ISAPNEWS

The Newsletter of the International Society for Archaeological Prospection
Issue 62, July 2021

Special Edition:
Geoscan Research and You!

Editorial – Issue 62

For me, this is a very special issue of the newsletter, as we are celebrating the contributions that Geoscan Research has made to archaeological geophysics. They announced the end of their instrument manufacture in the last issue. These were the first instruments I was trained on (by Arnold Aspinall and Paul Cheetham – many thanks!) and my first survey was in Scotland where I was relieved that they were indeed made for the British weather. And as you will see from the pictures in ISAPinacotheca, they also operated well in many other places, always startling customs officials on the journey. Once an officer immediately waved me through when I mentioned archaeology: "no money". Well observed.

We start off with a "bycatch": a nifty sports facility found in shallow GPR data. And it is great to read in the second piece that despite the pandemic some new avenues opened up for student training and excavation of Victorian housing remains – right on the university campus. It is amazing how such discoveries, related to more recent history, can grab our attention. Useful for promoting our profession, perhaps?

We would love to also see your results, images or thoughts here: please send them to editor@archprospection.org.

Armin Schmidt
editor@archprospection.org

The Cover Photograph shows a well-trained student with a perfectly vertical FM18/256 at Temple Newsham, UK.

Table of Contents

Membership renewal

If you have not paid your 2021 membership fee yet, you can do this for the price of £10 or €11 for the whole calendar year 2021. Please visit: www.archprospection.org/renew. Due to possible bank charges we would encourage you to pay with PayPal.

Archaeological Prospection journal

Take advantage of the deal offered to ISAP members by Wiley-Blackwell for this journal:
http://www.archprospection.org/wiley

Disclaimer

The views expressed in all articles are of the authors. By publishing the article in ISAP News, the ISAP Management Committee does not endorse them either positively or negatively. Members are encouraged to contact authors directly or to use the isap-all email list to air their views, should they have any comments about any particular article.

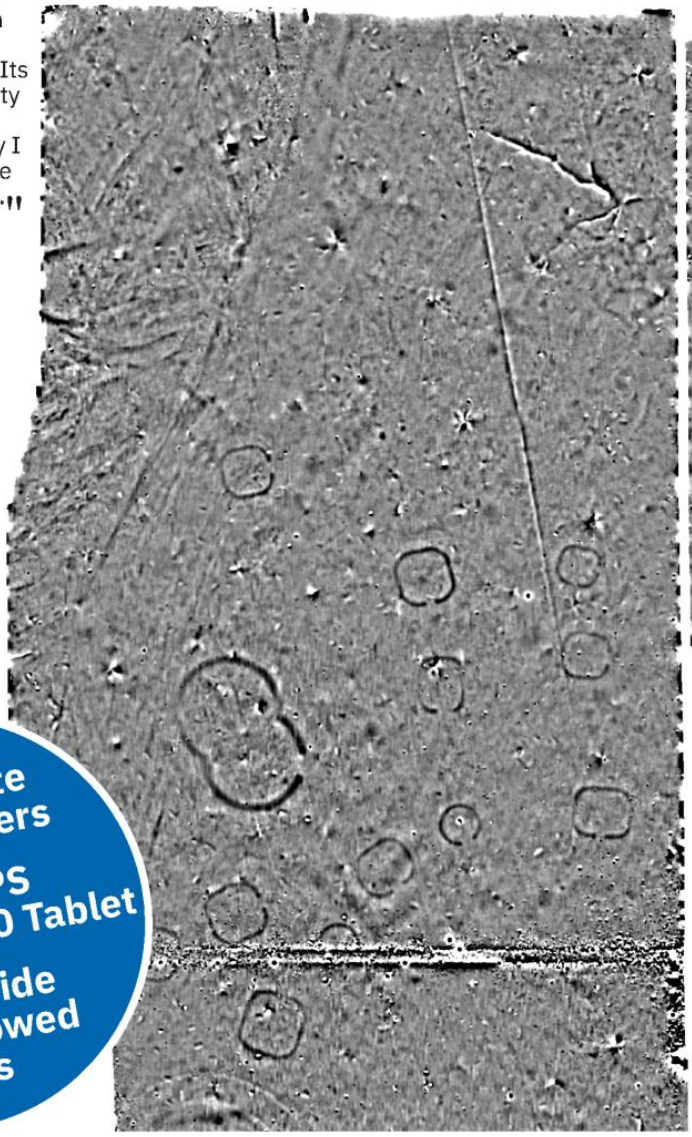
SENSYS®

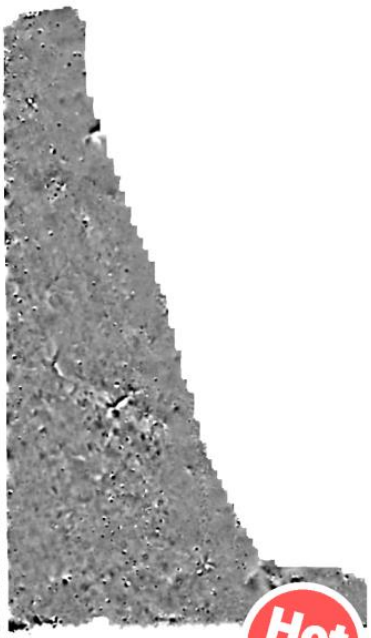
Magnetometers & Survey Solutions

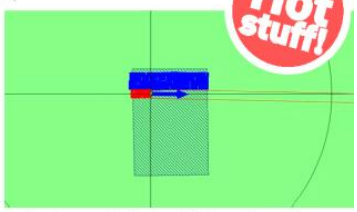
" I'm very impressed with my SENSYS MXPDA magnetometer system. Its ease of use and durability have transformed the scale of the archaeology I do - giving me more time to be an archaeologist. "

JARROD BURKS, PhD
DIRECTOR OF ARCHAEOLOGICAL GEOPHYSICS, OHIO VALLEY

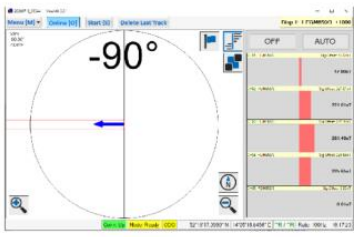
Watch me!







Automated start/stop function



Up to
16 Fluxgate Gradiometers

RTK DGPS
Rugged Win10 Tablet

1-4 m wide push / towed carts

sensysmagnetometer.com | #sensysmag

UK: GNSS Solutions (UK) Limited
Supply and hire of high accuracy positioning & survey systems

Fascinating Bycatch: An Early Lawn Tennis Court at Tecklenburg Castle, Germany

Joris Coolen[1]

[1] LWL-Archäologie für Westfalen; Münster, Germany

joris.coolen@lwl.org

Although it is not unheard of that archaeologists dig at tennis courts (one notable example being the tentative grave of the Anglo-Saxon king Edmund at Bury St Edmunds in Suffolk), tennis courts themselves are not generally considered relevant archaeological sites. The aim of our GPR survey at Tecklenburg Castle was not primarily to search for tennis courts, either. Yet the unexpected discovery of a late 19th century private tennis court at the inner bailey is arguably the survey's most intriguing result (Figure 1).

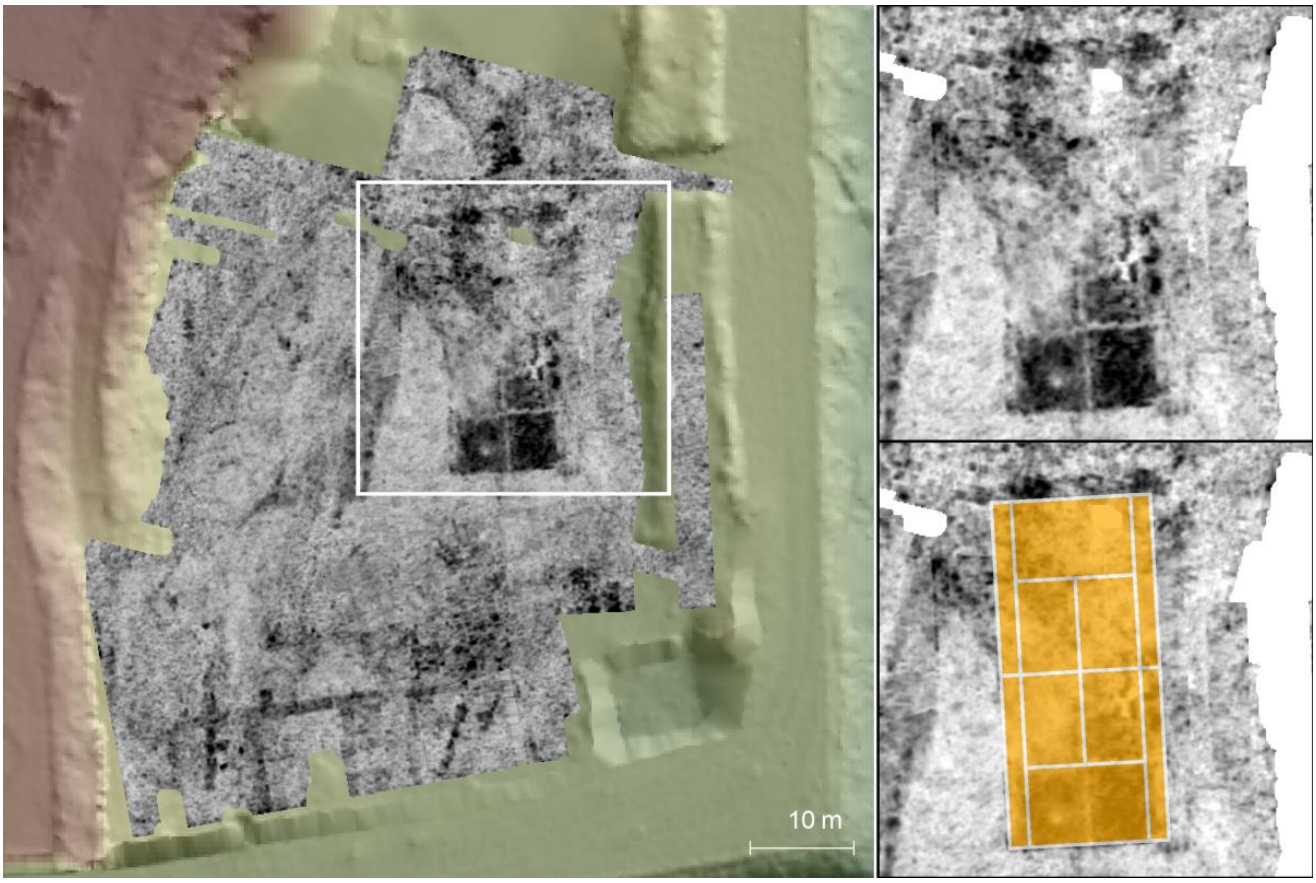


Figure 1: Combined depth slice (approx. 0.30-0.65 m depth) of the GPR survey at the inner bailey of Tecklenburg Castle. Reflective anomalies are displayed in black. The upper inset map shows the tennis court in detail; the overlay in the bottom right image corresponds to the dimensions of a court for doubles matches. Graphics: LWL-Archäologie für Westfalen (Coolen & Becker forthcoming).

This is not least due to contemporary photographs that turned up in the private collection of a descendant of the court's former owner. The earliest photo of the tennis court was taken in 1897 (Figure 2) - only five years after the first German Championships were held in Hamburg (Gillmeister 1997, Wikipedia ND). Thus, the 'modern disturbance' encountered in the GPR survey appears to be one of the oldest tennis courts in the region, and one that tells a fascinating story.

Figure 2: This earliest photograph of the tennis court was taken in 1897. Photo: W. Fisch; collection L. Volkamer.

Since the municipality plans to redevelop the castle area, the archaeology department of the regional association of Westphalia (LWL-Archäologie für Westfalen) carried out an archaeological survey in 2019 and 2020. The main aim of the GPR survey was to identify remains of the castle that lent its name to the picturesque town of Tecklenburg in the Teutoburg Forest, near Osnabrück. The castle was probably built around 1100 AD and home to the Counts of Tecklenburg until the early 18th century, when the county was annexed by the Kingdom of Prussia. By then, the castle was in poor condition.

Plans to convert it into a state-of-the-art fortress were soon abandoned, and most of the castle buildings were demolished and parts of the grounds were auctioned. The ruined castle became the property of the local grocer Dietrich Wilhelm Meese and was bequeathed to Elisabeth Hollmann and her husband, the notary Wilhelm Fisch, around 1880. They had four daughters.

Judging from the photos, the Fischs must have been a cheerful, classy family, who kept up with the times and enjoyed good company. Besides their early passion for lawn tennis, Mr. Fisch took up photography as a hobby as early as the 1890s. His pictures give a fascinating insight into the everyday life of a German upper-class family at the turn of the century.

Tecklenburg experienced a great boom at this time. The modernisation of agriculture and the expansion of the railway network had finally stopped the decline, which the region had seen following the dissolution of the former county in the 18th century, and the demise of the linen trade in the first half of the 19th century. The population was impoverished, and many had emigrated to the Ruhr district or the New World. The railroad not only facilitated transport of coal and ore from the local mines to major industrial centres, but also led to the emergence of tourism in the Teutoburg Forest. In the panoramic pictures that Mr. Fisch took from his garden at the former castle grounds, we can see the Kurhaus Burggraf, a splendid Art Nouveau hotel built in 1901, emerging at the edge of the medieval town. Among the summer visitors who found their way to Tecklenburg was the painter Otto Modersohn. He became acquainted to the Fischs and spent many nights in their salon.

Looking at the pictures of the Fisch family playing tennis and drinking punch with friends at the family's tennis court in the former inner bailey, we get a sense of their joie de vivre (Figure 3).

Figure 3: The Fisch family with friends and fiancées (?) at their tennis court in 1903. Fourth from right and fourth from left, respectively, are Wilhelm Fisch and his wife Elisabeth Hollmann. Photo: W. Fisch, collection L. Volkamer.

Lawn tennis had been introduced in Britain in the 1870s and soon also became tremendously popular among the elite on the European mainland. Rather than a competitive sport, it was still mostly considered a social activity. The popularity was not least due to the fact that mixed teams were accepted from the beginning, offering a welcome opportunity for casual contact between the sexes, and for women to engage in sports; not trivial for a female dominated family like the Fischs.

The tennis court at Tecklenburg Castle appears in the GPR depth slices as a rectangular, strongly reflective anomaly. The tennis court obviously consists of compacted material that clearly differs from the surrounding soil. This shows that the court was not simply laid out on the lawn, as the name implies, but carefully constructed. The southern half of the court seems to be best preserved; here, even some of the lines appear as absorbing linear features (see Figure 1). The dimensions correspond to the official standard for doubles

matches, as it is still used today, i.e. 36 feet (10.97 m) wide and 78 feet (23.77 m) long. A notable deviation from modern courts is the centre service line, which extends across the back court to the baseline. Apparently, this was not unusual in the early days of lawn tennis, as contemporary photos, including the oldest known photograph of a lawn tennis match dated to 1876, demonstrate.

Wilhelm Fisch died in 1909. To pay off debts, his widow sold the former outer bailey to a society that turned it into an open-air stage in 1925. Under pressure from the local community and the Nazi authorities, she felt compelled to sell the inner bailey with the family's tennis court as well in 1936. Whether the court was still in use by then, is unknown. Today, the open-air theatre at Tecklenburg Castle is one of the largest in Germany. The musicals played there attract visitors from near and far every summer. If history had taken a slightly different course, they might as well have been watching a tennis game.

References

Coolen, J. and Becker, D. (forthcoming). Rasentennis auf der Höhenburg: Bodenradarmessungen auf der Burg Tecklenburg. *Archäologie in Westfalen-Lippe 2020*.

Gillmeister, H. (1997). *Tennis: A Cultural History*. London: Cassell Academic/Leicester University Press.

Wikipedia (ND). https://de.wikipedia.org/wiki/Deutsche_Tennisgeschichte (accessed 19 April 2021).

Training students in the Covid period – a road to recovery?

Ben Jennings[1] and Chris Gaffney[1]

[1] School of Archaeological and Forensic Sciences, University of Bradford, UK

c.gaffney@bradford.ac.uk

Introduction

Excavations in the Northern Isles have been the training grounds for many professional field archaeologists from the School of Archaeological and Forensic Sciences, University of Bradford, for over 40 years; they were underpinned by geophysical prospecting undertaken by our teams. The first UK Covid lockdown, in 2020, occurred as we were preparing for our field season in Orkney. Naturally, this 2020 season was cancelled … and so was the 2021 season. For a university that was in the first cohort of CIfA (Chartered Institute for Archaeologists) accredited degree providers this was very disappointing. However, rising to this challenge we created a viable fieldwork experience at short notice within the campus of the university.

Over the years we had used the campus for equipment testing and seasonality experiments, but had not considered using it for a summer field school. However, after some deliberation and a rapid map analysis, we pinpointed an area of some interest on the campus. Potentially, we had terraced housing and a road under an area of grass (Figure 1) from a time before the construction of the university buildings.

Figure 1: Historic (line outlines) and modern maps (colour), with the area of interest indicated by the red circle.

This seemed ideal, and we felt that we could write a Risk Assessment that would enable the safe running of a field school despite the Covid restrictions. In the short period before the excavation we trained the first-year undergraduate students in geophysical prospecting over the area, and were able to return with other students to conduct additional surveys as necessary.

The students were able to gain experience with the following geophysical techniques:

- Earth Resistance (Geoscan – Twin Probe, Double Dipole, Wenner)
- ERT (FlashRES64)
- EM (CMD Mini-Explorer)
- GPR (Mala)
- Magnetometer (Bartington)

The area that we covered was restricted in size (c. 800 m^2), but the results provided good detail about the likely orientation of a road as well as some hints of other buried features (Figure 2).

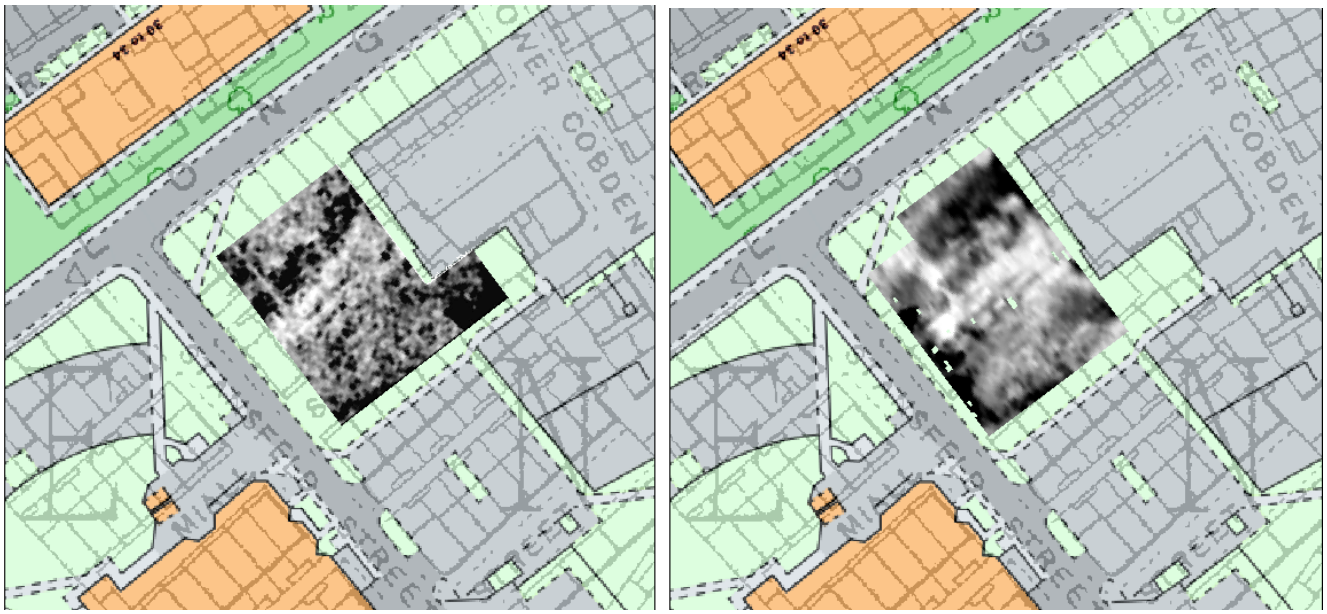


Figure 2: a) Near surface GPR timeslice indicating the line of the road; b) earth resistance data (0.5m twin-probe), showing a road and additional features (±1 standard deviations, black is high).

The excavation strategy was Covid 'aware' in that the students excavated in separate square-metre test pits, which were joined up over time as new test pits were opened. In addition, we undertook other surveys on sites nearby

(Figure 3) to ensure that student numbers on the excavations were always low.

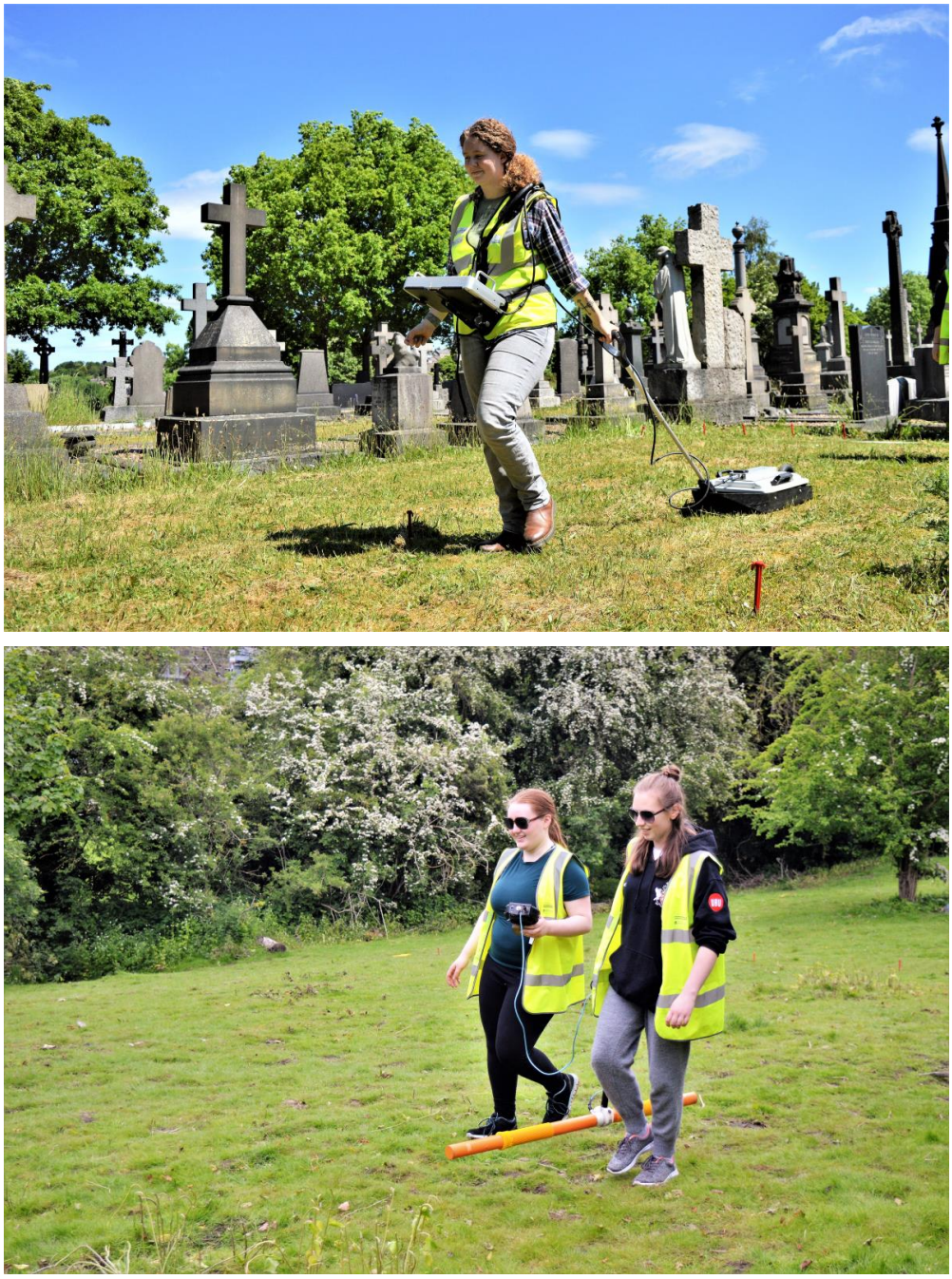


Figure 3: Other sites were also surveyed including a) GPR investigation at Undercliffe Cemetery; b) CMD Mini-Explorer at Hampole Priory.

As the excavation progressed some of the students also had the opportunity to take their first steps in digitally recording the site in 3D (laser scanning, drone imaging, SfM photogrammetry). The site proved to be an excellent training ground, and the fact that the archaeological remains were often very substantial was a benefit to the training.

The students were required to produce a reflective diary on their three weeks of fieldwork, and they listed several benefits of the special arrangements.

Benefits

- Covid safe (no staying away overnight).
- Risk assessments were relatively straight forward.
- Staff were on hand, and we benefitted from experts dropping in (Figure 4).

Figure 4: Mike Langton providing expert advice to new GPR users.

- Students can participate in all aspects of archaeological investigations and recording.
- Post excavation analysis, e.g. x-radiography of metalwork, was able to occur directly during the field school and contributed to the learning activities.
- Seamless research design from concept through prospecting to excavation and output.

- Substantial and recent archaeological remains (Figure 5) allow students to develop identification and excavation skills in a low-risk environment, while following standardised field practice.

Figure 5: Drone orthphoto by Joe Moore, showing the line of the road and features adjacent to it. Whilst the road was made up of substantial stone 'setts' some areas were found to have been robbed, which explains the incomplete nature of the data in Figures 2a & 2b.

- Professional experience by having a variety of experienced staff available.
- Considerable engagement with university staff. This is important at a time when the value of archaeology is being questioned in UK universities. We doubt if a Vice-Chancellor has ever visited one of our excavations prior to this one and the opportunity for the students to talk directly to the VC was beneficial.

Finally, there was an additional positive benefit. Despite the pandemic the activities and our press release fell into a week with little other news. It turned

out that the link to local, recent heritage was of great interest to both regional and national newspapers. Examples of the coverage included:

https://www.dailymail.co.uk/news/article-9668855/Bradford-archaeology-students-unearth-Victorian-cobbled-road-1880s-running-campus.html

https://www.yorkshirepost.co.uk/education/yorkshire-archaeologists-sensationally-discover-new-victorian-site-in-bradford-3268517

Overall, this 'local' field school had many additional benefits, particularly in providing more opportunities for students to capture geophysical data. Also, the benefits of linking geophysical interpretations with excavation data were demonstrated directly as students participated in both activities.

ISAPinacotheca

The ISAP News Gallery

editor@archprospection.org

Introduction

Dear ISAP Members,

As many of you may already know, the well-known manufacturer of archeo-geophysical equipment and software, Geoscan Research, has ceased production of their instruments and sales overseas.

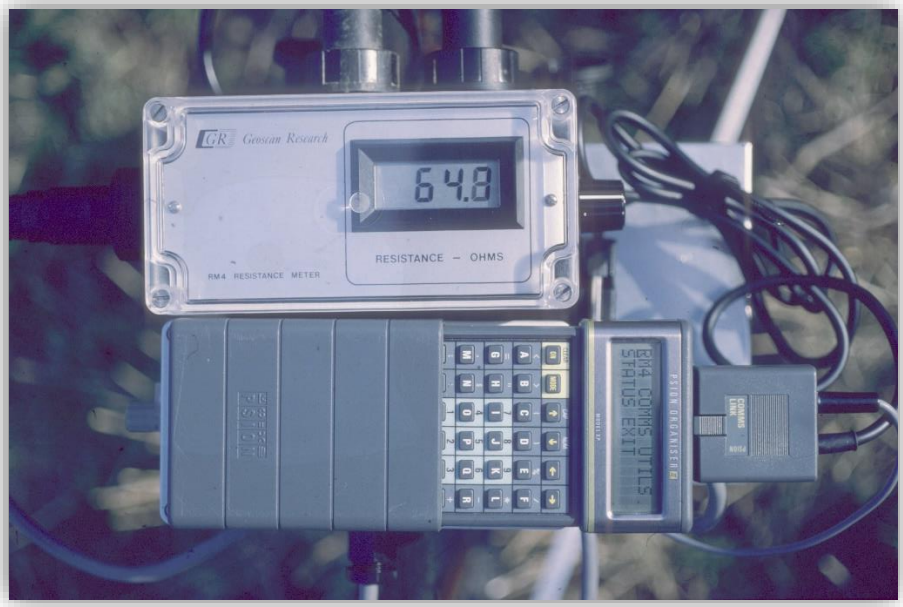
Led by Roger and Kath Walker for many years, Geoscan Research has made a huge contribution to the development of our discipline. It is difficult to count the number of Geoscan instruments that were used on archaeological sites, even more difficult to estimate the number of hectares covered with them.

This Special Issue of ISAPinacotheca is a tribute to Geoscan Research.

Since many of you are currently out in the field, do not hesitate to share some of your own fieldwork pictures on our email list (isap-all@archprospection.org) or Facebook (@archprospection)!

Michał Pisz – ISAPinacotheca Associate Editor

1. **The Beginnings:** *Taken at Cogges Manor, Oxfordshire. Good survey results but using the old Bradphys in wet, long grass was a real Pavlovian nightmare, with 240V and seemingly unlimited current being injected into my body each time I lifted the frame. It's a wonder I continued with geophysics!* – Roger Walker



2. **The Early Years:** *I came across this picture taken in about 1989 when I was again trying to hook up a Psion Organiser, but this time to an RM4. Compared to the 'blind' DL10 logger, the Psion could do lots more visually and I programmed it to auto settle and reject and retake poor contact readings. This is it in use at Swanley Grange above Fountains Abbey (near where the 'new' visitor centre now is) and my assistant is a Mark Newman of the National Trust, who many will remember guided us round Fountains Abbey on our visit after the 12th ICAP conference in Bradford in 2017.* – Paul Cheetham

3. **The Pain:** *I quite liked my old Epson HX20 which, whilst you were surveying a grid, happily made a paper printout of the previous one (after dumping data of course). Data was recorded on small Dictaphone tapes. This was the first version of Geoplot I wrote and only came about because I was due to have two (or was it 4?) wisdom teeth out and, since I would not be able to eat or do much else for a week, I decided to treat myself to the HX20 and write Geoplot to distract me from the pain!* – Roger Walker

4. **The Gain:** *We found the 4-probe array on this res kit was significantly more efficient than the 2-probe array for harvesting turnips.* – Paul Durdin

5. **The Night Owl:** *Rare footage of the RM85 in Night Survey mode*. – Michał Pisz

6. **The Magnetic Star:** FM256 starring in a movie production. – Picture from Tomek Herbich

7. **The Electric Star:** RM15D starring in a movie production – Picture from Chris Gaffney

8. **The Desert Storm:** Geoscan instruments have been surveying all over the world, from deserts... - Picture from Armin Schmidt

9. **The Arctic Fox:** …to Arctic. - Picture from Edward Eastaugh

10. **The Rainfall:** Geoscan instruments have been surveying in all weather conditions. In the Rain… - Picture from Michał Pisz

11. **The Snowfall:** …and in the snow. – Picture from Michał Pisz

12. **Explorer of the Past:** Roger Walker at Fountains Abbey - Picture from Chris Gaffney

13. **Inspiration for Artists:** The fragment of a painting by Aleksandra Fronczak. Surveying a Roman villa site in Bosnia & Herzegovina.

14. **Used by students:** Geoscan Research instruments have been used during numerous field schools and student training. Here in Florida. – Picture from Chris Gaffney

15. **And by Professors:** Vince Gaffney, hopefully wearing anti-puncture shoes! – Picture from Chris Gaffney

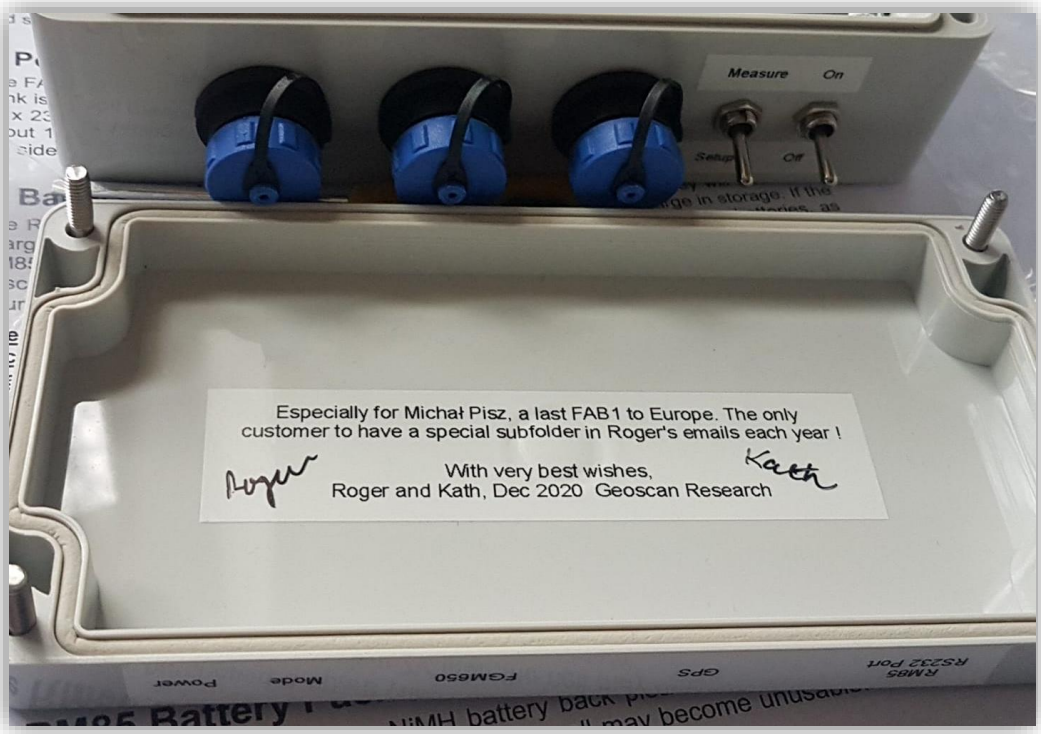
16. **On Foot:** Roger Walker with the double FM256. – Picture from Armin Schmidt

17. **On Donkey:** Magnetic survey in Egypt – Picture from Tomek Herbich

18. **Balancing:** Put on non-magnetic clothes, then find a remote place. – Picture from Armin Schmidt

19. **Data Dumping:** *Data transfer from a Geoscan FM256 in the field*. – most members will have done this at some point – Benny Rieger

20. **Legacy:** Many generations of archaeo-geophysicists have practiced with these instruments. A few more will. – Picture from Chris Gaffney



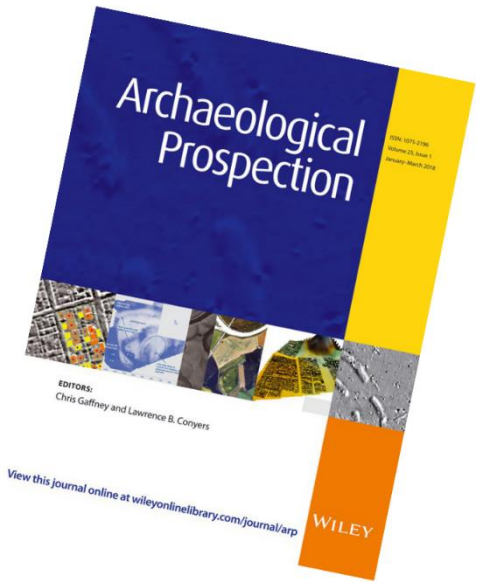
21. **Happy End.** I hope it's not bad, is it?

Many thanks and respect, Roger & Kath! – Picture from Michał Pisz

Journal Notification

Archaeological Prospection 2021: 28(1)

editor@archprospection.org



Magnetic surveys locate Late Bronze Age corrals.

Tatiana Smekalova, Bruce Bevan, Maya Kashuba, Fedor Lisetskii, Alexander Borisov & Natalia Kashirskaya

Depopulation and devastation: using GIS for tracing changes in the archaeological landscape of Kharaib al-Dasht, a Late Islamic fishing village (Kuwait) (Open Access).

Paweł Lech & Piotr Zakrzewski

If the archaeological context is missing: the use of LiDAR prospection to uncover features at the medieval Christian position on Malvecino Hill (Alcalá de Henares, Spain).

Mario Ramírez Galán

Detection of World War II field fortifications using ALS and archival aerial images – German OKH Stellung b1 trenches in the south of the Polish Carpathians.

Witold Jucha, Paweł Franczak & Piotr Sadowski

Participatory mapping and UAV photogrammetry as complementary techniques for landscape archaeology studies: an example from north-western Argentina.

Alina Álvarez Larrain, Catriel Greco & Myriam Tarragó

The social logic of irrigation. Accessibility based approach towards evaluating the water management infrastructure of the archaeological site of Miran.

Kasper Hanus

Frequency domain electromagnetic induction: an efficient method for investigating Fort Ancient village dynamics.

Claiborne D. Sea & Eileen G. Ernenwein

Automatic detection of mud-wall signatures in ground-penetrating radar data.

Pablo Bordón, Patricia Martinelli, Peter Zabala Medina, Néstor Bonomo & Norma Rosa Ratto

Integrating geophysical survey and excavation at the Freston Early Neolithic causewayed enclosure, Suffolk (UK).

Tim Schofield, Tristan Carter, Nathaniel Jackson & Rose Moir

Archaeological Prospection 2021: 28(2)

Marea/Northern Hawwariya in northern Egypt: Integrated results of non-invasive and excavation works.

Tomasz Derda, Mariusz Gwiazda, Krzysztof Misiewicz & Wiesław Małkowski

Ground penetrating radar and electrical resistivity tomography investigations in the southern sector of the Roman Forum: First results on the pre-Augustan phases of the Basilica Julia.

Giuseppe Scardozzi, Tommaso Ismaelli, Giovanni Leucci, Lara De Giorgi, Immacolata Ditaranto, Marco Galli, Carlo Inglese & Marika Griffo

Integrated use of unmanned aerial vehicle photogrammetry and terrestrial laser scanning to support archaeological analysis: The Acropolis of Selinunte case (Sicily, Italy).

Antonio Costanzo, Antonino Pisciotta, Maria Ilaria Pannaccione Apa, Simona Bongiovanni, Patrizia Capizzi, Antonino D'Alessandro, Sergio Falcone, Carmelo La Piana & Raffaele Martorana

The ancient settlement of Piammiano-Statonia (Bomarzo, Italy): New data from 2D and 3D electrical tomography.

Giovanni Leucci, Lara De Giorgi, Immacolata Ditaranto, Ilaria Miccoli & Giuseppe Scardozzi

A modified Mask region-based convolutional neural network approach for the automated detection of archaeological sites on high-resolution light detection and ranging-derived digital elevation models in the North German Lowland (Open Access).

Alexander Bonhage, Mahmoud Eltaher, Thomas Raab, Michael Breuß, Alexandra Raab & Anna Schneider

Potential of deep learning segmentation for the extraction of archaeological features from historical map series (Open Access).

Arnau Garcia-Molsosa, Hector A. Orengo, Dan Lawrence, Graham Philip, Kristen Hopper & Cameron A. Petrie

Geophysical survey at the early Christian complex of Son Peretó (Mallorca, Balearic Islands, Spain).

Catalina Mas Florit, Miguel Ángel Cau Ontiveros, Cornelius Meyer, Roger Sala, Helena Ortiz & Pedro RodrÍguez Simón

The Yığma Tepe of Pergamon: Internal construction of a monumental burial mound from shear wave reflection sounding and wavefield modelling (Open Access).

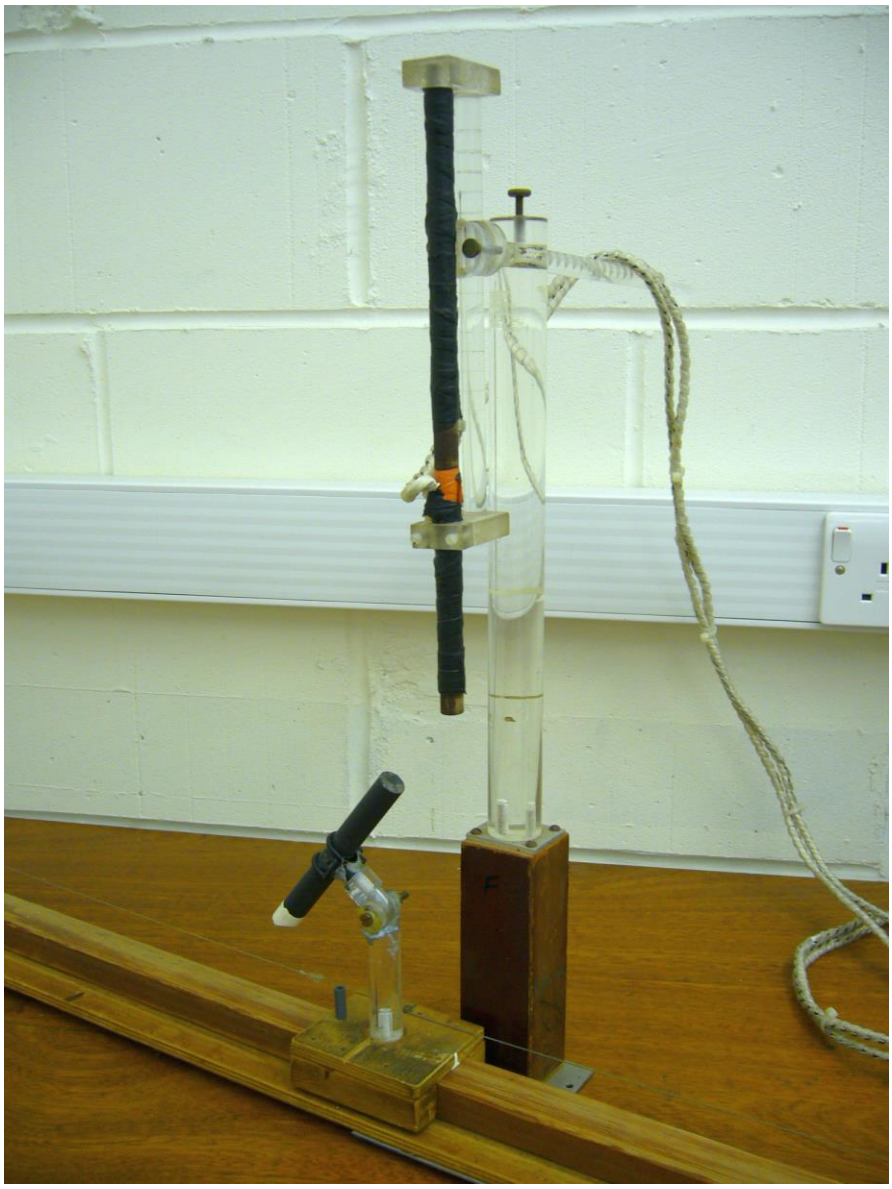
Rebekka Mecking, Matthias Meinecke, Ercan Erkul, Felix Pirson & Wolfgang Rabbel

Integration of 2D/3D ground penetrating radar and electrical resistivity tomography surveys as enhanced imaging of archaeological ruins: A case study in San El-Hager (Tanis) site, northeastern Nile Delta, Egypt.

Ahmed Gaber, Khaled S. Gemail, Adel Kamel, Hafsa M. Atia & Amin Ibrahim

Your Newsletter Needs You!

"things that cannot be published elsewhere"



© Armin Schmidt 2021

Please send
survey reports (ca. 700-1000 words, some images),
interesting or funny images (with a short caption),
opinion pieces, cover photographs or notifications
to the editors:
editor@archprospection.org
(we will even do the formatting for you!)