weiter beweisen, daß die Terra sigillata der Westerndorfwerkstätte aus dem Barbaricum quantitätsmäßig bei weitem die Erzeugnisse aller anderen Werkstätte überbieten.

Eine wichtige Rolle im Terra-sigillata-Import im Barbaricum hatten die Werkstätte aus Pfaffenhofen gehabt. Diese stellen 7,4% der Gesamtheit der importierten Sigillata dar, ein Prozentsatz der größer als in jedwelcher Stadt der Provinz Pannonien ist. Schon seit längerer Zeit hat sich die Frage gestellt, ob die Luxusware, einschließlich der Terra-sigillata-Keramik, im Barbaricum als Import oder als Beute zu betrachten sei. Nach aufschlußreichen Analysen ist Gabler zur Schlußfolgerung angelangt, daß nur 9% der Terra-sigillata-Keramik als Beutestück zu betrachten sei. Die überwiegende Zahl der im Barbaricum entdeckten Sigillata unterscheidet sich von der der pannonischen Ware. Man kann im Barbaricum eine Vorliebe für bestimmte Formen oder für Gefäße mit bescheidener Verzierung feststellen, im allgemeinen für Erzeugnisse die von den Käufern der Provinz vermutlich nicht angenommen gewesen wären. So gelangt man zur Schlußfolgerung, daß die betreffenden Werkstätte speziell Waren für das Barbaricum, entsprechend dem Geschmack der Empfänger, erzeugten. Also wurden die Sigillata durch den Handel gebracht. Man setzt auch die Anwesenheit von Marktplätzen in den auf dem rechten Donauufer gelegenen Städten, vor allem in Aquincum, voraus, die als Einkaufszentren der Bewohner des Barbaricums gedeutet werden können. Es gab aber auch Hündler die eine bestimmte schon im voraus bestellte Ware brachten. Die Verfasser erwähnen drei wichtige Strassen, die, ausgehend aus Pannonien, das Barbaricum durchquerten und in Dazien gelangten: Aquincum-Porolissum, Intercisa-Resculum und Lugio-Micia, Andrea A. Vaday, eine gute Kennerin des römerzeitlichen Barbaricums, behandelt die Terra-sigillata-Keramik im Rahmen des römischen Imports. Es wird die besonders interessante Sachlage hervorgehoben, daß der Anteil des römischen Imports in den sarmatischen Gräbern 18,8%, in den Siedlungen aber nur 1% beträgt.

Innerhalb des gesamten römischen Imports nimmt die Keramik mit 10,1% nur den dritten, während die Fibel mit 68,8% und die übrigen Kleinwaren mit 23,1% den ersten beziehungsweise den zweiten Platz einnehmen.

Im zweiten Teil des Bandes, führt Andrea Vaday den Katalog der Terra-sigillata-Imitationen vor. Sie konnte feststellen, daß die Zahl dieser Imitationen viel kleiner, als man früher zu glauben geneigt war, ist. Es wurden vornehmlich Gefäße der Form Drag. 33 nachgeahmt. Die weite Verbreitung der Terra-sigillata-Imitationen lässt sich mit dem Umstand erklären, daß sie billiger waren und die Werkstätte in der Nähe der Handelswege lagen.

Die Arbeit wird von einem reichhaltigen Abbildungsmaterial begleitet. Diagramme, synoptische Tabellen und Karten erleichtern dem Leser das Begreifen der Schlußfolgerungen zu denen die Verfasser angelangt sind.

Das von uns besprochene Buch ist ein Vorbild für das Studium der Terra-sigillata-Keramik und stellt den Beweis dar, daß die genaue Analyse dieser Keramikgattung zu aufschlußreichen Einsichten in das wirtschaftliche, geistliche und sogar politische Leben führen kann.

G. Popilian

M. C. BISHOP (ed.), *The Production and Distribution of Roman Military Equipment. Proceedings of the Second Roman Military Equipment Research Seminar*, Oxford, B.A.R. — S275, 1985, pp. XII + 377.

In 1983 a group of English scholars working in the field of Roman weapons held "The First Roman Military Equipment Research Seminar" whose papers dealing mainly with methodological aspects were published in a small volume[1]. The first meeting was so successful that it was decided to turn it into an annual event where both English and foreign scholars could take part.

Thus, in 1984, a second seminar was held, but this time a specific theme was discussed, namely the production of military equipment. Archaeologists from England as well as from France, Holland, and Germany either took part personally or sent their papers.

Due to the help provided by the B.A.R. publishing house and to the editor, M. C. Bishop, who spared no efforts, the results of this second meeting of students in the field of Roman weapons could be printed with a promptitude worth praising in the volume we are going to present.

Before dealing with the contents of each paper separately, a preliminary remark should be made. This book comprises three parts: the first one includes three general papers concerning the production of Roman military equipment; the second one consists of several articles presenting different types of military objects; the third one is a monograph of archery equipment.

Further on I concentrate upon the articles presenting subjects of wider interest or upon those where the author's opinions and mine differ on certain peculiar points.

M. C. Bishop's paper intends to clarify the process of metal-working in the military *fabricae* in the 1st century A.D. as well as some general aspects concerning the production of arms. This interesting study starts with a detailed examination of the sources that the author wishes to be drawn, wherever possible, from the analysed period, that is the 1st century A.D. As literary sources, B. presents a fragment of Taruttienus Paternus preserved in Justinian's *Digest*, and a fragment of Vegetius, II, 11. But the list of *immunes* from the fragment of Paternus must refer to a later period than the 1st century, as even the rank of *immunes* was known only starting with the 2nd century, and the author himself wrote towards the end of the 2nd century. Also, it is very difficult, if not impossible, to believe that the fragment of Vegetius describing the duties of the *praefectus fabrum* refers to the reality of the 1st century, moreover Vegetius himself might have used Paternus. And the final statement that each legion had to be self-sufficient is not grounded on the realities of the 1st century, as B. believes, but represents a desideratum of Vegetius facing the difficulties caused by the defensive policy of the Empire in the 4th century.

The chronology and even the real meaning of the sub-literary sources used by B. are debateful. Thus the Berlin Papyrus 6765 preserving a record of two days' activity within a legionary *fabrica*, may be that of *legio II Traiana Fortis*, dates to a later period, the 2nd or 3rd centuries A. D. And, here a more complex situation is pictured as besides *immunes*, representing of course legionaries, are also recorded *cohortales* (probably auxiliaries), *pagani* and maybe slaves as well.

Only the two tablets from Vindolanda, *Tab. Vindol.* 1 and 3, date to the period examined by the author. However, *Tab. Vindol.* 1 lists 343 soldiers sent to different construction works and thus not directly related to the activity of the *fabrica*. Moreover, one of the two documents from Vindonissa, namely the votive inscription of Tib. Iulius Agilis, was probably set up by a civil *gladiarius*, as M. Speidel tends to believe[2].

[1] M. C. Bishop (ed.), *Roman Military Equipment. Proceedings of a Seminar held ... at the University of Sheffield* (Sheffield, 1983). pp. 28.

[2] M. Speidel, *Jahresbericht der Gesellschaft Pro Vindonissa*, 1983, pp. 31—34.

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Hence, the literary sources called into question, save for *Tab. Vindol.* 3, either belong to a later period, or have nothing to do with the military participation in the process of weapons manufacture.

The archaeological evidence of the production of military equipment in forts during the 1st and early 2nd centuries A.D. is much richer, though, due to the different level of research, it is limited to the Rhine frontier and to Britannia. We quite agree with the original results the author manages to reach through an outstanding analysis. He starts by noting that, up to now and in spite of all attempts, no building has been conclusively identified as a *fabrica*. Then, that most military equipment artefacts unearthed in forts have not been accidentally lost, but purposely discarded in special pits as deteriorated pieces in order to be remelted and recycled. And when the Roman troops withdrew from a site, they used to abandon a large number of damaged items either by lack of means of transport or because they considered them worthless.

Based upon the archaeological evidence, B. attempts a reconstruction of the production system of a military *fabrica*, but we cannot understand why he claims that civil craftsmen working for the army had to perform all stages of the job by themselves being thus geared to an extremely low level of production.

We also call into question the statement that craftsmen working in *fabricae* of the frontier legions in the West were almost certainly free of any central control as this hypothesis runs counter to the undeniable unity of the Roman military equipment.

B. considers that the reason for the lack of archaeological evidence concerning the production of military equipment in the forts of the Eastern half of the Empire is the fact that in the respective areas large factories belonging to the *polis* were in charge of producing the equipment for the army.

As for us, we think it is unfair to prognosticate starting from a completely unknown situation ascribed to the lack of archaeological excavations in the Eastern forts and that we should stick to the traditional theory according to which the difference between the East and the West of the Empire is due to a research blank. Thus even in the *P. Berlin* 6765, used as a source by the author himself, mention is made of Roman soldiers in the East who undertook the task of producing military equipment in *fabricae* together with civil craftsmen. Another papyrus, *Stud. Pal.* XXII, 92, proves that other weapons were purchased by *equites singulares* from civilians, most likely for a central armory of the province located in Alexandria [3].

Hence we still believe that both in the East and in the West the provisioning system was in general the same, that is military equipment was secured either by purchase from civil craftsmen or by self-production in the military *fabrica*, and that anyway the legions couldn't have met their needs by themselves.

B.'s hypothesis that the new legions were recruited within the Mediterranean zone because in this area there were several *polis* able to provide large amounts of equipment is certainly wrong. The reason should be that the legions were made up of Roman citizens who, during the 1st century A.D., couldn't be found in a large number in frontier areas.

In the end stress should be laid that B.'s stimulating paper highly contributes to a better understanding of the military equipment production in Roman forts during the 1st century A.D. But the generalization for the Western part of the Empire of this pattern of supply and the tendency of underestimating the civilian production which at present lacks archaeological evidence and is only based on epigraphic and literary sources, seem unconclusive to us, as well as the so-called essential difference between the supply system of the Roman troops in the East and in the West.

C. van Driel-Murray's contribution is concerned with the production and supply of military leatherwork in the 1st and 2nd centuries A.D. The well-known scholar in the field of Roman leatherwork stresses from the very beginning the characteristic features of this research field : the scarceness of the available evidence, difficulties in dating it due to the fact that the richest source of Roman leatherwork are waterlogged deposits, that most of them are refuse pieces, so that leather is, in many respects, an atypical product. Among the conclusions reached by the author as a result of a penetrating analysis, we would like to point out the fundamental inference that the uniformity of the equipment over a wide geographical area and a long period in time implies a firm central control. Then, that the army exploited every possible method to meet its leatherwork requirements. Of highly methodological importance is the delimitation of two types of provisioning : the conquest and the consolidation period systems. This way of understanding the archaeological evidence seems to us better than the strictly chronological one.

In the end we should add that this synthesis concerning a peculiar field has led the author to results that go beyond the noteworthiness of the subject proper.

In the study concerned with the manufacture and supply of bronze fittings to the Roman army, J. Oldenstein extends the analysis of his classical study "Zur Ausrüstung römischer Auxiliareinheiten" [4] to the 1st century A.D. as well. Mastering the whole bibliography, O. remarks with good reason that it is hardly possible "without intensive special studios... in the different provinces to give any more than a general approach to the question of the production and distribution of Roman military equipment". But the subsequent remark, that during the 2nd and 3rd centuries there is a large number of mountings typical of one province, is lacking good evidence, as only two regions have been adequately studied so far, that is Britannia and the German/Raetian *limes*. Personally we believe that the publication of mountings from other provinces will modify the present picture in the sense of diminishing the number of types with a limited distribution. Our assertion is based on two facts. First, the military equipment in Dacia is similar to a great extent to that on the German/Raetian *limes*. Then, that Britannia, due to its isolation during the 3rd century has a special situation in certain fields of military life and thus cannot provide an accurate comparative term for the determination of the spreading area of items discovered on the continent. The statement that *legio I Italica* was recruited as well as *legio II* and *III Italica* during the Marcomannic wars is, doubtlessly, either a typist's error or a misprint, and thus we won't insist upon it anymore.

Overlooking such details, we are persuaded that future research works will corroborate the general conclusions reached by O. as a result of his unrivalled knowledge of the subject and of an accurate analysis. Mention should be made of the thesis that the supply of military equipment to the Roman troops in the whole Empire was complex, using the civilian production and the fort *fabricae* side by side, and thus no major regional differences can be discerned. Another valuable idea is that in the respective centuries there are three phases differing from each other according to the ratio of the various sources of supply of military equipment to the army. In the phase of occupation covering the period from Augustus to Claudius/Nero, the army was fully dependent on the supply from the central regions. During the phase of consolidation, from the Claudian/Neronian to the Flavian period, the provincial troops gradually became independent of imports from the central regions. In phase three, dated from the late Flavian period to the middle of the 3rd century A.D., the continual romanization leads to a more or less economic independence of the new provinces.

The second part of the book "The Artefacts" groups together 6 papers. L. Allason-Jones' contribution concerning "Bell-shaped studs", J. Bennett's about a cheek-piece and J. Paddock's referring to the manufacture and supply of Roman helmets are representative models of the way pieces

[3] *Idem, Proceedings of the XVIth Int. Congr. of Papyrology*, Chico, 1981, pp. 405—409.

[4] J. Oldenstein, *Zur Ausrüstung römischer Auxiliareinheiten*, BerRGK, 57, 1976, pp. 80—85.

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should be published according to the demands of modern methodology.

M. Feugère re-examines a category of pieces, *cingulum* decorated bronze studs, which have been recently studied by G. Ulbert[5] in a well-known monographic article. After the author adds a few pieces unearthed lately, he details Ulbert's typology and uses the chorological method. Hence, he draws the conclusion that the studs represent imperial gifts to the soldiers and that they were produced in a single official workshop on Besançon. If it is obvious that most decorated studs were related in some way to the imperial propaganda, as the coins they copy, for the moment we cannot state precisely the manner the soldiers acquired them. We also need more evidence for the hypothesis that these artefacts were produced in Besançon. Thus, even if here 200 items were found representing 73% of the entire lot, since all of them belonged to a single funeral inventory, this discovery is lacking the significance of decisive proof assigned to it by M. Feugère.

In his ample paper I. R. Scott discusses the chronology, the typology, the location of manufacture and the production system of first-century Roman daggers. Starting from a *corpus* of largely complete daggers and of inlaid sheaths, the author establishes a series of technical peculiarities bearing typological and chronological significance. The minute typology, especially of inlaid sheaths, reached by S. enables him to set up the chronology for a great many daggers. However, we cannot understand the statement that the Roman army no longer used daggers by the end of the 1st century A.D. since, leaving aside Dacia where we know 5 pieces, only the well-known hoard from Künzing contains 51 daggers with plain sheaths dated about A.D. 250.

Moreover, G. Webster, in the next study concerning decorated dagger scabbards in Britannia, makes the adequate difference between standard plain sheaths, as met in the Künzing hoard, and daggers with inlaid sheaths belonging to the legionary equipment in the 1st century A.D. Likewise, another important idea of W. is that, though the difference in design and execution of decorated sheaths may have a chronological value, at least to a certain extent the main reason was the different amount paid by the owners of the respective weapons.

Coming back to S.'s paper, we must point out that even if the establishment of distribution geographical areas seems credible, the location of manufacture centers is not founded on any reliable evidence. Yet another assertion, that during the Neronian period the manufacture of daggers is taken out of the hands of civilian specialists and placed in the hands of the army's craftsmen from legionary workshops, is grounded only on some preconceived ideas concerning the general ways of supplying the army with military equipment. Hence, though S.'s concrete study of daggers with inlaid sheaths is praiseworthy, some of his general conclusions are ungrounded or even inaccurate.

Finally, J. C. Coulston, in a 146 pages monograph, presents the Roman archery equipment up to the 6th century A.D. As this subject has been thoroughly studied but only in partial articles, the author mainly insists on some technical aspects which he discusses in the light of comparative evidence provided by bows used up to recent times by Turkish peoples or by the study of Islamic archery literature. The bibliography C. makes use of is impressive and on the whole the picture offered by the paper is coherent. An original contribution is the inclusion in the catalogue of Roman laths from the Empire, alongside the well-known curved ear laths with nocks for the bow-string, of another group of laths with square ends placed in the handle-area. The author also lays stress on the presence of bows in un-military contexts or in places where no *sagittarii* units have been recorded, as for example in legionary fortresses.

Due to the great amount of information it contains and to the rigorous method it uses, C.'s synthesis can be regarded as a work of reference that no one dealing with Roman archers could ignore.

In the final part of this review it is proper to make some general remarks about the entire book. The main theme proposed, the production and distribution of Roman military equipment, is hard to be studied at the present level of information, as it was illustrated by the different ways some of the authors have dealt with the same theoretical problem or by the reservations expressed above. Therefore we consider that, as far as the study of military equipment is concerned, we are still at the stage of accumulating information, and that the main research trend should be the publication of monographs on archacological sites, of monographical studies on certain types of pieces and of provincial syntheses. And at least until the extension of our knowledge about the military equipment to the whole European border of theEmpire, the traditional opinions concerning the production of these artefacts, represented and exemplified in our volume by C.van Driel-Murray, J. Oldenstein and G. Webster, are the best-grounded.

Thus the main gain of this first collection of papers about Roman military equipment is less an original answer to different theoretical problems than an enrichment of the information and the use of a modern investigation method characterized by a higher accuracy in registering technical data. Anyway, due to the necessary growth of specialization, the collections of studies on different research fields, as the present one, certainly represent the future of archaeological publications.

Liviu Petculescu

JOACHIM WERNER, *Der Schatzfund von Vrap in Albanien. Beiträge zur Archäologie der Awarenzeit im mittleren Donauraum.* Mit einem Anhang von Peter Stadler in : Studien zur Archäologie der Awaren 2, Österreichische Akademie der Wissenschaften, Philosophisch-Historische Klasse. Denkschriften 184. Band, Verlag der Akademie der Wissenschaften, Wien, 1986, 86 Seiten Text mit 20 Abb., 32 S/W Tafeln, 6 Kartenskizzen, in 4⁰.

Prof. Joachim Werner, München, widmete einen Teil seiner Tätigkeit der letzten Jahre der Untersuchung von zwei Schätzen, die äußerst interessante Probleme für Mittel- und SO-Europa aufwerfen.

Der Schatz von Vrap wurde 1901 in einer Hügelzone nahe dieser Ortschaft in 600 m Höhe ü.M. zwischen den Quellen der Flüsse Shkumbin im Süden und Erzen im Norden in einem Kupferkessel entdeckt. Vrap liegt ca. 25 km Luftlinie südlich von Tirana und ca. 12 km Luftlinie nördlich von Pequin, dem antiken *Clodiana*, das an der römischen Hauptstraße Via Egnatia lag. Der Schatz wurde erstmalig von dem Wiener Kunsthistoriker Josef Strzygowski in seinem 1917 erschienenen Buch *Altai-Iran und Völkerwanderung* veröffentlicht.

Der zweite Schatz erschien 1894 in Erseke (Bez. Kolonja) am Westabhang des Grammos-Gebirges ebenfalls in Albanien, nahe der griechisch-albanischen Grenze.

Der Schatz von Erseke enthielt vier goldene und sechs silberne Gürtelbeschläge, die von R. Camber in dem Katalog *The Avar Treasure*, London u. Bradford, 1981, erwähnt sind. Dazu kommen zwei byzantinische Silberteller mit Kontroll-

[5] G. Ulbert, *Römische Bronzeknöpfe mit Reliefverzierung*, Fundber. aus Schwaben, NF, 19, 1971, pp. 278—97.

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