Legate against the Emperor: the beginning, course and results of the revolt of Antonius Saturninus

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Abstract. The purpose of the work is to analyze the causes, course and consequences of the rebellion of Anthony Saturninus, directed against the emperor Domitian (89 AD). After analyzing the strategic situation in the western provinces and the course of events, the author proves that the performance was poorly prepared, was of a spontaneous nature and was doomed to failure from the very beginning. The author’s conclusions: a thorough analysis of the sources suggests that the initiative of the rebellion of Saturninus belonged to the mass of soldiers, while for Saturninus himself, the imperial acclamation, most likely, was a complete surprise.

In 97 AD, the highest commanding staff of the Roman army, mindful of the circumstances of the defeat and death of Saturninus, managed to prevent a civil war by guaranteeing the transfer of power from Emperor Nerva to the protege of the military, Mark Ulpius Trajan.

Keywords: Domitian, Nerva, Trajan, Lappius Maximus, donative, barbarian hinterland, Mogontiacum

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Легат против императора: начало, ход и результаты мятежа Антония Сатурнина*

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Аннотация. Цель работы — анализ причин, хода и последствий мятежа Антония Сатурнина, направленного против императора Domitian (89 г.). Проанализировав стратегическую ситуацию в западных провинциях и ход событий, автор доказывает, что выступление было плохо подготовлено, носило спонтанный характер и с самого начала было обречено на поражение. Тщательный анализ источников позволяет предположить, что инициатива мятежа Сатурнина принадлежала солдатской массе, тогда как для самого Сатурнина императорская акклямация, скорее всего, явилась полной неожиданностью. В 97 г. высший командный состав римской армии, памятуя обстоятельства поражения и гибели Сатурнина, сумел предотвратить гражданскую войну, гарантируя переход власти от императора Нервы к ставленнику военных, Марку Ульпию Траяну.

Ключевые слова: Domitian, Нерва, Траян, Лаппий Максим, донатив, варварский хинтерланд, Могонциак


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Introduction

The peculiarity of the only military revolt in all 15 years of Domitian’s reign is that it had no visible reasons, at first glance. The last Flavius constantly emphasized his care of the armed forces of the Empire, and these were not mere words. Domitian not only spent more time in the army than any of his

* Вероятные причины мятежа и основные источники по этой проблеме анализируются в уже опубликованной работе автора [1. С. 845–857]. Настоящая статья представляет собой доработанный вариант доклада, прочитанного на XXII Сергеевских чтениях 2023 г., и завершает рассмотрение данной темы.
predecessors after the already half-forgotten Second Triumvirate — it was he who initiated the stable tradition of the emperor’s personal participation in military campaigns [2. P. 57; 3. P. 126 f.]. Shortly after coming to power, for the first time since Augustus, he found an opportunity to significantly increase the salaries of all the militaries, from the Praetorian Guard to the Navy [4. C. 131–161].

The possibility of an armed uprising against Domitian looked unrealistic, and because the emperor carried out a thorough selection of the highest command staff, only proven people were appointed to the post of governors of the armed provinces. It seemed that the rebellious commander Lucius Antonius Saturninus, a typical “appointee” of the Flavian time, was no exception. He, in the end, was appointed to a very prestigious position in the imperial military hierarchy — legatus Augusti provinciae Germaniae Superioris [5. P. 1070–1075, 1081]. It turned out to be the last in his successful career.

**Revolt leader personality**

The very personality of the applicant for imperial power is doubtful — he was *homo novus*. Itself, this was not yet critical: Vespasian was of humble origin, which did not prevent him from winning the civil war; Verginius Rufus was also *homo novus*, whom, despite this, the legions twice offered supreme power, and he refused it twice. This fact, according to G.S. Knabe, made him almost a legendary person during his lifetime [6. S. 71].

Compared with them, the rebellious legate of Upper Germany looks rather colorless. Antonius Saturninus, born around 42 AD, seems to have been a native of one of the western provinces, possibly *Hispania Tarraconensis* [7. S. 40; 8. S. 119]. Neither with the rebellious popular tribune of the time of the Late Republic, nor with the triumvir Marcus Antonius, he had anything in common, except for the name. He did not distinguish himself, as far as one can judge, either by outstanding military achievements, or by any noticeable actions in the political arena. If it was not for the revolt he led, then after his governorship, he most likely would have spent the rest of his life “in comfortable oblivion” [9. P. 101]. The post of legate of Upper Germany, who was at the head of a powerful military group, Saturninus received, most likely, because he did not shine with any talents dangerous for the central government and could not have any support among Roman aristocracy [5. P. 1083; 10. P. 253; 11. S. 205].

On the other hand, the behavior of the rebellious legions led by him shows that their commander managed to win sufficient authority among them, as they followed him with minimal chances of success. Thus, one has to agree with Brian Jones’ cautious assessment: “He could have been rather competent
officer, but hardly a ‘capax imperii’” [3. P. 147]. However, if the initiators of the rebellion were the soldiers and officers themselves, then they still had no other way out, as well as time to search for a more suitable candidate.

At the same time, it should be taken into account that after the Antonius Saturninus’ attempt to usurp the imperial power and the death of the usurper, his memory was subjected to deliberate defamation. This applies, in particular, to the desire reflected in late antique historiography to reduce the reasons for Saturninus’ revolt to a purely personal motive — the legate’s desire to avenge the insult that the emperor inflicted on him. If this is true, at least to some extent, then this motive hardly played a primary role. The soldiers and officers of the two legions, XIV Gemina Martia Victrix and XXI Rapax, who were in the winter camp of Mogontiacum (Mainz), clearly had more serious reasons for opposing Domitian.

Strategic situation in the western provinces

Those researchers who believe that the revolt arose spontaneously seem to be right. Its main reasons were the dissatisfaction of the soldiers and officers with the cessation of active hostilities on the right bank of Rhine and the beginning of the disaggregation of the Rome Rhine Army, the largest military group of the Empire, in favour of the military theater actions on the Middle and Lower Danube. It is possible that the “latent fear” of the soldiers before being sent to the Danube for the war against a formidable enemy, about which the most terrible rumors could circulate, also played a certain role in the emergence of the soldiers’ revolt [11. S. 206]. Though, Egon Flaig believes that this opinion is mistaken; on the contrary, for the legionnaires it would be a welcome opportunity to distinguish themselves, which they had previously been deprived due to the radical change by Domitian of the Roman policy towards the Germanic tribes [12. S. 425].

Such an opinion might be interesting and would be true if the troops of the Upper Germany garrison, by the time the rebellion began, had been distinguished by high fighting qualities and were eager to prove themselves in a big war against any enemy. However, it is difficult to determine this. In any case, the legions that revolted lost the battle against government troops. One of them, XXI Rapax, was transferred to the Danube shortly after the mutiny. According to the researchers [13. P. 44 f.; 14. S. 129; 15. S. 160], it was fully defeated in 92, being (a rare case in Roman military practice) destroyed by the Sarmatians together with the commander (legione cum legato simul caesa — Suet. Dom. 6).

Perhaps the shortcomings in their combat training were due to the fact that active hostilities in this region ended quite a long time ago. The legions were
mainly occupied with hard work on the construction of the Upper German
limes. Based on all this, it can be assumed that the “latent fear” of the soldier
masses before the transfer of the legions to the Danube, where the situation
differed sharply from the rather calm situation on the Rhine, had reason and
the opinion of Karl Strobel should not be denied\(^1\).

Another odd thing is the moment chosen to start the revolt — the
beginning of January 89 AD.\(^2\) On the one hand, this is understandable:
in the January kalends of each new calendar year, the troops confirmed
their oath of allegiance to the emperor (Tac. \textit{Hist.} 1.55.1; Plin. \textit{Epist.}
X.52) [16. S. 1200]. In addition, it was on January 1, 69, in the same
Mogontiacum that the Upper German legions proclaimed their commander
Vitellius emperor, moved to Rome, defeated Otho in Northern Italy and
occupied the capital. Under certain conditions, it might be tempting
to repeat this successful experience.

However, the previous experiment was successful in the context of a civil
war, that is, a prolonged political crisis, which in such cases was, if not
mandatory, then highly desirable for the initiators of the rebellion [17. S.
290]. But the power of Domitian, as well as his popularity in the army, was
strong enough, there could be no question of any political crisis. Moreover,
the prestige of the emperor in the army was to increase even more: by the
beginning of 89, the long and difficult Dacian war promised to be crowned
with complete success: the enemy had already been defeated in the general
battle at Tapae (88), it remained to deal him the last, a knockout blow that
never took place precisely because of the rebellion in Germany. Thus, unlike
the situation twenty years ago, the moment for the start of the revolt was
completely inappropriate [11. S. 205].

The overwhelming majority of the governors of the armed provinces then
remained loyal to Domitian. The R. Syme later abandoned the dramatic picture
of a ramified conspiracy against the emperor he had depicted [19. P. 173;
10. P. 253]. The physical elimination of the governor of Britain, Sallustius
Lucullus, the alleged accomplice of Saturninus [20. P. 69; 21. P. 221; 22.
P. 142], in fact, could be caused by completely different reasons\(^3\).

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\(^{1}\) A similar precedent had already taken place: the troops sent in 43 to conquer Britain refused
to aboard onto ships, and it was hard to persuade them (Cass. Dio LX. 19.2-3).

\(^{2}\) The date is debatable [18. P. 42. Note 33], but can be accepted as the most probable.

\(^{3}\) The British legate and his staff were dissatisfied with the cessation of active hostilities in the
territory of modern Scotland and the withdrawal of Roman troops from the north of the island.
This dissatisfaction was exacerbated by the order of Domitian to send the II legion to the mainland,
thereby reducing the British military grouping by a quarter. A mutiny that was about to break out was
averted by the decisive actions of officers loyal to the oath. Sources give grounds to attribute these
events to 87, therefore, they have nothing to do with the revolt of Saturninus [23. C. 125–144].

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Sequence of events

As for the revolt itself, it began in the camp of the both legions, the fourteenth and twenty-first, when on January 1, 89, instead of the traditional renewal of the oath of allegiance to Domitian, the imperial acclamation of Lucius Antonius Saturninus took place. From that moment on, there was no turning back: the participants in the usurpation, starting with the newly-minted emperor, had to either win or die.

It must be admitted that Saturninus’ revolt was prepared very badly. It again testifies to his spontaneous character and that the legate of Upper Germany, as it seems, had to play the role of a “willy-nilly usurper”, even if before that his supporters were from among officers of these two legions and incited the soldiers to revolt. It quickly became clear that the governors of neighboring provinces not only did not support their colleague, but were also actively preparing to repulse him. A special role in these events was played by Saturninus’ counterpart, Aulus Bucius Lappius Maximus, the governor of the neighboring province of Lower Germany, who swore his troops and began to prepare them for military operations against the usurper. From distant Spain, the future emperor Marcus Ulpius Trajan Jr. moved in a forced march at the head of his legion (VII Gemina) to help Domitian. A few days after receiving news of what had happened in Mogontiacum, Domitian himself appeared from Rome at the head of the Praetorian guard.

Saturninus immediately found himself in a critical position. Even half of the troops subordinate to him did not support him: the two remaining legions, XI Claudia in Vindonissa and VIII Augusta in Argentoratus [21. P. 221; 9. P. 101 f.]. They did not take part in the suppression of the rebellion, but according to indirect data, it can be judged that they did not take the side of the pretender to the throne, as they retained their honorary titles, which they would have lost otherwise.\(^4\)

According to the prevailing opinion in science, any movement of troops without the order of the commander-in-chief i.e. the emperor, was excluded. However, the very chronology of events suggests that this point of view will have to be abandoned and agreed that the governors of the armed provinces should have had instructions in case of an emergency in order to act without waiting for an order from above [35. S. 123. Anm. 29].

The reaction of Lappius Maximus, governor of Lower Germany, to the revolt of Saturninus confirms this view. Trajan’s forced march proves that similar secret instructions were given to legionaries. Thus, the year 89 showed how the Roman military machine works if the legates and troops remain loyal to the emperor.

\(^4\) The full name of the XI legion (Claudia pia fidelis) has nothing to do with the performance of Saturninus’ revolt, since it was assigned to him in 42 for suppressing the rebellion of Camillus Scribonianus against the emperor Claudius [12. S. 423. Anm. 43]. Possible options for the behavior of these legions are analyzed by K. Strobel [11. S. 207–209]. In any case, they did not take an active part in the rebellion, otherwise events could have gone in a different direction.
to the central government. The fate of the rebellion was decided only 15–20 days after the acclamation of Saturninus, when the emperor was still far away. Consequently, in this critical case, as in other similar ones, the governors of the provinces had to act independently in the way that the oath obligated them [12. S. 422].

The usurper still had a serious force at his disposal: two legions, XIV and XXI, some auxiliaries and, as expected, vexillations of the VIII and XI legions [36. Sp. 2567 f.; 37 Sp. 1276; 13 P. 41, 44; 11. S. 207 f.]. Saturninus could not move these troops to Rome leaving the garrison of Lower Germany in the rear. Therefore, in order to avoid a blow in the back, he makes a completely logical decision — to march north, towards his colleague, the legate of the Lower German military group, Aulus Bucius Lappius Maximus. He needed to achieve immediate success in order to maintain the combat readiness of his troops, to prevent possible fluctuations in his own troops and to ensure the widest possible resonance for his actions [21. P. 221; 11. S. 214].

Although Lappius Maximus had at his disposal a force that was about twice as large as that of the usurper, Saturninus apparently thought that the matter would not be shedding blood if he succeeded in winning over the Lower Germany legions to his side. The possibility of this could seem quite real: one of the rebellious legions, XXI Rapax, in 70–83 AD was part of the Lower Germany grouping and then was transferred by Domitian to Upper Germany for an offensive war against the German tribal union of the Chatti [11. S. 207]. Considering the stability of corporate ties in the Roman army, the usurper might well have assumed that the warriors of this legion would be able to propagate their former commilitones. In this case, the chances of Saturninus for the success of his revolt against the emperor increased dramatically: then the “domino effect” could work, and the troops still remaining in the western provinces would only have to join the revolt.

One of the most intriguing aspects of Saturninus’ revolt is the participation degree of an external force, represented by his Germanic allies. These allies are usually seen as the Chatti, over whom a few years earlier Domitian had celebrated a triumph. It was very ironically depicted in the surviving sources but Domitian assumed the honorary title of Germanicus.

In official propaganda, the win of the Germans by Saturninus to his aid was portrayed as a betrayal of the homeland and was carried out, and not in favour of the rebellious legate, a parallel with the triumvir Antonius, who also betrayed Rome (Mart. IV.11). This made it possible to portray the outbreak of a civil war (bellum civile) as a war against an external enemy (bellum externum), that were the Germans, together with the Roman commander who betrayed his duty [11. S. 209; 18. P. 30 ff.]. Therefore, Lappius Maximus, who defeated Saturninus, is referred to in the inscription (ILS. I. 1006) as the “terminator of the German war” (confector belli Germanici). However, upon closer examination, the issue is not so simple.
Domitian’s triumph over the Chatti after the 83/84 campaign may indicate that the war was considered completed. Consequently, an agreement was concluded with the enemy, according to which the Chatti became federates of the Empire. Given their high military reputation (Tac. Germ. 30.3), it can be assumed that the contract also provided for the supply of military contingents to the Roman army. The barbarian hinterland undoubtedly fell under the responsibility of the legate of Upper Germany. In the order to put up the necessary number of soldiers, the Chatti hardly saw anything unusual [11. S. 209]. In any case, their competence did not include the duty to deal with the disagreements that arose among the Romans.

The Germans, as we know, fulfilled this order. But to unite with the troops of Saturninus, they had to go to the left bank of Rhine. For an unknown reason (most likely to shorten the path), they did not do this where there were bridges, at least in Mogontiacum, but set out to cross the river on ice. This failed, according to our source, by pure chance: a thaw came, ice went down Rhine, so that the “hordes of barbarians” (copias barbarorum) who came to the assist of Saturninus remained only spectators of the battle between the Roman troops (Suet. Dom. 6.2; 7.3). Meanwhile, the German allies of Saturninus were taken very seriously in Rome: according to Plutarch, the population of the capital was worried, expecting a big war with them (πολὺς πόλεμος ἀπὸ Γερμανίας προσεδοκᾶτο, τῆς Ῥώμης ταραττομένης) (Plut. Aem. Paul. 25). This shows that Domitian’s propaganda had the desired effect and the usurper should not count on the support of public opinion.

The hope of Saturninus for joining him the Lower Germany garrison did not come true either. The army of the newly-minted “emperor”, instead of fraternizing with the Lower German legions, had to engage in a fierce battle with them, in which he was defeated. Saturninus perished, his head was sent to Rome and exhibited at the Forum. There are no details of this battle in the available sources, it is only indicated that its outcome was determined not so much by Lappius Maximus as by the soldiers themselves (Cass. Dio LXVII.11.1). The usurpation failed, its consequences began.

Reprisals of rebels

The Government troops occupied Mogontiacum. The participants of the revolt were disarmed, the officers were taken into custody and were awaiting the imperial court. Epitomator of Cassius Dio reports that in the residence

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5 K. Strobel considers this picture nothing more than "the fruit of conscious myth-making" in order to show that the gods were on the side of the legitimate ruler. In his opinion, with which, given the transience of events, it is quite possible to agree, only the vanguard of the German militia could manage to help the rebels, which was stopped by a sudden ice drift [11. S. 209].

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of Saturninus his correspondence was seized, which Lappius Maximus ordered to burn (cass. Dio LXVII.11.2). Modern researchers, with rare exceptions [21. P. 222], are skeptical of this information. So, Karl Strobel believes that the very fact of the destruction of compromising material took place, but was the work of Saturnin’s entourage, and Lappius Maximus could only attribute this act to himself after the murder of Domitian in order to whitewash his rather bad (schlechte Presse) reputation [11. S. 219 f.].

These are interesting, but unprovable assumptions that the governors of neighboring provinces, including Lappius Maximus, downright pushed Saturninus to revolt, in order to then betray him and thereby earn Domitian’s favor. When it became clear that the putsch was not succeeded, Maximus burned the correspondence of Saturninus in order to cover up the traces of this coup [38. P. 47; 12. S. 423 f.].

Obviously that the further career of Lappius Maximus developed successfully: from 89/90 till 93/94 AD he held a very prestigious and responsible post of governor of Syria, in May-June 95 he was consul suffectus II, and Domitian provided a secondary consulship in very rare cases. All these facts shows Domitian’s complete confidence in him and makes one doubt that it was the legate of Lower Germany (Germania Inferior) who could order to destruct Saturninus’ correspondence. Besides in 102, Lappius Maximus, who survived the fall of Domitian without harm to himself, a member of the prestigious priestly college of pontifices, was, unlike his unfortunate usurper colleague, alive, healthy and prosperous [11. S. 219].

Due to the fact that the troops of Lower Germany (Germania Inferior) during the revolt of Saturninus remained unwaveringly loyal to Domitian, the legions, auxiliary formations, the fleet received the honorary names pia fidelis Domitiana and earned the reputation of a faithful stronghold of the Flavian dynasty [11. S. 213]. Undoubtedly, they should have received a generous donation as well. The fate of the Upper German army was different.

When Domitian arrived at Mogontiacum, the rebels were judged swiftly and mercilessly. Legates of the legions, military tribunes, as well as the most active participants in the rebellion from among the centurions were executed — after they were subjected to sophisticated torture (Suet. Dom. 10.5), apparently to obtain information about accomplices. The results were modest — the involvement of senators in Rome in the events in Germany was not established. Therefore, the analyzed events are considered to be a purely military revolt, although this point of view is disputed — its opponents believe that the threads of the conspiracy led to Rome [cf.: 39. S. 498; 40. P. 534 f.; 5. P. 1082; 42. P. 389; 29. S. 73 f.] In any case, the interested parties learned from it.
Consequences

Pat Southern is, obviously, right when she notes about the rebellious legate that “Domitian, who selected a person for appointment to this post with rare care, experienced, when his trust was completely betrayed, an absolutely stunning blow to his mentality.” This could not but affect the nature of his reign and, ultimately, led to a palace coup and the death of the last Flavius [9. P. 101, 103 f.].

The provincial governors, for their part, were convinced that an isolated military revolt, not supported by the garrisons of at least neighboring provinces and without having a popular leader at the head, was doomed to failure. Therefore, during the next political crisis under Nerva, a completely unexpected (and almost bloodless) way out of a critical situation fraught with a new civil war was found.

By the time of Domitian’s death, for the grandiose and carefully prepared campaign planned by him, a huge military grouping had been concentrated on the Middle Danube, numbering at least 10 legions plus auxiliaries attached to them of no less number [42. P. 75 f.]. The unexpected assassination of the emperor, popular among the soldiers, was met with indignation by both the provincial armies and the guards (*miles gravissime tulit* — Suet. *Dom.* 23). The escalation of events was avoided only because the senior commanders of the Danube army (governors of the provinces and legates of the legions) managed to work out an agreed decision by converging on Trajan’s candidature as Nerva’s successor. No one dared to challenge the decision of the “committee of commanders”, representing a good half of the armed forces of the Empire — neither the Senate, nor the Praetorian Guard, nor the governors of the other provinces.

On the posthumous reputation of Saturninus, this decision affected in an unexpected way. It makes sense to assume that in the atmosphere of euphoria that reigned in the Senate after the murder of Domitian, Antonius Saturninus, as well as other victims of Domitian, should have been posthumously rehabilitated. The Senate decree on his *damnatio memoriae* should be canceled and glorified as a fighter against the tyranny of the last Flavius. But nothing of the kind happened, and if it did, then without much fuss.7

The subsequently they preferred to remain silent rather than speak about Saturninus. The reason of this fact lies not only in the obvious fact that he did not claim the laurels of a freedom fighter, but only that, if successful, take the place of Domitian: everybody perfectly understood that the restoration of the republican system is impossible.

But there was a delicate circumstance connected with the fact that Trajan’s career rise was at his time connected with the massacre of the participants in the rebellion of Saturninus [11. S. 217]. This detail did not fit with the image of the

7 It is known (CIL. VIII. 7032; 8280) that a few decades later Antonia Saturnina, presumably the daughter of our rebel [43. P. 251. N. 1], owned latifundia in Africa. This may indicate that the property of Saturninus confiscated by Domitian was subsequently returned to his family.
“best princeps” in any way. Trajan, according to official opinion, continued the political line of his adoptive father Nerva, who managed to combine two previously incompatible things, principate and freedom (Tac. *Agric.* 3.1; Hist. I.1.4). The way out, of course, was found: “The past, with the tacit consent of the parties concerned, was consigned to oblivion, and a compromise that suited everyone was worked out” [44. S. 256]. Therefore, many details of the events of the beginning of 89 on the Rhine were hidden by an almost impenetrable veil of tactful silence.

**Conclusion**

The revolt of the two legions in Mogontiacum is unique in its own way, since it seemed that it had no reason to happen. Perhaps except the twentieth anniversary of a similar event that had happened there, which led to the approval in Rome of Aulus Vitellius, just another “general of a civil war” of 68–69 AD. However, a more thorough analysis of the surviving information allows us to determine the most probable reasons for a riot against the emperor and assume that his initiative belonged primarily to the mass of soldiers, who elected their commander, legate of Upper Germany Lucius Antonius Saturninus as their own contender for the supreme power. Perhaps the imperial acclamation was a surprise for him, since the further course of the case shows that it was poorly prepared, the usurper did not even manage to win over to his side all the troops he commanded as an imperial legate. The unequivocal reaction of all the governors of the western provinces who marched off or were ready to do it against Saturninus, the loyalty of their armies to the legitimate emperor, the decisive measures of Domitian himself unambiguously doomed the revolt to defeat. However, the rapid defeat of the rebels, the death of the usurper himself was only the beginning of a long chain of events, the result of which was the approval of the professional military Marcus Ulpius Traianus, nominated by the highest command of the Roman army, in power.

**References**


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