

Archaeology of Conflicts

edited by
Pavel Drnovský – Petr Hejhal

Kniha je vydána v rámci dotace Ediční rady FF UHK pro rok 2020

The book is published as part of a grant from the Editorial Board
of the Faculty of Arts, University of Hradec Králové for 2020

Published by Pavel Mervart Publishing,
P. O. Box 5, 549 41 Červený Kostelec,
2020

Translation Jana Kličová, Urszula Baron

Printed H.R.G., spol. s r. o.

www.pavelmervart.cz

Reviewed:

prof. PhDr. Václav Matoušek, CSc.

Mgr. Petr Žákovský, Ph.D.

© Univerzita Hradec Králové, 2020

© Miloš Bordáč, Pavel Drnovský, Eduard Droberjar, Martin Gojda, Aneta Gołębiowska-Tobiasz,
Petr Hejhal, Jiří Hofman, Matouš Holas, Jiří Juchelka, Balázs Komoróczy, Sławomir Konik,
Martin Krůl, Radosław Liwoch, Łukasz Miechowicz, Klára Andresová Skoupá, Piotr Strzyż,
Pavol Šteiner, Marek Vlach, 2020

© Pavel Mervart 2020

ISBN 978-80-7465-469-5

Content

Introduction	9
Remarks on the possibilities of studying armed conflicts between the Romans and Germans during the Marcomannic Wars in Moravia	
<i>Eduard Droberjar – Balázs Komoróczy – Marek Vlach</i>	11
Medieval fortification systems in the form of linear embankments in present-day Poland	
<i>Łukasz Miechowicz</i>	27
Weapon imports in the burials of the Polovtsian elites in the Black Sea – Caspian Steppe	
<i>Aneta Gołębiowska-Tobiasz</i>	41
The Mongols in Poland in the 13th century. Traces of the Invasions	
<i>Radosław Liwoch</i>	55
The use of firearms in siege operations in medieval Poland. New discoveries and interpretations	
<i>Piotr Strzyż</i>	69
How to build a redoubt? Instructions from military manuals of the Thirty Years' War	
<i>Klára Andresová Skoupá</i>	83
The forms of defence of the Silesian-Hungarian border and their development in the Early Modern Period	
<i>Martin Krůl</i>	99
Eighteenth-century military camps in the light of written sources	
<i>Jiří Hofman</i>	115
The Austro-Prussian Wars in the territory of East Bohemia and their reflection in archaeological sources	
<i>Pavel Drnovský – Petr Hejhal – Matouš Holas</i>	123
Austrian military camp on the battlefield at Wagram in the light of archaeological sources	
<i>Ślawomir Konik</i>	133
Identification of components of the 1813 fortification line in the Lower Ohře Valley through aerial landscape survey	
<i>Martin Gojda</i>	149
Second phase of non-destructive archaeological survey of field fortification features in the neighbourhood of the Smolkov Artillery Fort	
<i>Jiří Juchelka</i>	171
Historical and archaeological evidence of a crashed American B-24 Liberator bomber near Trenčín	
<i>Miloš Bordáč</i>	195
Possibilities of archaeological research on the World War II battlefields in Slovakia 205	
<i>Pavol Šteiner</i>	207
Conclusions	223

Historical and archaeological evidence of a crashed American B-24 Liberator bomber near Trenčín

Miloš Bordáč

It has been a long time since the contemporary modern archaeology got rid of former dogmatic ideas of something like an imaginary border, which chronologically delimited its research interest. Attention is therefore currently also paid to relics from the most recent periods, i.e. from the 1st half of the 20th century – namely from the armed conflicts such as World War I and II. Like any other intensive human activity, these conflicts also left indelible traces in time and space, which are available to us in the form of archaeological finds.

This trend is also reflected in the amended Slovak legislation, which defines that the sphere of archaeological research also comprises „...*military material found in the earth, on the earth's surface or under water and dating from before 1946*” (Act No. 49/2002 Coll. on the protection of monuments and historic sites). However, the above formulations so far mainly apply *de iure* rather than *de facto* – this means that the research on modern military conflicts in Slovakia still represents an isolated phenomenon. It is only in recent years that Slovak institutions gradually follow the trend from abroad and register also modern military relics, which occur in many forms and versions. Some examples were also cited in my diploma thesis (Bordáč 2017). One of these forms of modern militaria, which can be found within the scope of archaeological research, is military machinery.

Military machinery as archaeological source

Military machinery does not count among standard sources in archaeology of modern militaria, on the contrary, these finds are rather unique. For this reason, any “scientific” research on this topic is as good as completely absent and the occasional finds, or even their processing, are in most cases made by enthusiasts and non-professionals. One of the most attractive components of this type of sources probably are the aircraft crash or shoot-down sites, which instigate research in the sphere of so-called aviation archaeology and are therefore paid considerable attention (Internet source 1). Despite a relatively detailed processing of finds, this activity cannot be definitely classified as proper archaeological research.

Individual isolated examples of regular field research on aircraft crash sites are represented by the exploration of the shoot-down site of a German Focke-Wulf Fw 190 fighter aircraft near the municipality of Nynice (Plzeň – north District) in 2009. The aim of the research was to find out the damages caused by amateur excavations, but mainly to attempt to identify the pilot who died in the accident. The detected finds (parts of fuselage with preserved camouflage paint, engine production labels, on-board ammunition, etc.) unfortunately only led to the conclusion that the crashed aircraft

had a standard armament and usual fuselage colouring. The authors of the research ascribe the absence of a higher amount of artefacts to illegal digs, which were also stratigraphically recorded in sections of individual excavation trenches (Rak 2013, 124–125).

Another, more recent, example of such research is the exploration of the crash site of a shot-down American Boeing B-17 G bomber near the municipality of Černíkovice (Rychnov nad Kněžnou District), which was conducted in 2016. Exactly like in the previously mentioned case, here also an accurate archaeological methodology has been used to detect and document unique find contexts, but at the same time also their damage caused by illegal digs (Internet source 2). These findings thus show that the threat to the given relics (caused above all by illegal activity) is an evident problem and the archaeological community should respond to it by increasing the interest in properly conducted field research in this sphere.

The above-mentioned examples from abroad indicate certain evolving trend. However, the “aviation archaeology” in Slovakia lags behind and the only partly archaeologically documented actions of this kind might be the former activities of the Slovak Society for Aviation History in Bratislava. This society, led by Mgr. Peter Ušiak, conducted multiple excavations of the World War II Allied aircraft crash sites in the 1980s and 1990s. Research was made, for example, on the American fighters P-38 *Lightning* in Hruboňovo and P-51 B *Mustang* in Borinka, on the American Boeing B-17 *Flying Fortress* bomber in Hronský Beňadik, or on the Soviet Ilyushin Il-2 *Shturmovik* fighter aircraft in Čierna nad Tisou. Some of these excavations also detected the remains of pilots, who were subsequently buried in piety (Kubašský 1998, 12–13). The above facts give a clear evidence that this type of research also has its local potential, although it is only little exploited so far.

Position of historical sources in the presented research

It is mainly the non-professional community who believes that archaeology is primarily working with sources, in which no relevant historical records are known. In other words, people believe that the aim of archaeological research is to acquire new knowledge rather than to verify previous detections. However, this statement cannot be fully agreed with, because archaeology of military conflicts finds an invaluable support in the study of historical sources. The two disciplines complement one another – while historical records provide for abstract data, archaeology adds the appropriate material evidence. In this way it also copes with the frequent problems of relevant historical data, namely their absence, generalisation or subjectivity.

As regards the historical data which are available for the purposes of aviation archaeology, we highly appreciate the work *Konečná zastávka: Slovensko!* (Terminal station: Slovakia!) by P. Kaššák and M. Hrodegh (2007). The authors followed up the fates of Allied aircraft which were shot down above the territory of the Slovak State in 1944–1945. The work thus offers a detailed compendium of sources regarding 70 military planes, including their crash sites. Although the authors often treated the problem only from a historical perspective, the register of sites represents a sort of catalogue which can be also used for archaeological research. The presented paper is dealing with one of these sites on the cadastral border between the municipalities of Omšenie and Trenčianske Teplice (Trenčín District). An American Consolidated B-24 *Liberator* bomber crashed down in this area after being attacked by German air combat fighters on 17 December 1944.

An in-depth study of the event enables to reconstruct from a historical perspective the fate of the above-mentioned aircraft on the given particular day. It belonged to a squadron of 31 fighters, which took off from the base in Bari, South Italy, on the given day (17 December 1944). The squadron was ordered to bombard a fuel refinery in the town of Odertal (modern Zdzieszowice; South Poland). However, only 15 out of the total number of 31 aircraft accomplished this planned task. From the

remaining 16 planes, 9 were shot down, 6 had to return to the base due to technical problems and 1 aircraft was forced to land at sea off the Yugoslav coast and then went under. The aim of the presented contribution is a synthesis of historical and subsequently also archaeological evidence regarding one of the 9 shot-down crashed aircraft.

While approaching the flight destination, above the north-western part of the territory of former Slovak State, the plane suffered a fault with one of the engine turbochargers and became detached from the formation. This made the plane vulnerable and soon it came under fire from three German Fw-190 fighters, which probably took off from the Trenčín airport to hunt the isolated aircraft. The plane was heavily damaged by this attack and one of the air gunners on board was killed. However, the remaining members of the original 10-man crew successfully left the uncontrollable aircraft. Some moments later, the plane then crashed into the forested area on the cadastral border between the municipalities of Omšenie and Trenčianske Teplice (Kaššák – Hrodegh 2007, 168–173; Internet source 3).

Since 9 out of the original 10 crew members have survived not only the plane shoot-down, but also the subsequent enemy captivity and the end of the World War II, the particular events were relatively exactly reconstructed on the basis of memories of immediate participants and on the basis of German records from the garrison in Trenčín. The study of historical evidence even helped to resolve a discrepancy in the original military records of the Allied Aircraft, where the given plane is mentioned under two different call names: *Paulette* and *Ten-Men-Bak*. However, in both cases the same aircraft serial number is reported: 42-51324. The existence of two different planes with the same number is impossible. This problem was solved by personal testimony of the chief mechanic who visited Slovakia in 2000, 56 years after the plane crash. *Paulette* was the original call name of the aircraft, which changed after a new crew came on board, i.e. all crew members responsible for operation of this aircraft were replaced. The new crew renamed the plane to *Ten-Men-Bak* (i.e. “ten men back” spelled phonetically) only 18 days before their first and last action (Kaššák – Hrodegh 2007, 172–173). It is a sad irony of fate that the optimism and hope, which were contained in the name, ended in nothing already during this first action.

The study of historical records can thus resolve possible historical discrepancies. Another temporal and spatial questions regarding the crash site itself can be only answered by archaeology.

Localisation, survey and excavation of the aircraft crash site

An event like the shoot-down and crash of the studied aircraft undoubtedly became inscribed in the memory of people who lived in the surrounding villages at that time. However, at the time of origin of this article it was more than 76 years since the event has taken place, so the majority of eyewitnesses already passed away. It is probably also for this reason that the texts dealing with the given problem contain inconsistent data on the crash site of the Allied bomber.

The most frequently mentioned localisation is the cadastral border between the municipalities of Trenčianske Teplice and Omšenie, more precisely the location Baračka (Kaššák – Hrodegh 2007, 169). The cadastre allotment changed several times in the past and this location belonged alternately to one or the other municipality. Nowadays, Baračka represents a dislocated, partly built-up municipal district of Omšenie. Some other sources, on the other hand, mention the uninhabited and forested location Kamenica (Malo 2015, 8), or even the natural rock formation Kamenné vráta (Internet source 4). All of the above-mentioned sites are situated relatively close to one another, but the exploration of an area of several square kilometres in total was logically impossible for capacity reasons. Nevertheless, the survey made use of a commemorative monument which was erected at Baračka in the neighbourhood of local waterworks in 1994.

Excavations in the area of the waterworks are not allowed for hygienic reasons (the area is at the same time a fenced, private plot) and the attention was therefore focused on a forested slope at a distance of about 300–400 m to the northeast of this facility. I already made a surface collecting at this place in 2016 within the primary survey and fieldwalking. However, this survey has yielded only some small aluminium fragments, which were cited in my diploma thesis (Bordáč 2017, 27). The survey in April 2019, which is described in this article, has already employed exact methodology using non-destructive methods and metal detector survey. The result was the planimetric GPS localisation of the supposed largest concentration of wreckage, excavation of 35 finds and the first enlisting of the site in the Central Register of Archaeological sites in Slovakia (Bordáč 2019). The methods and individual finds are described in more detail in the following text.

Methods

The research methodology at the beginning included a primary survey of the site with the help of a metal detector in linear transects, without any intrusion of the ground surface. The aim of this activity was to find places with the highest number of detected signals, i.e. places with the most distinct underground concentrations of finds. The terrain erosion and a thick humus layer of dead vegetation on the surface do not allow to capture any other traces of former epicentre of the crash (in the form of terrain depressions etc.). Subsequently, in the area with the highest concentration of signals, a square with the side length of 20 m was marked out and localised by GPS and all finds detected within this square were completely excavated. Since the process leading to the distribution of finds in their terrain context was purely accidental (plane crash and explosions), from the methodical point of view it was not necessary to localise each of the finds separately.

All of the finds were usually situated immediately below the humus soil layer, i.e. at the depth of about 10–15 cm, maybe on the then ground surface. However, the presumed burnt soil, as a result of fire and explosions, was not detected. The acquired collection of 35 objects can be divided into constituent parts of the aircraft, components of its armament and equipment of the crew.

Collection of finds

Major part of the collection of finds consisted of unspecified wreckage of the aircraft's fuselage, heavily damaged by fire and corrosion. However, in some of these fragments we can observe construction elements such as riveting, screws or weld joints (Fig. 4; Fig. 5 A) and in one piece we can also see residues of the original paint (Fig. 5: C). Other mechanical parts of the aircraft were represented by tubes or cabling covers (Fig. 3; Fig. 5: B) which were found in association with organic fabric straps.

The most interesting finds in the collection are undoubtedly represented by a massive cartridge case and a projectile (Fig. 1) from the on-board Browning machine gun, a double pole switch from the pilot's cockpit (Fig. 2) and steel plates from a protective vest of air gunners, the so-called flak jacket (Fig. 6).

The last mentioned finds can be described here in more detail due to their specifics. The first one is the find of a massive brass cartridge case and a 12.7 mm calibre projectile (also referred to as calibre 0,50 BMG) from an on-board Browning machine gun (Fig. 1). The body of the cartridge case is still embraced by a steel member of the cartridge belt. The bottom of the cartridge case is distinctly marked with "DM 4", which identifies it as a 1944 product of the American arms factory Des Moines Ordnance Plant in Ankeny, Iowa (Internet source 5). The primer was evidently activated, so the on-board machine



Fig. 1. Marked cartridge case and projectile from a cal. 12.7 mm Browning machine gun.



Fig. 2. Double pole switch from the cockpit, bearing a preserved marking with a patent number.



Fig. 3. Finds of air tubes, one of them with preserved marking “28” and remnant of an organic strap.

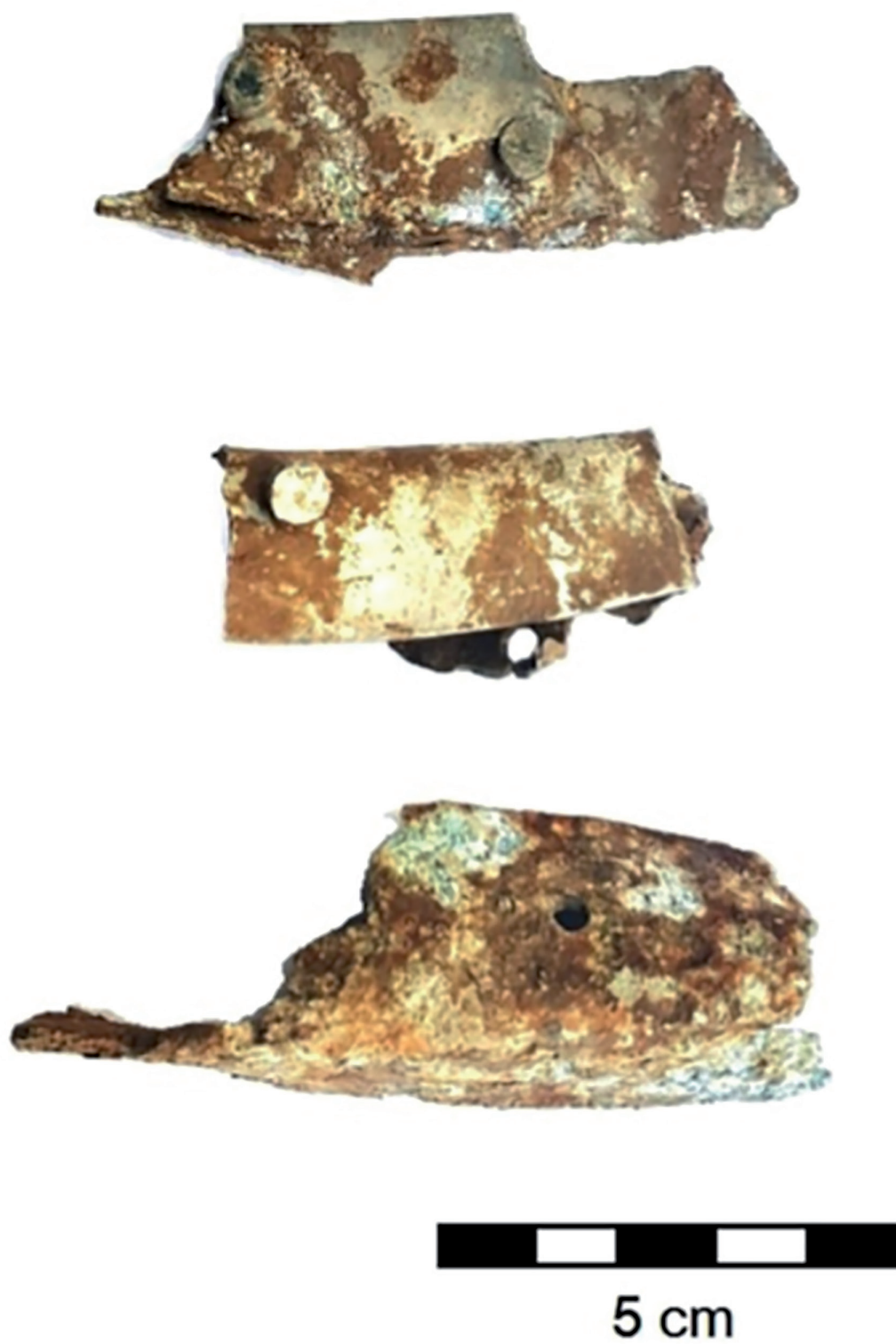


Fig. 4. Large fragments of fuselage with preserved rivet joints.



Fig. 5. Selection of finds. A: Steel construction fragments; B: Fragments of aluminium tubes; C: Fragment with preserved paint residues.



Fig. 6. Steel plates, originally sewn inside a protective vest of air gunners, the so-called flak jacket.

gun must have shot before the crash, probably at the attacking German fighter aircraft. The projectile thus logically cannot come from the same cartridge case.

The second remarkable find is a double pole switch from the pilot's cockpit (Fig. 2). Together with an aluminium tube marked with number "28" (Fig. 3) it represents one of the two finds with preserved marking. The bottom part of the switch bears a still visible inscription "U.S.A. PATENT NO. 1605910". Comparing this number on the website of the United States Patent and Trademark Office, we can identify particular type of the applied mechanism along with its technical drawings, authorship and patent application date (Internet source 6). It was mounted in the plane, as one of many components, during its assembly in the Consolidated Aircraft plant in San Diego, California. Archaeology is only rarely able to acquire such specific information. It is an evidence that this research is also important for the chronologically adjacent periods of interest within the 20th century.

The last remarkable finds are three square steel plates with the side length of about 6 cm and thickness of 1–2 mm (Fig. 6). They do not represent mechanical parts of the aircraft, but components of the crew's equipment. The plates are elements of the so-called flak jacket, a vest protecting the gunners in open firing positions in the rear part of the fuselage from being injured by shrapnel. The vest consisted of several layers of fabric with these steel plates sewn densely in between. We can only speculate whether they were part of the equipment of the only crash victim, the air gunner, corporal Roland W. Morin. According to preserved historical reports, German soldiers have taken his remains away from the burning wreckage immediately after the crash and transported them to Trenčín to be buried (Kaššák – Hrodegh 2007, 169–170). However, the enemy corps did not search through the wreckage due to threat of ammunition explosions and fire, so that all of the on-board inventory and crew equipment were left unnoticed.

Conclusions

The primary aim of the presented contribution was the survey of the crash site of an American Consolidated B-24 Liberator bomber, which was shot down during an air combat above the territory of former Slovak State on 17 December 1944. Some discrepancies were already eliminated before the field research by exploiting, comparing and studying the available historical sources. The subsequent employment of non-destructive archaeological methods (e.g. fieldwalking, planimetric GPS localisation and surface collecting) and metal detector survey has yielded results in the form of material finds and relevant data which can be further studied and combined. The final output is a complex set of data, which are briefly presented in this article.

Another important aim of the paper was the effort to demonstrate the possibilities of archaeology of modern militaria in Slovakia, which has distinctly stagnated in comparison with the situation abroad. A gradual positive change in this regard can be followed up only in recent years. The presented research is therefore an evidence that archaeology of the 20th century military conflicts is justifiable and its results are equally valuable as in archaeology of any other period of time. Since the World War II, as an extraordinarily intensive event, distinctly affected the territory of Europe, it is beyond any doubt that the number of relevant sites for archaeology of conflicts will increase in the course of further research.

References

- Bordáč, M. 2017: Možnosti výskumu moderných militárií. Diplomová práca. Univerzita Konštantína Filozofa v Nitre. Nitra.
- Bordáč, M. 2019: Nepublikovaná nálezová správa č. P-02/2019. Univerzita Konštantína Filozofa v Nitre. Nitra.
- Kaššák, P. – Hrodegh, M. 2007: Konečná zastávka: Slovensko! Martin.
- Kubašský, P. 1998: Sedem objavov Petra Ušiaka. Obrana 12, 12–13.
- Malo, M. 2015: Sviečky horeli tento rok aj v Kamenici. Omšenské noviny 2/2015, No. XXI, 8.
- Rak, M. 2013: Archeologie konfliktů 20. století. In: P. Vařeka (ed.), Archeologie 19. a 20. století: přístupy – metody – témata. Plzeň, 115–136.
- NÁRODNÁ RADA SLOVENSKEJ REPUBLIKY: Zákon o ochrane pamiatkového fondu č. 49/2002 Z. z. v znení neskorších predpisov. Bratislava: Zbierka zákonov Slovenskej republiky, 19. 12. 2001, 1782–1799.
- Internet source 1: <http://www.leteckabadatelna.cz/havarie-a-sestrely/>
- Internet source 2: <http://www.arup.cas.cz/?p=28882#more-28882>
- Internet source 3: <https://spravy.pravda.sk/regiony/clanok/447727-americki-letci-v-obci-omsenie-nezostali-zabudnuti/>
- Internet source 4: <https://www.turistika.cz/vylety/vylet-okolim-mesta-nova-dubnica/detail>
- Internet source 5: <http://www.nebraskaaircrash.com/50caliber.html>
- Internet source 6: <https://pdfpiw.uspto.gov/.piw?docid=01605910&SectionNum=2&IDKey=D0BD432A9A42&HomeUrl=http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1%2526Sect2=HITOFF%2526d=PALL%2526p=1%2526u=%25252Fnetahtml%25252FPTO%25252Fsrchnum.htm%2526r=1%2526f=G%2526l=50%2526s1=1605910.PN.%2526OS=PN/1605910%2526RS=PN/1605910>

Miloš Bordáč

Katedra archeológie, Filozofická fakulta Univerzity Konštantína Filozofa v Nitre

Hodžova 1

949 01, Nitra

milos.bordac@gmail.com