



Preliminary results of the archaeological investigations of the Käpa forest brothers bunker in the border zone of Harju and Järva Counties

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INTRODUCTION

From June 2023 to October 2024 archaeological investigations were carried out in the well-preserved bunker of the so-called forest brothers (mid-20th century civilians hiding from Soviet authorities and members of loosely organised resistance movement) located in the border zone of Harju and Järva Counties, near Lake Käpa (Fig. 1). Since 2021, numerous field trips for archaeological studies have been taken place in that specific area, intending to map the traces of the forest brothers who operated there (Kiudsoo 2025). Käpa bunker was discovered in the spring of 2022 (Fig. 2) when we checked an anomaly which appeared on the relief map of the Estonian Land and Spatial Development Board. The initial plan was to carry out preliminary research at the location; however, the discovery of human remains necessitated an expansion of the investigation's scope to encompass the entirety of the perimeter. Comprehensive investigations were initiated to obtain additional information for the criminal case no. 02913000041 concerning systematic attacks of the Soviet regime against the civilian population in Estonia from 1944 to 1978 with the aim of suppressing resistance to the occupation authorities. According to both Estonian and international law, forest brothers were civilians whose killing is a crime against humanity (see KAPO Ar 2000, 26–32, ECtHR 14685/04). The present paper gives the initial overview of the work, including analysis of the human skeletal remains by archaeo-osteologist Martin Malve.



Fig. 1. The external dimensions of the Käpa bunker, including the vertical entrance shaft, are shown, also the assumed roof pitch, the central support post, and other construction elements are marked with numbers. 1 – entrance, 2 – stove, 3 – firewood, 4 – well, 5 – piggin, 6 – shelves, 7 – sleeping platform, 8 – window, 9 – lookout tree.

Jn 1. Punkri välised gabariidid, koos vertikaalse sissepääsušahliga on markeeritud, nagu ka oletatav katuse kaldenurk, keskne tugipost jt ehitise osad. 1 – sissekäik, 2 – ahi, 3 – küttepuud, 4 – kaev, 5 – kibu, 6 – riulid, 7 – magamislaevats, 8 – aken, 9 – vaatluspuu.

Drone photo / Droonifoto: Eke Maru Grossschmidt

THE SITE

The Käpa bunker was a one-man underground refuge, measuring just over four square metres. The skilfully hidden construction could be accessed through a vertical shaft (Fig. 1: 1) protruding from the main room, the top of which was covered by a hatch. In winter, it was crucial not to leave any tell-tale traces outside the bunker; hence the entrance shaft was dug deeper than the bunker's floor, forming a pit that served as a disposal area for ashes from the stove. Opposite the entrance was a stove with a sheet iron body (bottom dimensions: 45 × 42 cm; height: 60 cm) (Fig. 1: 2), lined with bricks on the inside. The chimney barely extended above ground level, so an additional pipe (approximately 1 metre) was fitted on top of it during heating. The space between the stove and the northern wall of the bunker was used for drying and storing firewood (Fig. 1: 3).

The first item discovered during the preliminary research of the Käpa bunker was an iron milk container, likely used for storing clean water. Behind the southern side of the stove, there was a ca. 90 cm deep narrow well (Fig. 1: 4). On the left side of the entrance, clear traces of a wooden water pail, a piggin (e.g., Viires 1995, 65), reinforced with iron rods were discovered, likely used for washing and personal hygiene. Availability of water was vitally

important for the forest brothers. The most difficult season for forest brothers was winter, when snow forced the men and women to stay put in their bunkers for extended periods of time. Thus, the supply of clean drinking water was an equally important consideration alongside security when building a bunker for the winter (Kaasik *et al.* 2021, 71).

In winter time, when opportunities for moving about were almost non-existent, the forest brothers engaged in crafts to pass the time. Tools and raw materials have been found in all archaeologically studied bunkers. Based on the variety of findings from Käpa, it can be inferred that the bunker's occupant practised various crafts and wood-working, as indicated by pieces of leather, sheet metal and cloth (raw materials), along with tools: chisels, a saw, a sharpener, etc. Additionally, more than half a dozen cups of tree pitch were identified, placed on the shelves alongside other objects and tools. The shelves (Fig. 1: 6) were located on the north side of the bunker and on both sides of the sleeping platform (Fig. 1: 7). A small suitcase, pencils and some candles were also among the items found on the shelves (Fig. 3).



Fig. 2. Käpa bunker on 14 May 2022. View from the west.

Jn 2. Käpa punker 14.05.2022. Vaade läänest.

Photo / Foto: Mauri Kiudsoo



Fig. 3. Candles, remains of a suitcase, a chisel, etc.

Jn 3. Kütünlad, kohvri jäänused, peitel jne.

Photo / Foto: Mauri Kiudsoo



Fig. 4. A pocket for hygiene items.

Jn 4. Hügieenitarvete tasku.

Photo / Foto: Mauri Kiudsoo

The underground structure was unique compared to others because of the double-glazed vertical window (Fig. 1: 8) located at the top of the southern wall (width approx. 50 cm; height approx. 20 cm). Under the window, we identified the remains of a sleeping platform with a body on top, lying on his left side. A pouch for hygiene items, made from a pre-war wallet, was found near the arms (Fig. 4). At the time of discovery, only a razor and a comb were in it; the remaining toiletries, a toothbrush, a mirror, scissors, etc., were on the sleeping platform next to the pouch. Findings associated with hygiene appear in almost all bunkers that we have studied comprehensively: toothbrushes

and toothpaste tubes, washing sponges, etc. The medicines available to forest brothers were mostly very primitive. But different kinds of ‘medicines’ were kept close at hand by many. Quite a few forest brothers who had decided not to let themselves be captured (again) alive by Soviet security agencies carried poison ampoules (cyanide capsules) with them (Kaasik *et al.* 2021, 79). A similar glass capsule was found in Käpa bunker near the hygiene supplies.

From weaponry, only two pistol cleaning rods can be mentioned, one of which was found from the rubble of the shelf remains on the north side of the building, and the other from the fallen lookout tree (Fig. 1: 9) located near the bunker. Although there were large numbers of active resistance fighters in the woods who caused a lasting headache for the Soviet regime, most of the forest brothers were passively hiding themselves. Their main objective was simply to survive.

HUMAN REMAINS

During the excavations, a fully articulated *in situ* skeleton was discovered (Fig. 5). The skeleton¹ was almost complete; it missed smaller bones: the carpal bones of both hands, the right patella, II and IV metacarpals of the left hand, three first metatarsals of the left foot, sesamoid bones of the first metatarsals and the medial, middle, and lateral cuneiforms of the left tarsus. Also, all hand and foot phalanxes were absent. Probably the smaller skeletal remains had decayed due to the acidic sandy soil environment. The surface of all the bones was affected by heavy erosion. The skeleton had suffered from several fractures and damage during excavations. Regardless of poor bone preservation, several pathologies were detected on the tooth and skeletal remains. A copper alloy corrosion splodge was detected on the head of the right II rib of the chest, probably caused by a metal object against the bone. Fragments of textile were traced on the left cranial bones.

¹ The sex of the adult was estimated using cranium and pelvic dimorphism (Buikstra & Ubelaker 1994, 16–20), also maximum length of the long bones (Garmus & Jankauskas 1993, 5–23), and maximum lengths of the bones of the foot (talus and calcaneus) were used (Garmus 1996, 28). The age at death of the adult was determined by the morphology of the pubic symphysis (Todd 1920, 285–334; Brooks & Suchey 1990, 227–238), tooth wear stages (Brothwell 1981, 72) and changes in the joints (Ubelaker 1989, 84–87). Pathological conditions were identified based on Buikstra (2019) and Roberts & Manchester (2012). Stature was calculated according to the formula of Trotter and Gleser (Trotter 1970), using the measurements of the left femur.

The exhumed skeleton (Fig. 6) was a male over 40 years of age at the time of death. Based on the maximum length of the left femur, the height of the man was calculated to have been 171.84 ± 3.27 cm. 20 permanent teeth out of 32 had been preserved. The occlusal surfaces of all molars were slightly worn down to the dentin. The right canine of the maxilla and the left third molar of the mandible were lost *ante mortem*. The remaining missing teeth were lost *post mortem*. The teeth had slight dental calculus on all sides of the crowns. However, calculus was slightly more prevalent on the lingual side of the mandibular incisors and canines. Mild alveolar reduction was also detected in the maxilla and mandible. Periapical lesions in the alveoli of the maxillary II and III molars and the mandibular III molar were indicative of probably advanced caries due to apical inflammation.

The skeleton also had several age-related changes in the limb and spinal joints. The elbow, hip, knee, and upper ankle joints had osteophytes and porosity on the joint surfaces, caused by osteoarthritis. There were osteophytes, porosity, and sometimes eburnation (spondyloarthritis) on the upper and lower joint surfaces of the I–VI cervical vertebrae, I–III, X–XII thoracic vertebrae, and I–V lumbar vertebrae. There were also osteophytes from spinal degeneration on the VI–VII, IX–XII thoracic vertebrae and I, III–V lumbar vertebrae (spondylosis).



Fig. 5. Skeleton in situ.

Jn 5. Luustik oma algses asendis.

Photo / Foto: Mauri Kiudsoo



Fig. 6. The nearly complete skeleton of a male found in the bunker.

Jn 6. Punkrist leitud mehe peaaegu terviklik luustik.

Photo / Foto: Martin Malve

Repetitive physical stress was indicated by the formation of depressions on the superior and inferior surfaces of the thoracic (VI–XII) and lumbar vertebrae (I, IV) from intervertebral disc herniations (Schmorl's nodes). Compression of the XI–XII thoracic and 1st lumbar vertebrae was caused by strain, trauma, or aging of the spine. A healed fracture of the V rib on the left side of the chest indicated a previous trauma.

The dental pathologies found, the ailments and traumas that come with age, indicate the man's physical exertion, daily activities, diet, and age. No *peri mortem* injuries were identified on the skeleton, so it is not possible to say whether the man died a violent death. However, killing or suicide by firearm or bladed weapon cannot be ruled out, as, for example, only soft tissue could have been damaged.

CONCLUDING THOUGHTS

What happened in the Käpa bunker sometime in the second half of the 1940s is still a mystery. The identity of the deceased is also unknown. The investigation continues, with DNA-analysis as the first step. Based on the results of archaeological research, it is possible that later someone placed an item of clothing over the face and head of the deceased.

Käpa bunker is an important discovery, because a large number of bunkers were destroyed in attacks by the Soviet security operatives and the Internal Troops of the Ministry of Internal Affairs. Forest brothers themselves also often demolished their bunkers, at the same time carefully concealing all traces referring to the location of the former hideout. If a new dwelling was built in the same area, this concealment activity was outright indispensable from the standpoint of security. Therefore, we know woefully little about the everyday life and activities of the people who were in hiding. The same also goes for the architecture and defence of the bunkers that they lived in. There are descriptions of bunkers in interrogation transcripts as well as operation reports in the archives, though needless to say, they are not all that precise. Rather, they are more generally worded, for instance, 'the bunker was a little house above ground with embrasures, camouflaged using reed mats', etc. (Kaasik *et al.* 2021, 58). It requires scientific studies and careful approach to understand the bunker's structural nuances, let alone matters associated with the everyday lives of the people staying there.² Studying layout and construction of the Käpa bunker that had collapsed over time and witnessing the civil engineering acumen of the forest brothers was a unique experience for all members of the expedition.

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² The investigations of Saarnakõrve bunker, located ca. 15 km south-west from the Käpa bunker, was the first instance of research in Estonia where modern archaeological methods were implemented for the excavations of a forest brothers' bunker in 2013–2014. Saarnakõrve bunker was built above ground (Kiudsoo *et al.* 2015, 211–214).

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HARJU- JA JÄRVAMAA PIIRIVÖÖNDIST AVASTATUD KÄPA METSAVENDADE PUNKRI ARHEOLOOGILISTE UURINGUTE ESIALGSED TULEMUSED

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Juunist 2023 kuni oktoobrini 2024 toimusid Harju- ja Järvamaa piirivööndis, Käpa järve lähedal seal avastatud metsavendade punkri (jn 1) arheoloogilised uuringud. Käpa punker avastati 2022. aasta kevadel (jn 2), kui kontrollisime üht Maa- ja Ruumiameti reljeefikaardil esinevat anomaaliat: oleme alates 2021. aastast selle ümbruses läbi viinud arvukalt maastikuinspektsioone, eesmärgiga kaardistada piirkonnas tegutsenud metsavendade jälgi. Esialgne plaan korraldada punkri asukohas vaid väiksemad eeluuringud tuli ümber teha, sest kaevatud šurfis paljandusid inimsäilmed. Need said ajendiks täiemahulisteks arheoloogilisteks uuringuteks, et hankida täiendavat informatsiooni kriminaalasja tarbeks, mis käsitleb Eestis aastatel 1944–1978 okupatsioonivõimule osutatud vastupanu mahasurumise eesmärgil toime pandud süstemaatilist tsiviilelanikkonna vastu suunatud rünnet.

Käpa punker oli veidi üle nelja ruutmeetri suurune maa-alune ühemehepunker. Ehitisse pääses põhiruumist eenduva vertikaalse šahti kaudu (jn 1: 1). Sissepääsu põhja tarviti ahju kütmisel tekkiva söe ladustuskohana ning šahti vastas oli plekkkorpusega

ahi (jn 1: 2), mis oli seestpoolt vooderdatud tellistega. Ahju ja punkri põhjaseina vahelist ruumi tarviti küttepuude kuivatamiseks ja hoiustamiseks (jn 1: 3). Lisaks vaevalt maapinnani ulatuvale korstnale oli kasutusel ka lisakorsten.

Esimene avastatud ese oli rauast piimanõu, mida kasutati ilmselt puhta vee hoiustamiseks. Ahju lõunapoolse külje taga asetses aga u 90 cm sügavune kitsas kaev (jn 1: 4). Sissepääsust vasakule poole seinale oli kinnitatud raudvitstega kibu, mida võidi kasutada silmapesunõuna (jn 1: 5). Kõige raskem aastaaeg metsavendade elus oli talv, mil maha sadanud lumi sundis varjunud mehi-naisi pikemalt punkritesse paikseks jääma. Talvepunkri rajamisel oli nende turvalisuse kõrval sama oluline kriteerium värske joogivee olemasolu, milleta inimene vastu ei pea.

Talvel tegelesid metsavennad kõikvõimaliku käsitööga. Uuringutel kogutud rikkaliku leiumaterjali põhjal otsustades harrastas punkrielanik erinevat sorti käsitööd, sh puutööd. Sellele osutasid nii leitud toormaterjal (naha-, pleki- ja riidetükid) kui ka tööriistad nagu peitlid, saag, teritaja jne. Avastasime ka üle poole tosina vaigutustopsi, mis olid algselt paigu-

tatud punkri seinariilulete koos muude esemete ja tööriistadega. Riilulid (jn 1: 6) asusid punkri põhjaküljel ning magamislavatsi (jn 1: 7) jalutsis ja peatsis. Näiteks oli peatsi kohal olevale riilule algselt asetatud väiksemat sorti kohver, nööriaga kokku seotud küünlad, pliatsid jms (jn 3).

Maa-alune rajatis oli teiste omasuguste seas erandlik selle lõunaseina ülaosas paikneva topeltklaasiga vertikaalse akna tõttu (laius u 50 cm; kõrgus u 20 cm; jn 1: 8). Selle all tuvastasime ka magamislavatsi jäänused ühes inimsäilmetega. Vasakul küljel lebava surnu käte lähedalt avastasime hügieenitarvete tasku, milles olid leidmise hetkel habemenuga ja kamm (jn 4). Ülejäänud esemed, nagu hambahari, peegel, käärid jms, asetsesid tasku kõrval lavatsil. Peaaegu kõigist punkritest, mida oleme põhjalikumalt uurinud, on avastatud ka sealsete elanike hügieeniga seonduvaid esemeid nagu hambaharjad ja -pastatubid ning pesukäsnad jms. Metsavendade kasutada olnud ravimid olid enamjaolt väga primitiivsed. Enese ihu lähedal hoiti aga ka hoopis teistsuguseid „ravimeid“. Nii mõnelgi metsavennal, kes oli võtnud nõuks end elusalt julgeolekule kätte mitte anda leidis mürgiampull. Analoogete tsüaniidikapsli (?) klaaskorpus avastati ka Käpa punkrist, hügieenitarvete tasku lähedalt.

Relvadega seotud leidudest võib nimetada vaid kahte püstoli puhastusvarrast, millest üks tuli päevavalgele punkri põhjakülje riilijäänuste rusudest ja teine mahakukkunud vaatluspuu küljest (jn 1: 9). Kuigi metsades leidis hulganisti aktiivseid vastupanuvõitlejaid, olid enese passiivsed varjajad metsavendade seas selges ülekaalus ning nende peamine eesmärk oli lihtsalt elus püsida.

Punkri lavatsilt avastatud luustik oli peaaegu terviklik (jn 5), puudusid vaid pisemad skeletiosad: kõik randmeluud, parem põlvekeder, kolm vasaku jalalaba esimest põialuud, jalalabade esimeste varvaste seesamluud ja vasaku kannaoosa talbluud. Samuti ei olnud kogumis enamik käe- ja jalalabaluid. Tõenäoliselt olid väikesed luud lagunenud liivase pinna tõttu, mis on happeline. Seetõttu olid ka enamike luud välispind tugevasti erodeerunud.

Skelett (jn 6) kuulus mehele vanuses 40+ aastat, kelle kehapikkus eluajal oli 171,84±3,27 cm. Tema 32 hambast oli säilinud 20. Kõikide purihammaste mälumispinnad olid kulunud kergelt dentiinini. Ülalõualuu parema poole silmahammast ja alalõualuu

vasaku poole kolmas purihammas olid varem välja langenud, ülejäänud puuduvad hambad olid kaotatud pärast surma. Hammastel esines kergelt hambakivi kroonide kõigil külgedel, veidi rohkem alalõualuu lõike- ja silmahammaste külgedel. Mõlemal lõualuul tuvastati ka kergelt alveolaarkaarte taandumist. Tõenäoliselt kaugele arenenud kaariesele, juuretipu-põletikule, viitasid ülalõualuu II ja III purihamba ja alalõualuu III purihamba alveoolides periapikaalsed tühimikud.

Rohkelt esines vanusega kaasnevaid muutusi jäsese- ja lülisambaliigestel. Künar-, puusa-, põlve- ja ülemistel hüppeliigestel olid luukasvied ja poorsus, mis on tingitud liigestekulumisest ehk osteoartroosist. I–VI kaelalüli, I–III, X–XII rinnalüli ning I–V nimmelüli ülemistel ja alumistel liigespindadel olid luukasviseid, poorsust, kohati ka luuplinkumist (spondüloartroos). Samuti esines lülisamba degenerumisest põhjustatud osteofüüte (spondüloos) VI–VII, IX–XII rinnalüli- ja I, III–V nimmelülkehadel.

Korduva füüsilisele stressile viitasid rinna- (VI–XII) ja nimmelülide (I, IV) alumistele ning ülemistele pindadele tekkinud lohukesed lülivahekettasongadest (Schmorli sõlmed). Kunagisest traumast andis märku rindkere vasaku poole V roidekaareosa paranenud luumurd. Koormusest, traumadest või selgroo vananemisest oli tingitud XI–XII rinna- ja I nimmelüliskeha kompressioon.

Leitud hambapatoloogiad annavad infot mehe toitumise kohta, vanusega kaasnevad vaevused ja traumad viitavad lisaks eale ka füüsilisele koormusele ja argitegemistele. Ühtegi surmaaegset vigastust ei tuvastatud, mistõttu ei ole võimalik öelda, kas mees suri vägivaldset surma. Samas ei saa tapmist välistada, kui kahjustati vaid pehmet kudet.

Käpa punker on oluline avastus, kuna suur osa metsavendade punkritest hävis julgeoleku ja sisevägede rünnaku käigus. Sageli lammutasid punkreid ka metsavennad, peites hoolikalt kunagisele asupaigale viitavaid jälgi: kui uus eluase rajati samasse piirkonda, oli see ohutuse seisukohalt hädavajalik. Nii ülekuulamisprotokollides kui ka operatsiooniaruannetes leidub kirjeldusi punkritest, kuid need pole mõistagi kuigi täpsed, näiteks „punker oli maapealne majake, laskeavadega, maskeeritud pilliroomatidega“ jne. Seetõttu teame siiani väga vähe varjajate igapäevaelust ja -tegemistest, sama kehtib ka punkriarhitektuuri ja -kaitse kohta.