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### The Evolution of Splint Armour in Georgia and Byzantium: Lamellar and Scale Armour in the 10th-12th Centuries

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THE EVOLUTION OF SPLINT ARMOUR IN GEORGIA AND BYZANTIUM  
LAMELLAR AND SCALE ARMOUR IN THE 10TH-12TH CENTURIES

Body armour consisting of small metal plates has a long history. Beginning with the 2nd-1st millennia BC various kinds of splint (scale and lamellar) armour were already firmly established in the Near East<sup>1</sup>. It should be noted that in this region, beginning with the Achaemenid period, over a whole millennium, lamellar armour was superseded by its scale counterpart<sup>2</sup>; while in Central and Eastern Asia lamellar armour was predominant<sup>3</sup>.

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1. In a number of cases, as will become apparent below, it is rather difficult to tell the difference between lamellar and scale armour. It is due to its diversity that the classification of early splint armour is so complicated and imperfect. A. Kirpichnikov singles out two types of armour, fixed by means of thongs and on the lining. M. Gorelik singles out 'lamellar' (many plates linked to one another with thongs), 'laminar' (consisting of horizontal strips) and 'platelet' (fixed on the lining) armour. I. Khudyakov and A. Soloviev differentiate between two methods of fixing the plates: 1) linked to one another with thongs or pieces of wire and 2) either sewn on to the lining or fastened by riveting. Also, they single out two basic variants of the arrangement of plates: 1) partially overlapping one another and 2) very close to one another. Y. S. KHUDYAKOV – A. I. SOLOVIEV, *From the History of Defensive Armour in Northern and Central Asia*, in: *Art of War of the Ancient Population of North Asia*, eds. V. E. MEDVEDEV – Y. S. KHUDYAKOV, Novosibirsk 1987, 138 (in Russian).

2. A. M. KHAZANOV, *Essays on the Art of Warfare of the Sarmatians*, 2nd ed., St Petersburg 2008, 124-33 (in Russian); M.V. GORELIK, *Arms of the Ancient East (4th millennium – 4th cent. BC)*, St Petersburg 2003, 83-112 (in Russian).

3. M. V. GORELIK, *Saka Armour*, in: *Central Asia: New Monuments of Writing and Art*, eds. B. B. PIOTROVSKY – G. M. BONGARD-LEVIN, Moscow 1987, 120 (in Russian). Both kinds of splint armour (scale and lamellar) had their merits and shortcomings as well, that is why we sometimes come across a combination of both in one suit of armour, where it

Επιμέλεια έκδοσης: ANDREA BABUIN, Πανεπιστήμιο Ιωαννίνων

After the appearance of the nomad tribes moving from Asia, an opposite process started in the Byzantine Empire and on its adjacent territories. In the 7th-9th centuries, under the influence of Avars, Khazars, Hungarians and other steppe nomads, lamellar armour began to gain ground in Byzantium<sup>4</sup>, becoming especially widespread in the 10th century.

Byzantine technology was part of the military technology that existed in vast areas of Eurasia; hence study of the armament of its neighbours is important<sup>5</sup>. This method is widely used by many scholars and more often than not it is the only one that gives us an insight into Byzantine armament.

Unfortunately, sparse information about Byzantium's Caucasian neighbours hinders Western scholars from using this method and adding new data to the available scholarly sources<sup>6</sup>; and hence the purpose of the present paper is to partially remove this flaw. At the same time it contains certain views about the stages of the evolution and provenance of splint armour.

### Scale Armour

In the Near East, scale armour began to spread from the middle of the 2nd millennium BC. Having been used for millennia, scale armour is considered to be one of the landmarks in the history of the development of the art of war<sup>7</sup>.

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was possible to combine the lamellar cuirass and the scale skirt. Y. M. LUPINENKO, *Splint Armour of the Eastern Slavs in the 7th-10th Centuries*, in: *Russia at the Crossroads of Worlds. Materials of the International Archaeological Seminar*, Chernigov 2006, 117 (in Russian); A. N. KIRPICHNIKOV, *Old Russian Weapons, Issue 3, Armour, Complete Set of Battle Weapons in the 9th-13th Centuries* [Archaeology of the USSR], Leningrad 1971, 12 (in Russian).

4. J. HALDON, *Warfare, State and Society in the Byzantine World, 565-1204*, London-New York 1999, 129.

5. J. HALDON, *Some Aspects of Early Byzantine Arms and Armour*, in: *A Companion to Medieval Arms and Armour*, ed. D. NICOLLE, Woodbridge 2002, 78-9.

6. T. Dawson is sure that the evolution of lamellar armour occurred only in Byzantium and new types of armour were unknown to its neighbours. T. DAWSON, *Byzantine Cavalrymen c.900-1204*, Oxford 2009, 42. As we shall see further, this view is erroneous, the reason being lack of information.

7. E. V. CERNENKO, *The Scythians 700-300 BC*, Oxford 1983, 7; GORELIK, *Arms of the Ancient East*, 90-2.

Scale armour consists of metal plates, fastened to leather or some fabric<sup>8</sup>. The plates are often U-shaped<sup>9</sup>, the armour plates are always (!) directed downward, being its characteristic feature.

The rows of scale armour overlap 1/3 of one another<sup>10</sup> and are slightly shifted aside, in this way forming a multi-layer surface like the scales of fish. The shape of the scales is also rounded and elongated on one side, and straight on the other<sup>11</sup>.

In order to make the scale armour elastic, so that it should not hinder the warrior's movements, well cured leather of the highest quality was used<sup>12</sup>. To fix the scales on the leather stratum, thin thongs were ordinarily used<sup>13</sup>. They could also be fixed with rivets or small pieces of metal wire, passed through the holes of the scales; these holes were arranged in pairs, – mainly at the bottom and on the sides, occasionally in the middle as well<sup>14</sup>.

Due to its elasticity and peculiar design, scale armour could be long-sleeved, while the stiffer lamellar was only short-sleeved. The sleeves of scale armour needed stronger fastening, hence additional holes were made in the middle and lower parts of the scales<sup>15</sup>. In general, at the places where the armour bent, smaller scales were used<sup>16</sup>, the chest, the belly and the back were covered with larger scales<sup>17</sup>.

In comparison with lamellar, scale armour is more elastic, as its scales are fixed only on one side<sup>18</sup>. The only armour more elastic than scale is

8. Sometimes the scales were placed exactly below one another. H. RUSSELL ROBINSON, *Oriental Armour*, New York 1967, 3.

9. H. NICKEL, *The Mutual Influence of Europe and Asia in the Field of Arms and Armour*, in: *A Companion to Medieval Arms and Armour*, 109.

10. Or sometimes even half. E. I. DEREVYANKO, *Essays on the Art of War of the Transamur Tribes*, Novosibirsk 1987, 28 (in Russian).

11. A. I. SOLOVIEV, *Art of War of the Indigenous Population of Western Siberia*, Novosibirsk 1987, 52 (in Russian).

12. Part of the back of cattle, the level of their dressing corresponded to modern standards. E.V. CHERNENKO, *Scythian Armour*, Kiev 1968, 20 (in Russian).

13. CHERNENKO, *Scythian Armour*, 28.

14. B. THORDEMAN, *Armour from the Battle of Wisby*, v. 1, Uppsala 1939, 281.

15. KHAZANOV, *Essays on the Art of Warfare of the Sarmatians*, 123.

16. DEREVYANKO, *Essays on the Art of War of the Transamur Tribes*, 64.

17. CHERNENKO, *The Scythians*, 1983, 7.

18. A. KIRPICHNIKOV, *Old Russian Arms*, 18; ID., *Art of War in Russia in the 13th-15th Centuries*, Leningrad 1976, 35 (in Russian).

mail<sup>19</sup>. The data provided by the modern re-enactors, prove that correctly made scale armour is almost as elastic as mail and may have similar long sleeves and a skirt<sup>20</sup>.

Despite many positive features (elasticity, good protective properties, simple technology), scale armour also had some flaws. During movement, scales of the armour would rise, which made it vulnerable to piercing weapons<sup>21</sup>. Especially dangerous for scale armour were the piercing thrusts delivered from below<sup>22</sup>. The hazard was greater for the mounted warrior, for the thrusts of the foot soldiers' spear were always directed upward.

Scale armour, widespread in the Scythian period, was gradually ousted by lamellar armour in the Middle Ages, though it did not disappear completely and continued to be used, especially in combination with armour of other types<sup>23</sup>. The latest discoveries prove that even in Europe itself (where it had never been especially popular), scale armour may have been used as late as the 15th- and perhaps the 16th century<sup>24</sup>.

### Lamellar Armour<sup>25</sup>

The first bronze specimens of lamellar armour were found in Egypt,

19. CERNENKO, *The Scythians*, 7.

20. T. DAWSON, Suttgart Hoplon: The Equipment of Regular Byzantine Troops, c.950 to c.1204, in: *A Companion to Medieval Arms and Armour*, 86. However, such a pattern must have been rather rare. Of Scythian equipment only a few specimens of long-sleeved scale armour have survived, most of them being short-sleeved. CERNENKO, *The Scythians*, 7.

21. LUPINENKO, Splint Armour, 117. It was for this purpose that sometimes the lower part of the scales was provided with an additional hole, so that it should be fixed in order to prevent the rising of the scales during movement, for under it the weapon might have pierced the body. CHERNENKO, *Scythian Armour*, 30-1.

22. GORELIK, *Arms of the Ancient East*, 116.

23. SOLOVIEV, *Art of War*, 54.

24. H. C. ROGERS - D. J. LARROCCA, A New World Find of European Scale Armour, *Gladius* 19 (1999) 230.

25. In Georgia the word denoting lamellar armour was *jawshani*. This term is of Persian origin, meaning the body, chest armour. Usually *jawshan* denoted a cuirass of lamellar construction. First it was mentioned in the work of the 9th-century Arab historian al-Baladhuri, who describes the battles between Arabs and Sassanians. In spite of the Persian origin of the term, lamellar armour seems to have been introduced into Iran from Central Asia. D. NICOLLE, Jawshan, Cuirie and Coats-of-Plates; An Alternative Line of Development for Hardened Leather Armour, in: *A Companion to Medieval Arms and Armour*, 191. There is no doubt that the Georgian 'jawshani' comes from this term. D. NICOLLE, *Saladin and*

Syria-Palestine, Mesopotamia, Anatolia in the 2nd millennium BC<sup>26</sup>. Lamellar armour was very popular in Asia especially in its central and eastern parts surviving even to the 19th century<sup>27</sup>.

Lamellar armour is formed of rectangular plates<sup>28</sup>, linked with one another first in horizontal rows, then vertically by means of thongs passed through holes. In contradistinction to scale armour, whose plates are fixed to a single sub-layer, in lamellar armour the plates are first fixed in rows and are then linked to one another<sup>29</sup>. The shape of lamellar plates, the number of holes and, accordingly, the methods of their linking are different. Over the centuries it went through a permanent process of development and evolution on the vast continent of Asia, though the basic principle of linking the plates with thongs remained unchanged.

In order to lessen the probability of damage plates of lamellar armour were fixed with one or two thongs in such a way that the thong remaining on the outer side of the plate should have the minimum length. If one broke the other held the plate in place. At such fixing, the damaged plates could be replaced by any soldier even in field conditions<sup>30</sup>. The method of fixing armour with thongs is basic but not the only one. Plates were fastened with iron wire or by riveting. Such design was sturdier but less flexible<sup>31</sup>.

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*Saracens*, Oxford 1986, 23; Id., *Medieval Warfare Source Book: Christian Europe and Its Neighbours*, London 1998, 166.

In Georgian sources 'jawshani' was first attested in Juansher's 8th-century work 'The Life of Vakhtang Gorgasali': [*Vakhtang*] mounted the horse clad in jawshani. JUANSHER, *The Life of Vakhtang Gorgasali*, in: *Kartlis Tskhovreba [Life of Kartli]*, vol. I, ed. S. QAUKHCHISHVILI, Tbilisi 1955, 154 (in Georgian). As far as the Byzantine world is concerned, the word could be connected with the Greek term "Ζάβα", appearing already in Sixth century sources, see T. G. KOLIAS, Ζάβα, ζαβαρεῖον, ζαβαρειώτης, *JÖB* 29 (1980) 27-35: 27-30.

26. In the 7th century BC iron plates finally ousted their bronze counterparts. GORELIK, *Arms of the Ancient East*, 101-7.

27. M. V. GORELIK, Early Mongolian Armour (9th -1st half of the 14th century), in: *Archaeology, Ethnography and Anthropology of Mongolia*, eds. A. P. DEREVYANKO – SH. NATSAGDORZH, Novosibirsk 1987, 165 (in Russian); Id., *Arms of the Ancient East*, 108-9.

28. Plates may be of metal, horn, hardened leather and some other material. In Georgia leather lamellar cuirass practically does not occur which is not surprising, for Georgia never lacked metal or iron ore.

29. DAWSON, *Byzantine Cavalryman*, 10.

30. SOLOVIEV, *Art of War*, 50.

31. SOLOVIEV, *Art of War*, 51.

Usually, in comparison with scales, lamellar plates are larger<sup>32</sup>. They are more elongated, each provided with more fixing holes, distributed over the entire surface of the plate. The holes were also distributed in pairs<sup>33</sup>. Some of the lamellar plates were convex. Plates of this shape were capable of better repulsing and weakening the strength of the impact of arrows, spears or some other weapons<sup>34</sup>.

Making splint (lamellar and scale) armour was a rather labour-consuming process, though not difficult technologically<sup>35</sup>.

The weight of scale and lamellar armour is almost the same<sup>36</sup>. A complete set of 1-1.5 mm thick armour weighs 14-16 kg.<sup>37</sup> The plates of lamellar armour are arranged in several layers and its protective properties greatly exceed those of mail. A lamellar cuirass, comprising 1.5 mm plates, weighs 5 kg. Such armour withstands the thrusting weapon very successfully<sup>38</sup>. Lamellar armour also protects well from arrows; due to this for a long time it was very popular both with the Eurasian nomads and their neighbours<sup>39</sup>. The force of bludgeoning weapon 'scattered' over the plates of the lamellar armour, saving the warrior's body from injury. A strike with a sword may cause damage of lamellar armour as a result of the breaking of the thongs<sup>40</sup>. Reconstructed lamellar can withstand practically all kinds of strikes, attesting to the special properties of this type of armour<sup>41</sup>.

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32. T. DAWSON, Kremasmata, Kabadion, Klibanion: Some Aspects of Middle Byzantine Military Equipment Reconsidered, *BMGS* 22 (1998) 48.

33. SOLOVIEV, *Art of War*, 50; GORELIK, *Arms of the Ancient East*, 89.

34. A. F. MEDVEDEV, On the History of Plate Armour in Russia, *Soviet Archaeology* 2 (1959) 128 (in Russian); ID., Arms of Great Novgorod, in: *Proceedings of the Novgorod Archaeological Expedition*, v. 2, Moscow 1959, 177-8 (in Russian).

35. LUPINENKO, Splint Armour, 116. Though in comparison with mail, splint armour was much less labour-consuming.

36. GORELIK, *Arms of the Ancient East*, 116.

37. It is 1.5-2 times as heavy as mail. GORELIK, *Early Mongolian Armour*, 186.

38. GORELIK, *ibid.* 186-7.

39. LUPINENKO, Splint Armour, 118. As the bow was the most important weapon of horse-riding nomads, lamellar plates overlapped from right to the left, so that the bowstring should not get caught among them. NICKEL, *The Mutual Influence of Europe and Asia*, 109.

40. O. L. MAKUSHNIKOV – Y.M. LUPINENKO, Lamellar Armour of the Eastern Slav Warrior of the Beginning of the 13th Century (according to the materials of Gomel excavations), *Historical-Archaeological Studies* 18 (2003) 218 (in Russian).

41. DAWSON, Kremasmata, Kabadion, Klibanion, 45.

From the end of the 15th century, lamellar armour was no longer in use in the Near East<sup>42</sup>. It was superseded by combined mail-and-plate armour.

### Byzantine-Georgian Armour

In recent years, a substantial contribution to the study of Byzantine lamellar armour has been made by Timothy Dawson, in whose writings theoretical knowledge is combined with the practical experience of a re-enactor.

Ordinarily, the plates of lamellar armour overlap horizontally. According to Dawson, a new type of lamellar armour emerged in Byzantium from the end of the 10th century, becoming established in the 11th century; in this armour the plates do not overlap but are fixed to the leather side by side<sup>43</sup>.

In Byzantine representations, we find lamellar armour whose rows are separated by narrow bands<sup>44</sup>. Dawson assumes that this is the leather band placed between the rows, separating the plates and neutralizing the scissors effect caused by their movement, which may cut the thongs<sup>45</sup>. Subsequently, further developing his observation, Dawson came to the conclusion that in Byzantine lamellar armour it is not a narrow band of leather that is placed between the plates but wide leather fully lining the plates. Such armour is more flexible horizontally<sup>46</sup> and is easy to make. Later its making was simplified further by riveting the plates on to the leather (instead of fixing them by means of thongs)<sup>47</sup>. Dawson believes that in Byzantium lamellar riveting came into use in the 11th century<sup>48</sup>.

42. DAVID NICOLLE, *The Age of Tamerlane*, Oxford 1990, 39.

43. DAWSON, *Suntagma Hoplon*, 85.

44. Scholars note that early representations of banded lamellar are attested in Central Asia as early as the 8th-9th centuries. HALDON, *Some Aspects of Early Byzantine Arms and Armour*, 79. But it is not the construction occurring in the Georgian-Byzantine lamellar armour (if it is of metal, in general). Here we are dealing with the leather band covering the edges of the armour plates. However, the basic idea of combining metal plates and leather in lamellar armour must have entered this region precisely from Central Asia.

45. T. DAWSON, *Banded Lamellar – a Solution*, *Varangian Voice* 23 (1992) 16.

46. However, in my opinion, owing to the absence of horizontal overlapping, it must have been weaker. In any case, the suspended lamellar rows covered almost half of the length vertically, which means that in order to penetrate into the body the weapon had to pass through two layers of armour. DAWSON, *Kremasmata, Kabadion, Klibanion*, 45.

47. In the representations the riveting is indicated by a bullet point.

48. DAWSON, *Kremasmata, Kabadion, Klibanion*, 44-5.



In the 11th-12th centuries, besides riveted, inverted lamellar also comes into use: the armour sleeves and the skirt are made of inverted lamellar plates, i.e. they are distributed upside down. Ordinarily, lamellar plates overlap from below upward, as arranged in this way they provide best protection of the body from piercing strikes, that are, as a rule, directed upward. But the limbs mostly receive strikes from above. On the limbs, protected with inverted lamellar, the strike slides downward, inflicting less damage<sup>49</sup>.

Dawson's surmise about the emergence of banded lamellar in the 11th century is supported by Georgian data too: in 10th-century representations, the common lamellar is depicted, beginning with the 11th century the banded one appears<sup>50</sup>. It is noteworthy that this phenomenon was not overlooked by art historians in Georgia (explanation of which clearly exceeded the boundaries of their competence). As early as in the 1980s, T. Sheviakova wrote that the appearance of narrow bands between armour plates was observed in Georgia from the 11th century<sup>51</sup>.

A careful study of representations of lamellar suits led me to the conclusion<sup>52</sup>

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49. DAWSON, *ibid.* 46-7; ID., *Suntagma Hoplon*, 89.

50. Maria G. Parani generally believes that Byzantine lamellar bands are the result of the artists' imagination; they have nothing in common with reality and come from erroneous conveying of the shadows cast by the plate rows. In order to prove this view and to refute Dawson's opinion, she points to the existence of a lamellar without bands. MARIA G. PARANI, *Reconstructing the Reality of Images: Byzantine Material Culture and Religious Iconography (11th-15th Centuries)*, Leiden, Boston 2003, 107. I cannot share Parani's point of view; the existence of bandless and banded (also linear) lamellar is indicative of different stages of their development and evolution. The wall paintings of Timotesubani convincingly speak in favour of this idea; in these murals the master depicted side by side banded armour and that with shadows under the plates (precisely like the one Parani speaks of); furthermore, in one of the frescoes [fig. 1] both the bands and the shadows are painted together, which excludes the artist's mistake and indicates that the lamellar band was not used to represent the shadow. Parani too is well aware of the existence of such representations.

51. T. S. SHEVIAKOVA, *Monumental Painting of Early Medieval Georgia*, Tbilisi 1983, 23 (in Russian).

52. Due to the paucity of archaeological material, I have to limit myself only to the observation of specimens of art. I am well aware of the problems such an approach may create and also know that a final conclusion can be made only when additional archaeological data have come to light. Unfortunately, all the researchers into Byzantium and the East of this period have to face the same problems. On such difficulties connected with Byzantine studies, see PARANI, *Reconstructing the Reality of Images*, 101-2.

that we should distinguish between the so-called *banded*<sup>53</sup> and *linear*<sup>54</sup> suits of armour. Since the appearance of these two types of armour are distanced from each other in time too (banded lamellar appears only in the 11th century, while the number of linear ones is great back in the 10th century), it is difficult to ascribe the differences between them only to the interpretation or imagination of their executors. We should rather assume that there was a certain difference in design between them and try to identify the differences. In my opinion, between plates there appears to be one line in the case when the row of plates have a leather lining only in the rear<sup>55</sup>; in banded lamellar the leather lining is behind the plates and the lower part of the plate is also lined [fig. 3c].

It must not have been difficult to arrive at the method of covering the plates in this manner. As a matter of fact, it unites in itself the old method of lamellar construction spread in Asia (when a strip of leather covers the plate edge)<sup>56</sup> and the other, comparatively new technique (lining the plates with leather at the rear) [fig. 3]. Combination of these two methods yields a banded lamellar, when the band is clearly visible (the edge of the leather

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53. When the band between the armour plates is formed of two distinct, upper and lower lines. Such are the icons of Ipari, Shodai, Labechina and St George of Supi, also the frescoes of Warrior Saints of Ipari, Lagurka and Nakipari and many others.

54. When only one line can be seen between the armour plates. Such are St George and St Theodore of the Chukuli icon, St George and St Theodore of the Mravaldzali icon, the Parakheti St George icon and others.

55. It is precisely this type of armour that is the result of Dawson's method: the leather lining placed behind the plate does not form a band.

56. Along the perimeter of the lamellar rows, a leather strip was fixed enfolding the plate edges. It strengthened the structure and protected from traumas that might be caused by the sharp edge of the armour. Such are the remnants of 10th-12th-century lamellar found in Ust'-Ishim. SOLOVIEV, *Art of War*, 51, pl. XI, 5. In fig. 2, the leather enfolding the plate edges can be seen well. The 4th-5th-century armour plates, found in Berel by V. Radlov are almost similar. A. A. GAVRILOVA, *The Burial Ground of Kudyrge, as a Source for the History of the Altai Tribes*, Moscow-Leningrad 1965, 55, fig. 4.13 (in Russian). This similarity between armour plates, separated by several centuries, may be indicative of the fact that in a greater part of Asia the lamellar construction did not undergo great changes and that the evolution of the lamellar started in Byzantium and in Georgia in the 10th century must be a comparatively isolated occurrence. In addition, we can note 6th century lamellar plates with enfolding leather found in Viminacium, which means that the Byzantines were well aware of the Asian type lamellar design. I. BUGARSKI, A Contribution to the Study of Lamellar Armours, *Starinar* 55 (2005) 168, 171.

covering the front of the upper plate forms the upper line of the band, the piece of leather lining the lower plate creates the lower line of the band). In this case the thongs are completely safe from being cut by the plates, the clothes worn under the armour are not damaged either; the wide piece of leather which also covers lamellar plates from the front facilitates greater stability and firmer linkage. It should be noted that the lowest row of lamellar plates, which borders on the kremasmata, is emphasized by a band at the bottom, which must be indicative of the leather enfolding the lower part of the plate<sup>57</sup>.

It must be said from the start that examination of Georgian material enables us to follow the evolution of splint armour, its definite stages and numerous experiments which will be discussed below.

In order to illustrate the road covered by the Byzantine-Georgian lamellar, it would be good to present its prototype, lamellar of the original design, for which we may refer to the Timotesubani fresco, depicting a Warrior Saint<sup>58</sup>. In this picture [fig. 4] the saint is clad in a traditional lamellar cuirass. The lamellar rows consist of laced plates, without riveting, overlapping from right to left; the lamellar rows are linked with numerous suspending thongs and overlap from below upwards. Such was the typical lamellar, in which changes took place almost simultaneously in the Byzantine Empire and the Georgian kingdoms.

In the 10th century, several experiments are noticeable in Georgia (rejection of horizontal overlapping, introduction of leather lining and riveting); these were the first steps taken in the evolution of splint armour. An earlier date of these experiments cannot be excluded either, but we can speak decisively only about the 10th century, when their reflection in the works of art was firmly established.

The introduction of the leather lining between the lamellar rows can be seen clearly on the armour of St George and St Theodore depicted on the 10th-century triptych of the Virgin preserved in the church of Chukuli<sup>59</sup> (fig. 5). Lamellar plates are fixed to the leather lining, the plates do not overlap

57. It is seen well on the frescoes of St Theodore and St George of Nakipari, on the Adishi Warrior Saint's fresco, the Labechina icon of St George on foot and others.

58. **Belonging indeed to a later date, but suitable for demonstration.**

59. G. N. CHUBINASHVILI, *Georgian Repoussé Work*, Tbilisi 1959, 409-10, pl. 46 (in Russian); M. AKHALASHVILI, *10th-15th-century Inscriptions on the Monuments of Repoussé Work in Svaneti*, Tbilisi 1987, 8 (in Georgian).

horizontally but are packed close together. A lamellar made by this method is more flexible, is easy to prepare, economizes 15-20 percent of the material and accordingly reduces the weight of the armour<sup>60</sup>.

The introduction of riveting is attested in the same 10th century, it was apparently used in both types (scale and lamellar) of splint armour.

On the Chikhareshi triptych of the Holy Virgin St George and St Theodore<sup>61</sup> [fig. 6] and two representations of St Theodore<sup>62</sup> depicted on the cross of the Saqdari church are clad in splint armour with two (upper and lower) rivets. Presumably it is scale armour, as it is furnished with long sleeves, which are absent in lamellar armour<sup>63</sup>.

On the Nakuraleshi St George icon<sup>64</sup> [fig. 7] the plates with two (upper and lower) rivets are presented as lamellar armour, where the rows overlap from below upwards. It may be assumed that the suspending thongs of the rows are fixed from the rear to the fastening thongs located on the lower edge of the plates<sup>65</sup>; however, a simpler explanation may be found, if we assume that on the repoussé icons the plates are represented in a slightly simplified manner and they lack the suspending thongs. Plates of this type can be seen in the miniature 60r [fig. 8] of the Minor Synaxarion copied by Euthymius the Athonite in Constantinople in 1030<sup>66</sup>. On the armour plates of St Procopius, the central lines are already discernable, these may be considered to be thongs which are probably absent on repoussé icons.

These types of riveted armour may be ascribed to the imagination of the artist or to an erroneous representation, but for one circumstance: the

60. DAWSON, *Kreasmata*, Kabadion, Klibanion, 44.

61. The Holy Virgin triptych of Chikhareshi church is now lost; my reasoning is based on the photo by Ermakov, N16879. CHUBINASHVILI, *Repoussé*, 411-2, pl. 47; AKHALASHVILI, *Inscriptions*, 9-10.

62. The chancel cross, erected in St George's church in the village of Saqdari, now completely stripped of its ornamentation; my reasoning is based on the photos by Ermakov, N16833 and N16847. CHUBINASHVILI, *Repoussé*, 341; AKHALASHVILI, *Inscriptions*, 13.

63. Though it also should be said that it is problematic to imagine a scale sleeve with such plates.

64. CHUBINASHVILI, *Repoussé*, 339-41, pl. 42.

65. Such a system of fastening occurs in the case of 'invisible' thongs. MAKUSHNIKOV - LUPINENKO, *Lamellar Armour of the Eastern Slav Warrior*, 216.

66. Manuscript A648 at the National Centre of Manuscripts of Georgia. T. D. ZHORDANIA, *Description of the Manuscripts of Tbilisi Ecclesiastic Museum*, v. 2, Tiflis 1902, 132 (in Russian).

existence of this type of plates with riveting is proved by the material of the turn of the 1st and 2nd millennia discovered by Russian archaeologists in Western Siberia. It transpires that fixing armour plates to leather by means of upper and lower riveting was an accepted method. This method was used by the Enisey Kyrgyz as well<sup>67</sup> [fig. 9].

Two icons, uniting many signs of this evolution, should be considered a kind of summing-up specimen of the experiments taking place in that century.

The representations of St George and St Theodore [fig. 10] on the Mravaldzali icon<sup>68</sup> dating from the latter half of the 10th century, and the Parakheti icon of St George of the end of the 10th century<sup>69</sup> [fig. 11] show lamellar plates with double riveting and a double suspension on the leather lining; the plates do not overlap, but are arranged very close together side by side. Practically here all the basic components of the evolution of lamellar armour are present; the only component that is lacking is a wide band, due to which these suits of armour may be grouped with the category of linear lamellar<sup>70</sup>.

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67. SOLOVIEV, *Art of War*, 51, pl. X, 5.

68. It was preserved in the Mravaldzali church of St George, now it is lost; my reasoning is based on the photo taken by T. Kuhne during E. Taqaishvili's expedition to Racha in 1919. CHUBINASHVILI, *Repoussé*, 406-9, pl. 36.

69. It was taken from Parakheti to Mravaldzali; my reasoning is based on the photo taken by T. Kuhne during E. Taqaishvili's expedition to Racha in 1919. CHUBINASHVILI, *Repoussé*, 342-3, pl. 43.

70. The kremasmata of the Warrior Saints evokes interest, with large lamellar plates directed downwards. The reinforcement of a skirt, made of cloth, with metal plates in order to protect the limbs, was introduced into Georgia back in the 10th century, which will shift this date for Byzantium as well. Examination of the icons shows that Dawson's conjecture that in the Byzantine world the infantryman and cavalryman wore similar armour skirts seems to be well founded. In order not to hinder their movement and activities, in both cases such a skirt was fastened in different ways; the infantryman turned the slit of the armour to the side, the cavalryman placed it between his legs (DAWSON, *Kremasmata*, *Kabadion*, *Klibanion*, 49). Both figures of St George, equestrian and on foot, depicted on the Parakheti and Mravaldzali icons wear exactly identical lamellar skirts, but with slits in different places. If this is the case, then here we are already dealing with Byzantine influence, as traces of high standardization must be sought in the state system of Byzantium and not in the feudal society of Georgia.

In the 11th century, search for ‘the ideal splint armour’ becomes more intense and diversified: a banded lamellar comes into use, the method of overlapping the plates downward (the so-called ‘inverted lamellar’) is firmly established, the number of the suspending laces changes; complex, ceremonial, luxurious suits of armour also become numerous.

The Nakipari icon of St George<sup>71</sup> [fig. 12], made in the early 11th century, and St George depicted on the Samtavisi chancel cross<sup>72</sup>, dating to the 1st half of the same century, show a complete ‘inverted’ lamellar with double riveting: the klibanion<sup>73</sup>, the kremasmata<sup>74</sup> and the manikia<sup>75</sup> comprise plates directed downward. The armours differ from one another only in the number of suspending thongs.

Also at the beginning of the 11th century the first specimens of banded lamellar appear. It is noteworthy that the Ipari icon of St George<sup>76</sup> [fig.13], dating from the 1st quarter of the 11th century, shows banded lamellar plates without riveting. This icon, as well as the Labechina icon, representing St George on foot<sup>77</sup>, and the Shodai icon of St George<sup>78</sup>, make it clear that lamellar with riveting is not popular yet.

An interesting attempt at blending banded and riveted lamellar armour is shown on the Labechina icon of equestrian St George<sup>79</sup>, [fig. 14], dating from the second decade of the 11th century. Here on a banded klibanion (as well as on kremasmata) we see plates with (upper – lower) rivets of an earlier type, which later were completely superseded by plates with riveting in their upper part.

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71. Asan Gvazavaidze’s work, done in his youth. CHUBINASHVILI, *Repoussé*, 363-7; AKHALASHVILI, *Inscriptions*, 21-2.

72. CHUBINASHVILI, *Repoussé*, 493-9, pl. 284.

73. Klibanion – short body armour of splint (lamellar or scale) construction. See T. G. KOLIAS, *Byzantinische Waffen* [BV, 17], Vienna 1988, 45-7.

74. Kremasmata – padded skirt for leg protection, often reinforced with metal plates.

75. Manikia – protection for the upper arm, from shoulder to elbow.

76. Made by Asan, commissioned by Marushi. CHUBINASHVILI, *Repoussé*, 358-63, pl. 184. AKHALASHVILI, *Inscriptions*, 17-8.

77. CHUBINASHVILI, *Repoussé*, 261, pl. 56.

78. It was preserved in the village of Ghebi from the Shodi church of St George. CHUBINASHVILI, *Repoussé*, 367, pl. 95.

79. CHUBINASHVILI, *Repoussé*, 326-30, pl. 181.

On the 11th century Supi icon of equestrian St George<sup>80</sup> [fig. 15] a banded lamellar of typical riveted plates is depicted. The lamellar is completely (cuirass, skirt, manikia) ‘inverted’, which means that the experiment of the plates directed downward was also continued in the banded armour.

Finally, a great number of frescoes and specimens of repoussé work depict the already established type of lamellar armour which was most widespread in the 11th-12th centuries and in the following period as well. Its banded cuirass consists of riveted plates directed upward and the kremasmata and the manikia are formed of inverted lamellar plates. Such are the icon of Supi representing St George on foot<sup>81</sup> [fig. 16], St George and other Warrior Saints [fig. 17] depicted in St George’s (Jrag) church in Adishi, clad in a typical banded lamellar with riveting.

Here I should like to dwell on a certain type of armour which more readily than the others could be ascribed to the artist’s imagination, but due to the identity of its author and to its interesting structure it is worth discussing.

Frescoes made in the churches of Svaneti at the turn of the 11th-12th centuries by Thevdore, the court artist of David the Builder, King of Georgia, have come down to us<sup>82</sup>. Saints portrayed by Thevdore (equestrian figures of St George and St Theodore and the figure of the Archangel Michael in Iprari<sup>83</sup>, St Theodore of Lagurka [fig. 18] and St George and St Theodore of Nakipari<sup>84</sup> are clad in similar suits of lamellar armour, which is distinguished by a rather strange design: it is a banded lamellar with riveting between (!) the plates, which fasten the leather of the lower row with the upper one.

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80. CHUBINASHVILI, *Repoussé*, 443.

81. CHUBINASHVILI, *Repoussé*, 563; AKHALASHVILI, *Inscriptions*, 40.

82. The churches, adorned with frescoes by Thevdore, are dated precisely thanks to the surviving inscriptions from which we learn his name and the time of the execution of the work. N. A. ALADASHVILI – G. V. ALIBEGASHVILI – A. I. VOLSKAYA, *The Painting School of Svaneti*, Tbilisi 1983, 30-2 (in Russian). The donor inscription of the Iprari church of the Archangel (Taringzel) reads: ‘it was adorned with paintings in the year of 1096, by Thevdore, the King’s artist’. *Written Monuments of Svaneti (10th-18th centuries)*, ed. V. SILOGAVA, Tbilisi 1988, 70-1 (in Georgian).

83. ALADASHVILI – ALIBEGASHVILI – VOLSKAYA, *The Painting School of Svaneti*, pl. 24, 25, 27.

84. *Ibid.* pl. 60.

If such a design did really exist it must have been more strongly linked<sup>85</sup>, though less flexible.

Apart from the fact that the status of royal artist demanded that he should adhere to certain standards, St Panteleimon's banded lamellar with riveting, depicted on the 12th-century processional cross of Pari<sup>86</sup>, may be used as additional evidence in favour of the armour painted by Thevdore [fig. 19]. Here, too, similarly to Thevdore's frescoes, we find rivets between the plates of the lamellar cuirass<sup>87</sup>.

Judging by the specimens presented above, the evolution of lamellar armour may be considered to have been completed [fig. 20]. Subsequently we no longer witness such diversity of splint armour. Nevertheless, individual experiments did still take place. In this connection interest attaches to the 13th-century fresco of St Theodore, preserved in the church of the Annunciation in the Gareja Monastery; the saint is clad in lamellar armour with a skirt made of plates with triple riveting<sup>88</sup>.

Interesting material on the closeness and resemblance between Byzantine and Georgian armour is provided by comparing one type of lamellar. On the 12th-century fresco of St Nestor in St Nicholas' church in Kastoria the saint is clad in lamellar consisting of rectangular plates with unrounded tops. The economy caused by such plates is not great but it saves much time when making the armour<sup>89</sup>. Many Georgian analogues of this type of Byzantine armour can also be found: on the Sakao icon of St George<sup>90</sup>, dating from the end of the 10th century, the saint is wearing the same banded lamellar<sup>91</sup>. The suits of armour of St George and St Theodore, depicted on the façade of St

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85. In comparison with typical riveted lamellar, where the rows are linked only by thongs.

86. CHUBINASHVILI, *Repoussé*, 524-5; AKHALASHVILI, *Inscriptions*, 37-9.

87. It is not ruled out that here overlapping plates were depicted, but this is alien to riveted lamellar. Such armour, unlike the typical one, must have been very heavy and unwieldy.

88. *Monasteries of David Gareja: Lavra, Udabno*, eds. M. BULIA – D. TUMANISHVILI, Tbilisi 2008, 116 (in Georgian).

89. DAWSON, *Kreasmata*, Kabadion, Klibanion, 48.

90. CHUBINASHVILI, *Repoussé*, 344-8; *Georgian Goldsmithing in the 8th-18th Centuries*, Tbilisi 1957, pl. 98 (in Georgian).

91. The difference is only in the number of rivets: on the lamellar plates of St George there are two rivets, on St Nestor's – only one.



George's church in Adishi [fig. 21], the Armour of St George represented on the 11th-century Lanchvali<sup>92</sup> and Seti<sup>93</sup> icons, are also formed of rectangular plates, their tops left unrounded.

Another very interesting type of lamellar armour is depicted on Georgian repoussé icons and miniatures. Namely, the banded lamellar whose plates are rendered as thin, straight lines by the master. At a glance, such armour may be taken for the master's error, who did not take trouble to depict the plates meticulously and executed them in a simplified manner. Fortunately, archaeological finds from Belarusia do not allow such a conclusion, attesting once more that the old masters depicted reality more often than we had hitherto imagined.

An archaeological expedition headed by O. Makushnikov unearthed a burnt, 13th-century armourer's workshop in Gomel, where 1500 plates of lamellar armour were discovered<sup>94</sup>. These finds allowed reconstruction of some very interesting suits of lamellar, differing from typical armour. As is known, lamellar armour can withstand any weapon, but sword strikes damage its thongs. Masters seem to have always been looking for a method of protecting the suspending thongs, which they did achieve by means of changing the shape of the armour plates<sup>95</sup>. Sword strikes are not at all dangerous for the lamellar armour of such plates, since the thongs practically never come out onto the surface of the plates<sup>96</sup> [fig. 22].

As stated above, lamellar armour of this type with concealed thongs is not rare in Georgian works of art. It is this type of lamellar that St George wears on the Jakhunderi icon of the 11th century<sup>97</sup> [fig. 23]; the fortress guard depicted in the miniature at folio 186v of the Jruchi 2nd Tetraevangelion and the archangel on the Labsqaldi icon, probably dating from the 13th century<sup>98</sup>, are clad in the same type of lamellar armour.

92. CHUBINASHVILI, *Repoussé*, 333-4, pl. 190.

93. CHUBINASHVILI, *Repoussé*, 330-3, pl. 182.

94. MAKUSHNIKOV – LUPINENKO, *Lamellar Armour of the Eastern Slav Warrior*, 214.

95. LUPINENKO, *Splint Armour*, 117.

96. MAKUSHNIKOV – LUPINENKO, *Lamellar Armour of the Eastern Slav Warrior*, 218, fig. 2.5, 9.

97. **Once belonged to St George's church in the village of Jakhunderi, now lost; my reasoning is based on Ermakov's photo, N16874.** CHUBINASHVILI, *Repoussé*, 352-4, pl. 188; AKHALASHVILI, *Inscriptions*; 26.

98. AKHALASHVILI, *Inscriptions*, 72-3, fig. 71.

One type of splint armour, which was evidently for ceremonial use<sup>99</sup>, clearly shows Georgian influence on Byzantine armour.

M. Parani refers to the emergence of a new type of scale armour in Byzantium in the 12th century, which is characterized by a small central protuberance at the end of the plates. Scales of this type are not observed earlier either in Byzantium, or in Central and Eastern Europe or Western Asia. Parani surmises that similar armour might have penetrated into Byzantium from Georgia<sup>100</sup>, this assumption is based on three 11th-century Georgian repoussé icons; and, indeed, on the Khidistavi, Sujuna and Bochorma icons St George is depicted in armour with similar protuberances.

In order to further substantiate Parani's view, I intend to list more examples from Georgian reality, which will make it clear that plates with protuberances were more popular in medieval Georgia and chronologically preceded their appearance in Byzantium. At the same time, another issue calls for specification: in my opinion on the Kastoria fresco<sup>101</sup> described by Parani, St Demetrius wears a lamellar rather than scale armour. The design of the armour gives ground for this statement: the plates with protuberances are packed close together not overlapping horizontally, the thongs, rivets, rows of leather-lined lamellar are discernable, the cuirass is sleeveless. However, this does not change the essence of the matter, – as we shall become convinced further, in Georgia plates with protuberances are attested with both types of armour and Georgia's primacy causes no doubt.

Like St Demetrius, St George on foot of the 11th-century Bochorma icon<sup>102</sup> and St George on foot of Sujuna<sup>103</sup> wear a lamellar cuirass comprised of plates with protuberances directed downwards. Careful examination of the armour plates on large-sized representations<sup>104</sup>, shows that what is depicted on the Bochorma and Sujuna icons is not scale but lamellar armour: thongs running along the entire length of the plates are clearly visible, which

99. The specially decked out, festive character of the armour with protuberances was noticed by Parani in *Reconstructing the Reality of Images*, 110.

100. However, due to the absence of concrete proofs, she leaves the question open. PARANI, *ibid.* 111.

101. Depicted in the church of Sts. Anargyroi at Kastoria in c. 1180. PARANI, *ibid.* pl. 123.

102. CHUBINASHVILI, *Repoussé*, 429-44; *Georgian Goldsmithing*, 21, pl. 50.

103. CHUBINASHVILI, *Repoussé*, 568; *Georgian Goldsmithing*, 22, pl. 64.

104. CHUBINASHVILI, *Georgian Goldsmithing*, pl. 50, 64.

is characteristic of lamellar; neither do the plates overlap horizontally and both cuirasses are sleeveless.

As for the icon of St George of Khidistavi [fig. 24], created in the first third of the 11th century<sup>105</sup>, its kremasmata and manikia are really composed of scale plates with protuberances, but it is hard to be definite about the cuirass, hence they may be both lamellar and scale armour.

The Archangel Michael painted by Thevdore in the Iprari church in 1096 is clad in kremasmata comprising plates with protuberances directed downward<sup>106</sup>.

The armour of the Warrior Saint of Pavnisi is formed of laced plates with protuberances directed upwards [fig. 25]<sup>107</sup>. The plates directed upwards finally make it clear that there was such a type of lamellar as well and that we are not dealing with the artist's interpretation of scale armour.

The Warrior Saint depicted in Timotesubani at the turn of the 12th-13th centuries also wears a lamellar cuirass comprised of laced plates with protuberances directed downward [fig. 26].

Armour with protuberances is characterized by vertical lines between the plates, which is quite incomprehensible from the viewpoint of a rational design<sup>108</sup>. If such a structure did exist and it was not the result of the artists' imagination, it should be considered a specimen of excessively complex, decorative and luxurious ceremonial armour.

What conclusion may be drawn from the above-cited specimens of armour? It is quite possible that the great diversity of splint armour, which I have presented, may not correspond to reality and may have often resulted from the artist's imagination. Nevertheless, it must be said definitively that the master's errors alone will not be sufficient to account for such diversity and that a large part of the armour presented here did exist.

105. CHUBINASHVILI, *Repoussé*, 256-9, pl.153; *Georgian Goldsmithing*, 22, pl. 53.

106. ALADASHVILI – ALIBEGASHVILI – VOLSKAYA, *The Painting School of Svaneti*, pl. 25.

107. E. L. PRIVALOVA, *Pavnisi*, Tbilisi 1977, pl. 15 (in Russian).

108. P. Beatson assumes that the presence of dividing lines on the representations can be explained by the fact that the ridged lamellar plates, discovered during the excavations at the great palace in Istanbul, overlapped; unfortunately this assumption cannot account for the presence of lines between the lamellar plates on Georgian icons. P. BEATSON, *Byzantine Lamellar Armour: Conjectural Reconstruction of a Find from the Great Palace in Istanbul, Based on Early Medieval Parallels*, *Varangian Voice* 49 (1998) 6.

Now, it would be right to ask the following question: did Georgia influence the development of Byzantine lamellar armour? And, it is indeed hard to find a type of Byzantine armour whose analogue could not be found in Georgia, but if the tables are turned, the picture will be somewhat different. In Byzantium, various types of armour are hard to be found or appear later: lamellar with upper and lower riveting, with riveting between the plates, lamellar with concealed thongs, lamellar entirely directed downward; there are only a few specimens of armour with protuberances; in the 10th-century riveted plates do not occur on Byzantine representations, nor rectangular ones with unrounded top part.

What contributed to such diversity of Georgian armour and advanced technologies? First of all the basic facilitating factor must have been Georgia's geographical location and permanent contacts with the nomadic North<sup>109</sup>, and with the Iranian-Arabic-Byzantine world in the south, and with various systems of armament; in the 9th-10th centuries a strong impetus to the development of armament must have been given by the emergence on Georgian land of new kingdoms which were engaged in incessant wars with their neighbours; the same can be said about the feudal system that existed in Georgia and the rich and numerous feudal class, which, evidently, encouraged individual experiments with weapons, unlike Byzantium, where the system of armament was on state footing and was distinguished by a high degree of standardization.

It should be said that this situation finds due reflection in technical literature and in the sources. Many foreign authors note the heavy armament of Georgians in the given period<sup>110</sup>. Yovhannes Draskhanakertc'i describes

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109. Nomadic influence is indicated by the relief representation of St Theodore on the western portal in the Nikortsminda church (1010-14), where the Saint wears a long-scale armour, its pattern being reminiscent of the nomads' armour. N. ALADASHVILI, *Nikortsminda Reliefs*, Tbilisi 1957, pl. 19 (in Georgian). Such a type of long armour was characteristic of Central Asia, whence it spread all over the world. M. GORELIK, *Oriental Armour of the Near and Middle East from the Eighth to the Fifteenth Centuries as Shown in Works of Art*, in: *Islamic Arms and Armour*, ed. ROBERT ELGOOD, London 1979, 40.

110. It is significant that in order to illustrate the Byzantine cavalry armament becoming 'heavier' in the 10th century, Western scholars give an example of the heavy armament of the Warrior Saints depicted in the Nikortsminda church, i.e. an example of the armament of Georgia, their neighbor. D. NICOLLE, *The Impact of the European Couched Lance on Muslim Military Tradition*, *The Journal of the Arms and Armour Society* 10 (1980) 11.

the army of Western Georgia (the Abkhazian Kingdom) in the 10th century in the following way: *A numerous army, with steeds prancing in the air, the warriors wearing iron armour, formidable helmets, cuirasses with nail-studded iron plates and sturdy shields, adornments, spears and swords*<sup>111</sup>. ‘The nail-studded iron plates’ undoubtedly stand for lamellar cuirass with riveting, with ‘the nail’ meaning rivet. The 11th-century Byzantine author Michael Attaliates emphasizes the Georgians’ heavy armament in the war even with the Byzantines, saying that *the courage of Georgians was not only due to their great number, but to the fact that they were protected by the strongest armour and not only they themselves but their armoured and invulnerable horses were also covered (with armour) on all sides*<sup>112</sup>. In the same 11th century, Aristakes Lastivertc’i specially notes the heaviness of the Georgian armament and even says it is the reason of one of their unsuccessful attacks against the Byzantine<sup>113</sup>.

From this vantage point, it is very interesting to look at the interrelation of Byzantium with its Caucasian (namely, Georgian) neighbours in the matters of armament. In the first place it is worth noting that these relations were fairly close, which facilitated exchange of military technologies<sup>114</sup>. There is no doubt that the Byzantine military machine exerted considerable influence on its neighbours<sup>115</sup>, though an opposite phenomenon can also be noticed. Due to its location, Georgia came in touch with the North Caucasian and Central Asian nomads more often than Byzantium, it was

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111. Draskhanakertc’i, *History of Armenia*, ed. E. TSAGAREISHVILI, Tbilisi 1965, 257 (in Georgian). Here I take an opportunity and thank E. Kvachantiradze for comparing the translation with the Armenian original and checking its accuracy.

112. Attaliates, *History*, ed. S. QAUKHCHISHVILI, Tbilisi 1966, 27 (in Georgian). I thank K. Nizharadze for the new, precise translation of the passage. Michaelis Attalioiae *Historia*, ed. I. BEKKER, Bonn 1853, 234.

113. Lastivertc’i, *History*, ed. E. TSAGAREISHVILI, Tbilisi 1974, 51 (in Georgian).

114. Discussion of Georgian-Byzantine relations would lead us too far. They were especially intensive in the period under discussion and were characterized by joint battles against the Arabs, participation of Georgians in the civil wars in Byzantium and, finally, almost a century-long confrontation with each other.

115. Nevertheless, Georgian military terminology came under a stronger influence of the Persian and Arabic languages.

via Georgia that some novelties in their armament, direct or transformed, may have found their way to Byzantium<sup>116</sup>.

In spite of all that has been said above, as I have already noted, in the absence of archaeological evidence and on the strength of only iconographic data, it is difficult to give a positive answer to the question that has been posed and to assert anything definitively. At the same time it can be said without any doubt that Georgia can be considered one of the major centers of the manufacture of splint armour and of innovations, and that some of the types of armour widespread in Byzantium, may have originated there.

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116. In D. Nicolle's view, the lamellar penetrated into Iran from Central Asia, subsequently spreading to the Caucasus and Anatolia. D. NICOLLE, *The Military Technology of Classical Iran*, Thesis Presented to the University of Edinburgh for the Degree of Doctor of Philosophy (1982) 173.



Fig. 1. Shadows under the plates on the skirt of the Warrior Saint in Timotesubani are expressed as a brown line by the artist, but on the lamellar cuirass both the bands and shadows can be seen. (photo by S. Sarjveladze).

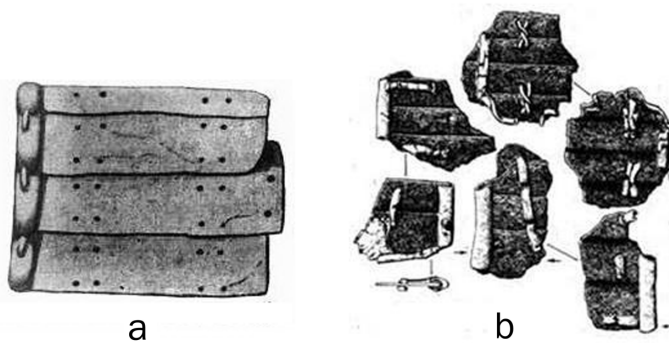


Fig. 2. a) Armour plates found in Bereli, after Gavrilova (fig 4.13); b) Ust'-Ishim lamellar plates with leather, after Soloviev (pl. XI, 5).

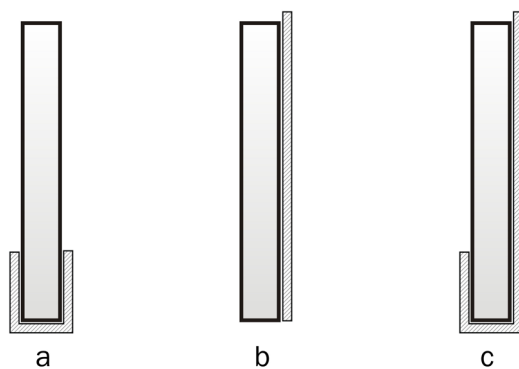


Fig. 3. Side view of the lamellar plate: a) with the leather covering the edge, b) with leather backing, c) with leather backing and encasing the front lower part of the plate.



Fig. 4. Saint from Timotesubani clad in the traditional lamellar cuirass.  
(photo by S. Sarjveladze).





Fig. 5. St George of Chukuli in the lamellar backed with leather, after Chubinashvili (pl. 46).

Fig. 6. St George of Chikhareshi in the armour with two rivets, after Chubinashvili (pl. 47).

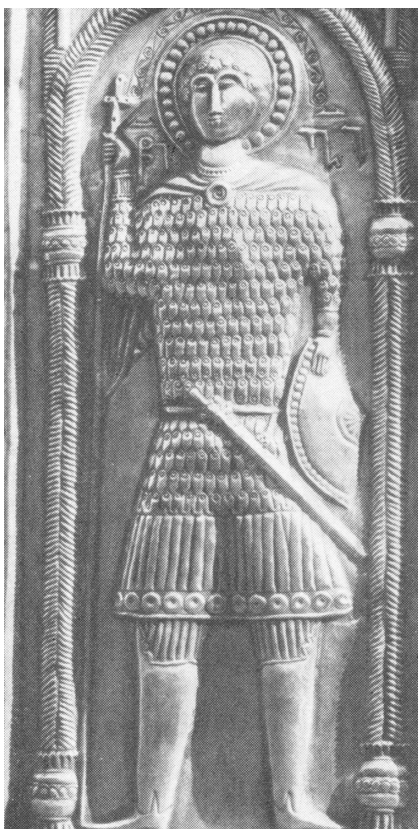




Fig. 7. St George of Nakuraleshi in the lamellar with two rivets, after Chubinashvili (pl. 42).



Fig. 8. St Procopius in the lamellar with two rivets. Manuscript A648, p. 60r, National Centre of Manuscripts of Georgia.



Fig. 9. Armour plate with two rivets,  
after Soloviev (pl. X, 5).

Fig. 10. St George clad in the linear  
lamellar with double riveting on  
the Mravaldzali icon. (photo by  
Ermakov).



Fig. 11. St George of Parakheti in the  
linear lamellar with double riveting.  
(photo by Ermakov).



Fig. 12. St George of Nakipari clad in the 'inverted' lamellar with double riveting. (photo by S. Sarjveladze).



Fig. 13. St George of Ipari in the banded lamellar without riveting, after Chubinashvili (pl. 184).



Fig. 14. St George of Labechina in the banded lamellar with two rivets, after Chubinashvili (pl. 181).



Fig. 15. St George of Supi in the banded 'inverted' lamellar with riveting. (photo by S. Sarjveladze).



Fig. 16. St George of Supi, in the typical banded lamellar with riveting. (photo by S. Sarjveladze).



Fig. 17. Warrior Saint (St Theodore?) of Adishi in the typical banded lamellar with riveting. (photo by S. Sarjveladze).



Fig. 18. St Theodore of Lagurka, well-preserved representation of the lamellar with riveting between the plates. (photo by S. Sarjveladze).



Fig. 19. St Panteleimon on the processional cross of Pari. (photo by S. Sarjveladze).

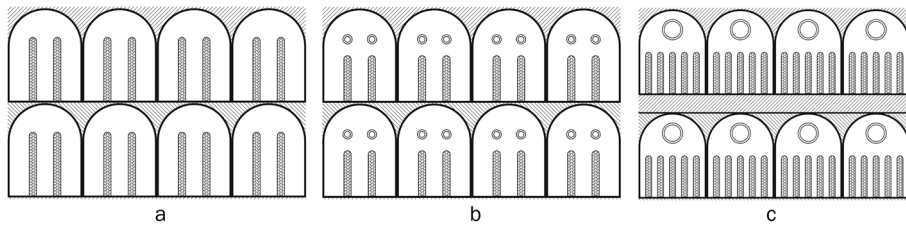


Fig. 20. a) First stage of the evolution of the lamellar armour – introducing leather backing (according to the Chukuli triptych), b) Second stage of the evolution – linear lamellar with double riveting (according to St George of Mravaldzali), c) Third stage – typical banded lamellar with riveting (according to the Adishi frescoes). Hatching oriented in different directions indicates the leather backing of different lamellar rows.



Fig. 21. St George in the lamellar with rectangular plates on the façade of the Adishi church. (photo by S. Sarjveladze).



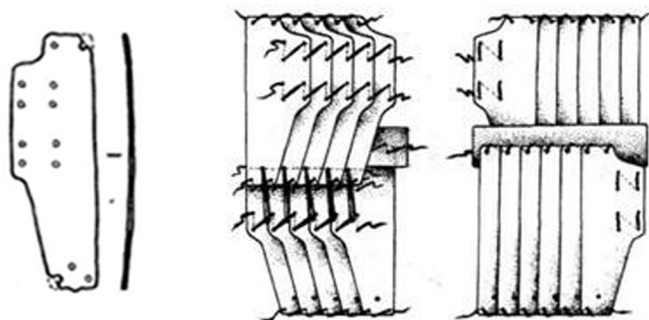


Fig. 22. Type of the plate discovered in Gomel and reconstruction of the armour, after Makushnikov and Lupinenko (fig. 2.5, 9).



Fig. 23. St George of Jakhunderi in the lamellar with concealed thongs, after Chubinashvili (pl. 188).



Fig. 24. St George of Khidistavi in the lamellar with protuberances, after Chubinashvili (pl. 153).



Fig. 25. Warrior Saint of Pavnisi in the lamellar with protuberances, after Privalova (pl. 15).



Fig. 26. Warrior Saint of Timotesubani in the lamellar with the protuberances oriented downward. (photo by S. Sarjveladze).

THE EVOLUTION OF SPLINT ARMOUR IN GEORGIA AND BYZANTIUM  
LAMELLAR AND SCALE ARMOUR IN THE 10TH-12TH CENTURIES

Byzantine technology was part of the military technology that existed in vast areas of Eurasia; hence study of the armament of its neighbours is important.

The purpose of the present paper is to add new data about Byzantium's Caucasian neighbour (namely, Georgia). Besides that, it also includes certain views about the stages of the evolution and provenance of splint (scale and lamellar) armour. This paper also attempts to clarify the difference between *banded* and *linear* suits of lamellar armour.

There is no doubt that the Byzantine military machine exercised considerable influence on its neighbours, though an opposite phenomenon can also be noticed. The article shows that changes in armour were taking place almost simultaneously in the Byzantine Empire and the Georgian kingdoms and that some of the types of armour that were widespread in Byzantium may have originated in Georgia.

