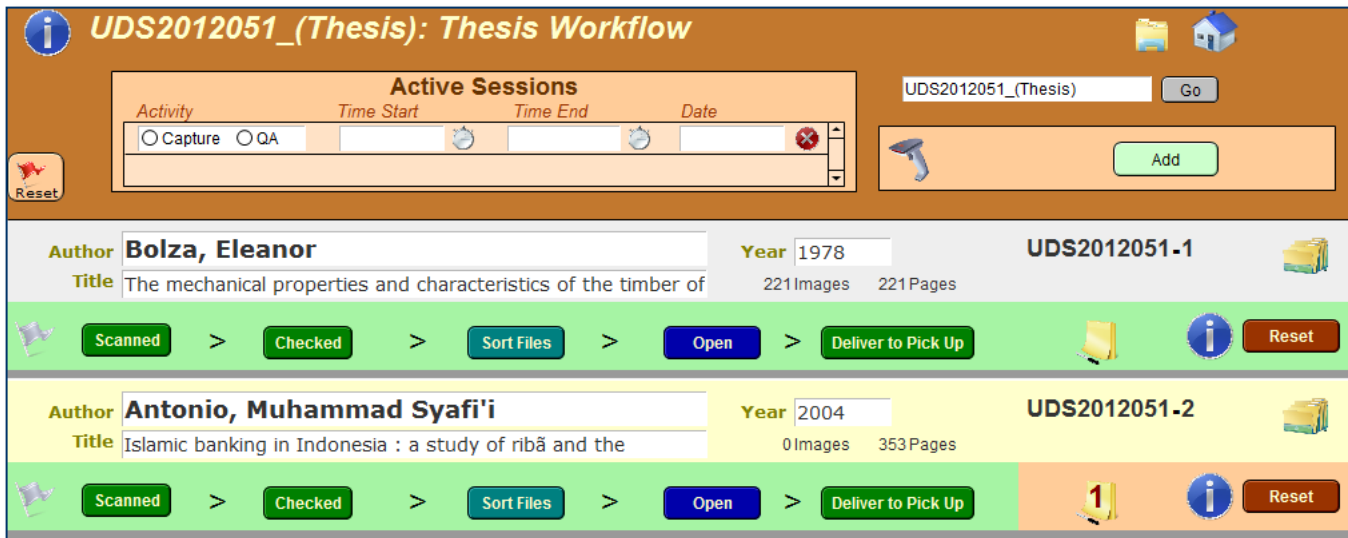
Early Technical Development

- Existing workflows and skill set directly transferrable
- Scalability of workflows?
 - Streamline job tracking/reporting
 - Job/file naming schema



Early Technical Development

- Metadata writing tools (proof of concept)
- OCR service
- Relational database for data management
- Automated processing via command line apps



The screenshot displays a web application titled "UDS2012051_(Thesis): Thesis Workflow". At the top, there is a section for "Active Sessions" with columns for Activity, Time Start, Time End, and Date. Below this, there are two main rows representing different thesis entries. The first row is for "Bolza, Eleanor" with a year of 1978, titled "The mechanical properties and characteristics of the timber of", showing 221 Images and 221 Pages. The second row is for "Antonio, Muhammad Syafi'i" with a year of 2004, titled "Islamic banking in Indonesia : a study of ribā and the", showing 0 Images and 353 Pages. Each row has a series of buttons: "Scanned", "Checked", "Sort Files", "Open", and "Deliver to Pick Up". There are also "Reset" buttons and a "Go" button. The interface is designed with a light blue header and a light green body.

Naïve Assumptions

1. Collecting metadata from the Library catalogue would be easy. Libraries have been doing this for ages.
 - Excel template for item lists
 - Wasted time
 - Reduced data quality
 - Frustrating for all concerned
 - Major rethink required
 - Many technical hurdles



Naïve Assumptions

2. Archiving original scans is an upstream process done by someone else

- Draft data packaging mechanisms extended for production use
- Additional storage acquired (Noble Park data centre)
- 2012 project –
University Digital Preservation strategy



Naïve Assumptions

3. Clients know how files will be delivered to end users

- Additional consultation with clients to help them determine requirements
- Demand for assistance with technical aspects of project management



Diversity and complexity

- The Library is not the only source of material
- The Library catalogue is not the only source of metadata
- The Library's digital repository is not the only destination
 - Brotherhood of St Laurence (DSpace)
 - UoM Archives (EMU)
 - CPA (Hive)
 - eScholarship Research Centre (OHRM)
 - “Un-managed” collections (custom file naming)
 - Open Library book reader
- Public delivery mechanisms not always known upon commencement

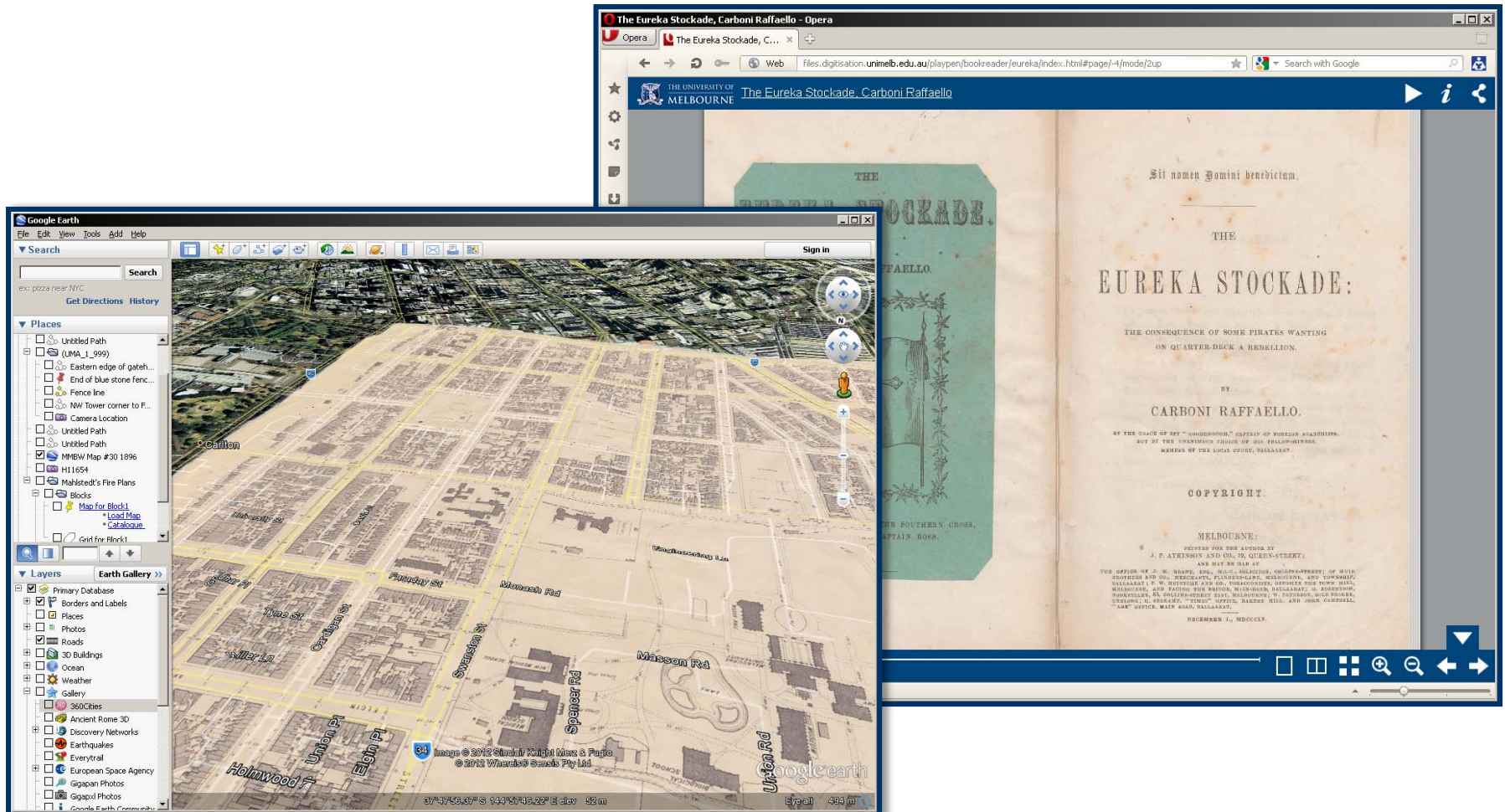


Meeting the challenges: Adaptation



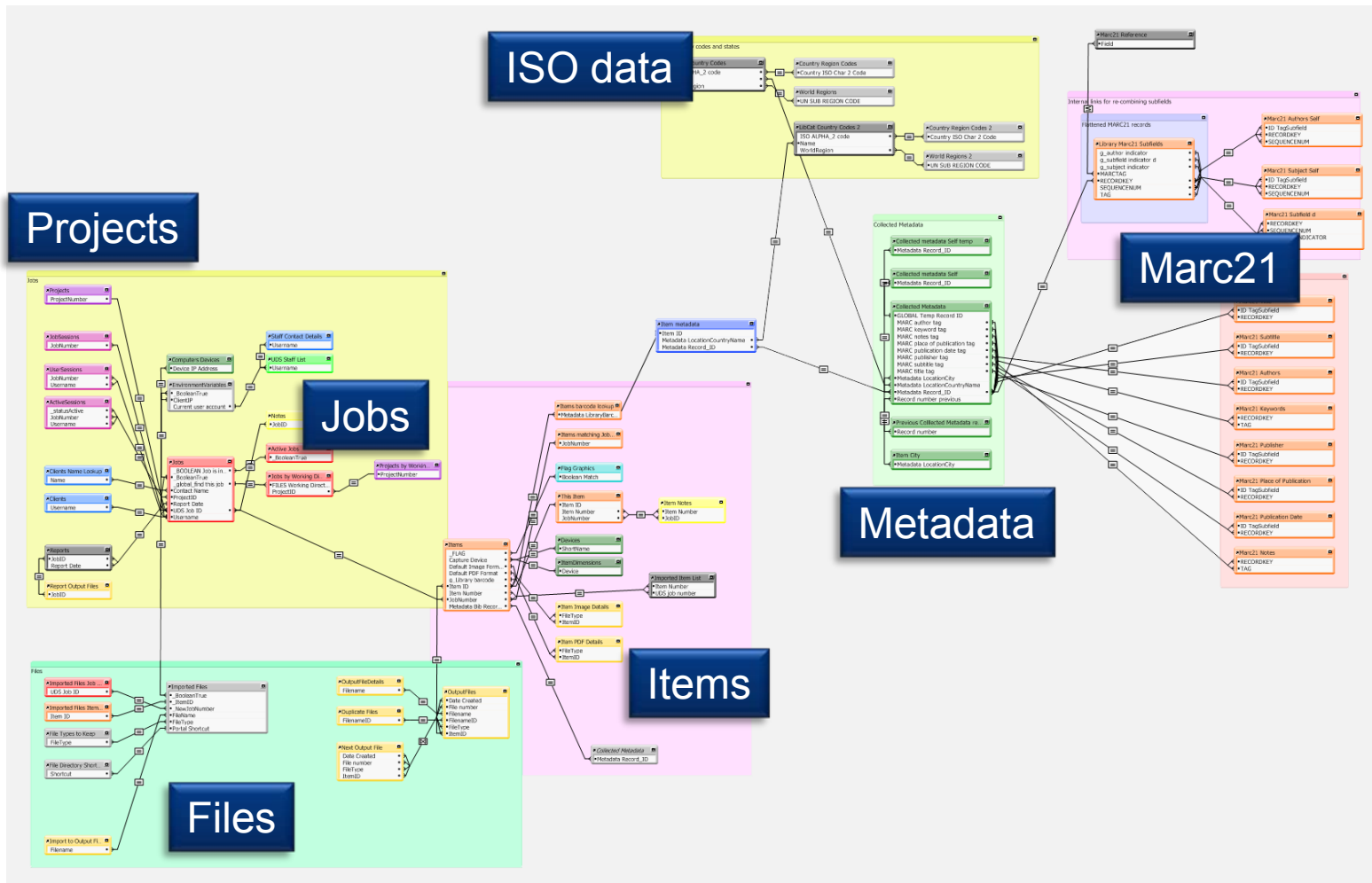


Meeting the challenges: Delivery alternatives





Meeting the challenges: Linking Items, files & metadata





Meeting the challenges: Tools

The screenshot displays the DAMCAT (Digital Asset Management and Catalogue) software interface. The window title is "Postcards - [DAMCAT]". The menu bar includes File, Edit, View, Insert, Format, Records, Scripts, Window, and Help. The toolbar shows various icons for record management, including a search icon. The main area is divided into a left sidebar and a main content area. The sidebar has tabs for Basic, Notes, Location, and Config. The Basic tab is active, showing fields for City, Country (Japan), Code (JP), and Province/State. A list of Japanese provinces is visible. The main content area has tabs for PDF and Web. The Web tab is active, displaying a map of Yokohama, Japan, with a yellow line indicating a route. Below the map are three thumbnail images of a building, labeled "慰霊堂" (Rei-eido), "記念館" (Kinenkan), and "空襲犠牲碑" (Kokuu Jisei Hi). The text below the thumbnails describes the building's history and its role as a memorial for the victims of the Great Kanto Earthquake.

ここにアイコン情報が表示されます

Map Satellite Hybrid

Yokoami

慰霊堂

記念館

空襲犠牲碑

本館は、関東大震災の惨禍を永く後世に伝え、また官民協力して焦土と化した東京を復興させた当時の大事業を永久に記念するため東京都慰霊堂の付帯施設として建てられました。

1階には、主として震災被害資料を陳列し、2階には中央を絵画室とし油絵等を陳列してあります。また被害地域等の復興大模型は、震災後各地で開催された震災の復興展覧会の際に作成 展示されたものです。



Meeting the challenges: Tools

- Facilitate the collection and sharing of metadata
- Spin off from our workflow management tools
 - list files and link to metadata
 - collect metadata from Library catalogue
 - facilitate manual data entry
 - embed metadata into files
- Other functions
 - file sorting and renaming
 - PDF segmentation
- Distributed as standalone runtime or native database

Meeting the challenges: Metadata project



- Crosswalking MARC21 to XMP
 - Flatten and clean XML record
 - Reconstruct in human readable form
 - Map to XMP fields (DC, IPTC, PRISM)

Meeting the challenges: Metadata project

- Links between barcode, recordkey and XML record
 - Using barcode scanners to list items
- Invalid XML DTD workaround
- HEX character code conversion (diacritics)
- Data cleansing
 - Annotations
 - Encoding errors
- XMP mapping
- MARC21 subfield “reconstruction”



We are not librarians!

- limited sample of data quality issues to be addressed
- explore user-focussed presentation of catalogue metadata
- develop generic tools for collection managers and cataloguers
- embedding metadata is a best practise that is seldom practised

Who's up for the challenge?



Australian War Memorial



A collection of images from the “Treasures Revealed” App







Jesus annos. duodecim. ascendens cū parvulis iherosolimā, discipulis. et in scyis illis sibi reman-
ent. qui triduum eum quærentes. filium tantū invenerunt in medio doctor. audientem. et
eum stupore interrogantem eos. Luc. ij. Gädler sculpsit Coloniae. M.D.LXXXII



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et regem maacha cum ipso eius. Qui cum
venisset. castrametati sunt e regione
medaba. Filij quoque ammon congre-
gan de urbibus suis. venerunt ad bellum.
Quod cum audisset david: misit ioab et
omnes exercitus virorum fortium. Egredien-
tes filij ammon: direxerunt ad eum iuxta
portam ciuitatis. Reges autem qui ad au-
xilium eius venerant sepserunt et ager
heredit. Ignor ioab intelligens bellum
et aduerso et post tempus contra se fieri:
elegit viros fortissimos de universis
israhel. et percipit contra filios
ammon. Dixitque. Si videret nunc scire
auxilio meo michi: si autem superarentur
et filij ammon eo tibi in periculum. Con-
fideret et agamus viriliter pro ipso
nostro: et pro urbibus dei nostri. Deus
autem quod in conspectu suo bonum est
faciat. Percepit ergo ioab et populus
qui cum eo erat contra sicum ad prelium:
et fugavit eos. Porro filij ammon vi-
derunt quod fugisset sicus: ipsi quoque fu-
gerunt. abisai fratrem eius: et in gressu
sunt cuncti. Reuerensque est eadem ioab
in iherusalem. Videns autem sicus quod
occidisset eorum israhel: misit nuncios
et adduxit sicum qui erat transfugum.
Iophar autem princeps milicie ada-
derat erat dux eorum. Quod cum annun-
tium esset david: congregavit univer-
sum israhel: et transiit iordanem: et cum
in eos et direxit et aduerso acie il-
lis contra pugnantibus. Fugit autem
sicus israhel. Et interfecit david de scio-
septem milia virorum et idraginta mi-
lia pedum: et iophar exercitus principis.
Viderens autem sui adaderat se ab isra-
hel esse superatos: transfugerunt ad
david et fecerunt ei. Absolvensque ultra

facia quosdam preerat filijs ammon. **XX**
Adum est autem post annum circuli-
to tempore quo solent reges ad
bella procedere: congregavit ioab exer-
citum et robur milicie: et castrametati
fuerunt filios ammon. Percepitque et obsedit
rabba. Porro david manebat in iheru-
salem quando ioab percussit rabba: et de-
sternit eam. Tulit autem david coronam
melchom de capite eius: et invenit in
ea aurum pondus talentum et preciosissimas
gemmas: faciens sibi inde diadema. Ma-
nubias quoque urbis plurimas tulit:
populum autem qui erat in ea reduxit:
et fecit super eos tabulas: et tabulas: et
fecerat carpinea transire: ita ut disce-
rentur et converterent. Sic fecit david
cunctis urbibus filios ammon: et reuer-
sus est cum omni populo suo in iheru-
salem. Post hoc initium est bellum in
gaaz aduersum philistios: in quo
percussit sathay usarchiro saphai de
genere raphaim et humiliavit eos. Ali-
ud quoque bellum gestum est aduersum phi-
listios: in quo percussit abdoanus filius
salus belitruus fratrem poliath ge-
thi: cuius hasta lignum quasi linatoni
regnum. Sed et aliud bellum accidit
in geth: in quo fuit homo longissimus
scelus habens dignos id est simul vi-
ginti quatuor: qui et ipse de raphaim fu-
erat filius generis. Hic blasphemavit
israhel: percussit cum ionathan filius samaa
filius david. Hic fuit filius rapha et geth: qui
occidit in manu david et eorum eius.
XXI
Confluxerunt autem sathay
contra israhel: et interfecit david
ut numeraret israhel. Dixitque david
ad ioab et ad principes populi. Hec
et numerare israhel a beelab usque dau:
et afferre michi numerum ut sciam. Re-
spondensque ioab. Augmentum dno populi

sum contempsit quod sunt. Nonne dno
mi rex: omnes serui mei sunt? Quare hoc
queris dno meus quod in precibus repuerit
israhel? Sed seruis regis magis pre-
ualuit. Egrediensque est ioab et circum-
uincit israhel: et reuersus est iherusalem.
Deditque david numerum eorum quos circui-
erat: et numerus est omnis numerus
israhel mille milia et cingulum milia vi-
rorum eductum gladium. De iuda autem
quadringenta septuaginta milia bella-
corum. Nam leui et beniamin non nu-
merantur: eo quod minus frequentetur
regis imperium. Displeuit autem deo quod
iustum erat: et percussit israhel. Dixitque
david ad dnm: precavi nomen ut ipse fa-
ceret. Obsecro autem iniquitatem se-
ui cuiusque inspicere regi. Et locutus est do-
minus ad gab videndum david dictis.
Vade et loqueris ad david et dic ei. Hec
dicit dno. Tui tibi opus est deo: unum
quod volueris elige ut faciam tibi. Cumque
venisset gab ad david: dixit ei. Hec
dicit dno. Elige quod volueris. Aut
rebus armis philestinis: aut rebus muni-
bus fugere et hostes tuos et gladium
eorum non posse euadere: aut rebus
dudus gladium domini et mortem ve-
lari in terra: et angelus dno interfecit in
universis finibus israhel. Nunc igitur
videt quid respondam ei qui misit me.
Et dixit david ad gab. Ex omni parte
me agustat inimicus. Sed melius michi
est ut manum in manus dno quia mul-
te sunt miserationes eius: quia et manu
hominum. Misit ergo dominus philesti-
nam in israhel: et occiderunt de israhel
septuaginta milia virorum. Misit quoque
angelus in iherusalem: ut periret eam.
Cumque periret: vidit dominus et
misit: et fuit magnitudo malicie: im-
peravit angelus qui periret. Sufficit

iam: cesset manus tua. Porro ange-
lus domini habebat iuxta aciem omnia
iherusalem: et dedit oculos suos
vidit angelum domini stantem iuxta re-
fugium: et euaginant gladium
in manu eius: et vultum contra iheru-
salem: et occidit tam ipse quam maiore
nam vestit alioque prout iherusalem. Di-
xitque david ad dnm. Nonne ego sum
qui iussi ut numeraretur populus? Ego qui
peccavi: ego qui malum feci. Aliter gratias
quod committitur? Domine deus meus ut
reuerent obsecro manus tua in me: et in
domum patris me: populus autem tuus non
perdat. Angelus autem domini pre-
cepit gab ut diceret david: ut ascende-
ret exiretque: aliter dominus hoc iheru-
salem. Ascendit ergo david
iuxta frequentem gab: qui locutus
fuerat ei nominis dno. Porro omnia
cum superasset et vidisset angelus qua-
tuorque filij eius cum eo: abscondunt
se. Nam eo tempore tectantur et acie re-
uerent. Ignor enim videret david ad
omnem obsequium cum omni exercitu: pro-
cessit ei obviam de acie et adoravit cum pro-
prie in terra. Dixitque ei david. Da mi-
hi locum aciem tuam: ut ediscam in ea al-
tate dno ita ut quantum valeat argenti
accipias: et cesset plaga a populo. Di-
xit autem omnia ad david. Tolle et faciat
dominus: meus rex quod dnm: ei placeat
Sed et honore deo in olocausis et tribu-
las in ligna: et minime in facinorosis:
omnia libera prebebo. Dixitque ei rex da-
uid. Nequaquam ita facies argenti da-
bo quantum valeat. Neque enim tibi au-
feret ultro: sed offeret dno olocausa
gratiam. Dedit ergo david omnia
pro loco sado: aut iherusalem ponde-
ris frequentis: et edificavit ibi altare do-
mino: obuiusque olocausa et pacifica:



POEDOD

o eius. Qui cū
sunt e regione
nnon congre-
erunt ad bellū

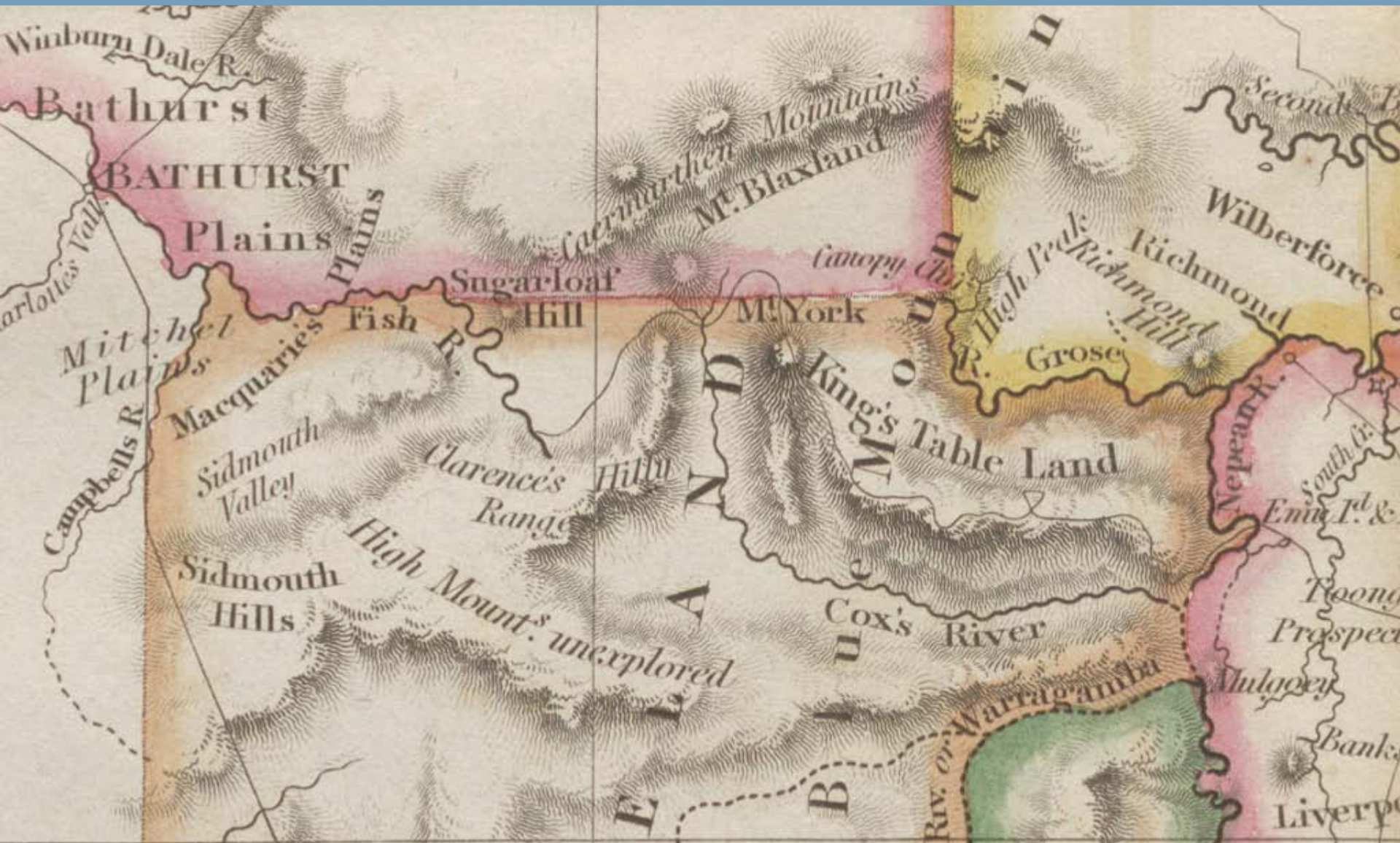
liria auxiliū p
adum e
eo temp
bella proceder





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Blue Bellied Parrot.

Am. Acad. Sci. 1904, 1905



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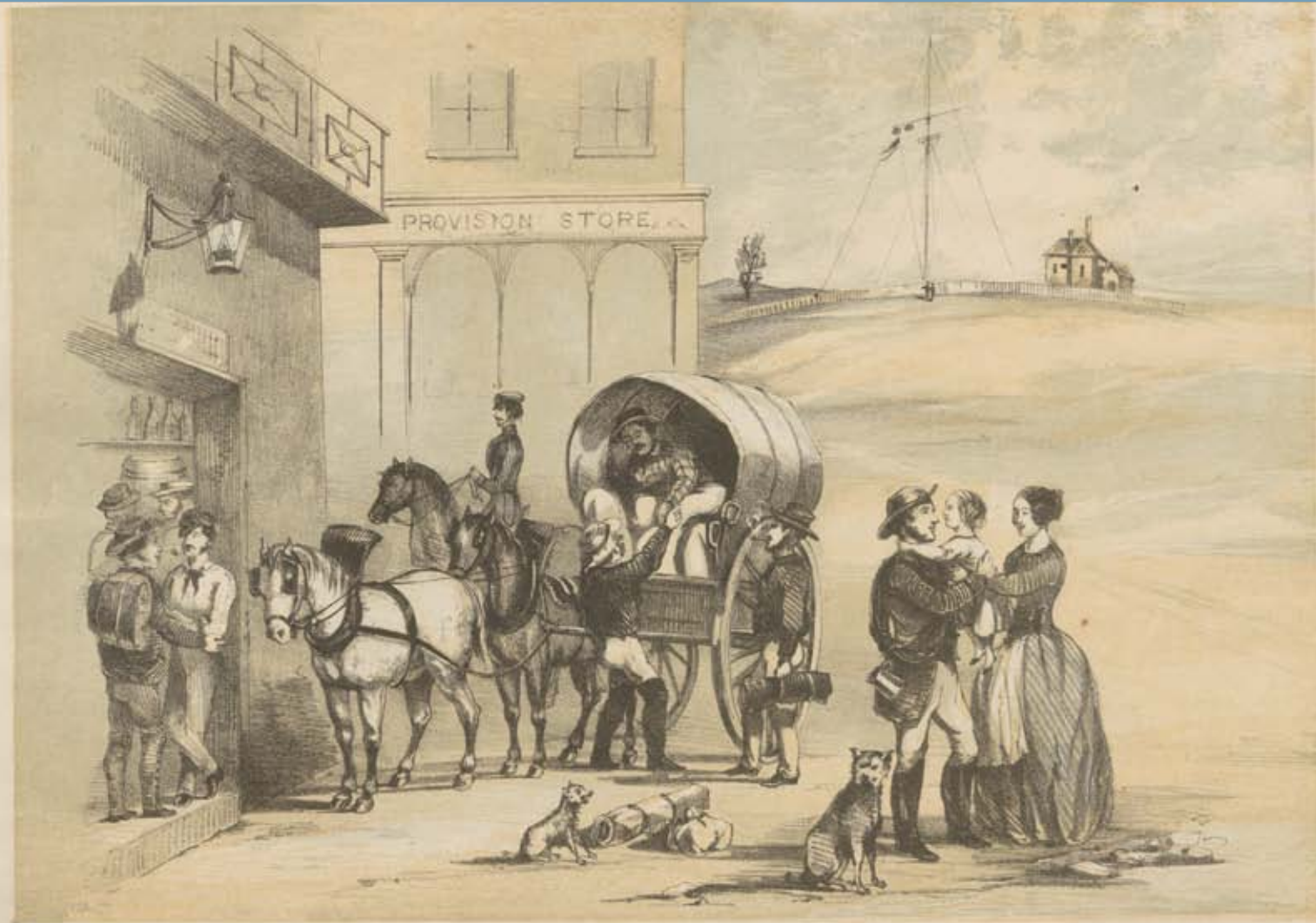


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LITHO & PUBD BY CYRUS MASON MELBOURNE

Off to the Diggings.



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THE EASTERN MARKET

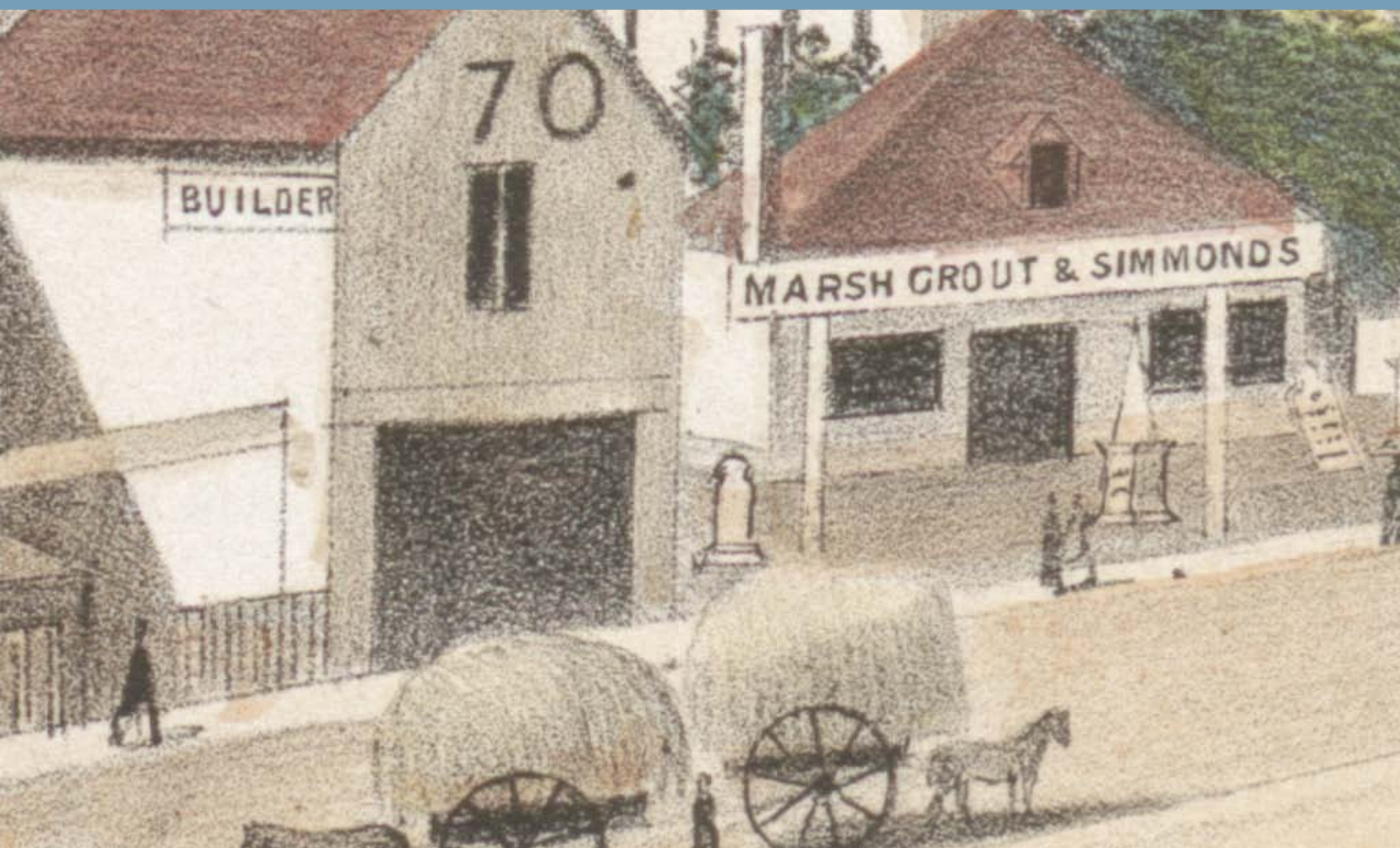
FRONT OF WESTMINSTER TAVERN

Printed and Published by James Trow, Melbourne Road, ST. PAUL'S, Victoria, East.



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capitulum de laudibus
domini

ad genium laudabitur bino
stolam sua et sanguine uue
pallui sui. **D**omine deus
meus in te speravi. **I**uste
deus iudex fortis praecursor te
nigrius in te sperantes munu
miserando fideles **psalmus**

Saluum me fac do
minus qui desat sanctus:
quoniam diminute sunt
ueritates a filiis hominum.

Pana locuti sunt un
quod ad proximum suum:
labia dolosa in corde et
corde locuti sunt. **D**ispre
tat dominus inuicem
labia dolosa: et linguam
magniloquam. **Q**ui
dixerunt linguam not
triam magnificabimus:

labia nostra a nobis sunt
quis enim dominus est
propter misericordiam in
opum et genitum pueri
num: nunc erga dicit
dominus. **P**ona in saluta
ti: fidus aliter agam
in eo. **E**loquia domini
eloquia casta: argenti
igne examinatum: pro
batum ter: repurgatum

septuplum. **I**n domine
seruatus nos et custodi
es nos: a generatione
in generationem. **N**on
autem impij ambulat:
secundum altitudinem
tuam multiplicasti fili
os hominum. **psalmus**

Uisquequo domine
obliscens me i
finem: usquequo alitis
faciem tuam a me. **Q**ua
dum pnam consilia in
anima mea: dolorem in
corde meo per dicit. **U**sque
quo exaltabitur inimicus
meus super me: respice
et gaude me domine deus meus

Illumina oculos meos
nequaquam obdormia in
morte: nequaquam dicat
inimicus meus prei
lui aduersus eum. **Q**ui
tribulant me exultabo
si motus fuero: ego autem
in misericordia tua speravi. **E**x
ultabit cor meum in salu
tati tuo. **C**antabo domino quia
bona tribuit michi: et psal
lam nomini domini altissi
mo. **D**ixit impius in
corde suo: non est de
us. **I**nterupti sunt et ablu

minabiles facti sunt
in anima sua: non est
qui faciat tibi non e
usque ad unum. **D**ominus
de celo prospexit super fili
os hominum: ut uideat
si est intelligens aut re
quiens deum. **O**mnis
delincauit simul in
utiles facti sunt: non e
qui faciat hominem non e
usque ad unum. **S**epulchra
patres est guttur eorum
linguis sunt dolose age
rant: uenerunt aduersum
sub labus eorum. **Q**uor
um maledictione et ama
ritudine plenum est: ue
loces pedes eorum ad ef
fundendum sanguinem.
Contricio et infelicitas
in uis eorum: et uia pias
non cognouerunt non est
timor dei ante oculos
eorum. **N**omine cognoscat
omnes qui operantur
iniquitatem: qui deuo
rant plebem meam sic
etiam paruos. **O**culi non
inuocauerunt: illuc tre
pidauerunt timore: u
bi non erat timor. **Q**ui
dominus in generatione ius

ta est: consilium mo
ris confidisti nouum
dominus ipse eius et
quis dabit ei non sa
lutare israel: cum au
tem tunc dominus captiui
tatem plebis sue. **E**xul
tabit iacob et letabitur:
Domine quis pul
crabit in taler
naculo tuo: aut quis
requiescet in morte suo
tuo. **Q**ui ingreditur si
ne macula: operatur
iustitiam. **Q**ui loquitur
ueritatem in corde suo:
qui non egit dolum in
lingua sua. **N**ec fecit
proximo suo malum: et
obprobrium non accepit
aduersus proximos suos.
Et nichilum deducit
est in conspectu eius
malignus: timentes
autem domini glorificat
Qui iurat proximo suo
et non temptat: qui pecu
niam suam non dedit
ad usuram: et munera
super innocente non acce
pit. **Q**ui facit iuxta non
mouebitur in eternum.
Et pulcherrimi sunt oculi eius

Android: <http://go.unimelb.edu.au/97b>

