

B I B L I O G R A F I A

Art objects in steel by Tula Craftsmen. Introduced and compiled by M. Malchenko. Photographs by V. Pochayev and V. Stukalov. Aurora Art Publishers, Leningrad 1974, 167 pages, 102 plates, most of them in colour. Text in English and Russian.

This beautiful little book with its numerous coloured illustrations of applied art from the world's famous steel centre of Tula is of interest not only to art students but has a special importance to arms and armour investigators. It deals with the 18th and 19th cent. applied art, a period in which the objects made of steel from the Tula armourers occupy a remarkable place. Already at the end of the 16th cent. weapon-smiths of the State here performed their work, for instance arquebuses and pistols. In 1712 the Tula Arms Factory was founded and little by little the place here became the centre of Russian arms production.

The well-known richly decorated hunting weapons had an excellent period about the middle of the 18th cent. Many of the finely decorated weapons were used by the emperors. Thus gave, for instance, Catharina II them as presents to foreign princes and other persons of high rank. Particularly famous was the combination of blued steel with gold ornaments. In these manufactures other kinds of objects, however, flourished. Many kinds of applied art was made, such as seals, perfume burners, candlesticks, caskets, ink-stands and even complete furniture such as chairs, dressing tables etc. The book illustrates a fine pair of pistols and a sporting gun from about 1790 with steel chiseling, ivory and with copper and silver incrustations. The oriental influence in the style of the bird's heads of the pistols is evident. It reminds of antique Scythian art. From 1761 is the halberd with its steel chiseling and gilt ornaments. Many museums in Europe possess in their arms collections guns and pistols and even side-arms from Tula, but it is interesting to see that beside arms so many other categories of applied art were made in these famous manufactories. The faceted steel beads, so frequently in use on certain types of presentation-swords from late 18th and early 19th cent., not least from England, seem to have their origin in the workshops of Tula. In the archives from Tula there exists documentation for close contacts between artisans from both England and Russia in these periods.

A. BR. H.

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Aspects de la vie au Moyen-Âge et à la Renaissance, dix ans de fouilles en Alsace, présentés par J.-P. Rieb et Ch.-L. Salch. Strasbourg, Centre d'Archéologie Médiévale, 1973. 68 p. et LXIII pl. (Chantiers d'Études Médiévales, no. 11). *Hommage à Geneviève Chevrier et Alain Geslan, Études médiévales*. Strasbourg, Centre d'Archéologie Médiévale, 1975. 146 p. (Chantiers d'Études Médiévales, no. 13).

Le Centre d'Archéologie Médiévale de Strasbourg (8 Av. de la Forêt-Noire) a été créé en novembre 1968. Il est subventionné par les Conseils Généraux des Départements du Bas-Rhin et du Haut-Rhin, mais il doit ses moyens surtout à la liberalité financière de ses membres qui aident la réalisation des travaux archéologiques par leurs cotisations ou par leurs dons, les recherches ainsi que les publications étant assurées par l'Association «Chantiers d'Études Médiévales». Le Centre, dont le champ d'action est essentiellement la France de l'Est, axe son intérêt sur les fouilles, les opérations de sauvegarde, etc., concernant la civilisation et la vie matérielle au Moyen Âge —les châteaux-forts en tête, naturellement— mais sans que les autres sciences historiques «*lato sensu*», se voient négligées pour autant. Il est actuellement un des plus actifs de France et la liste de ses publications est largement fournie. Citons-en les principales séries: *Cahiers Chantiers d'Études Médiévales*; *Recherches sur les châteaux-forts alsaciens* (parmi lesquelles le volume de M. Fr. Rapp, intitulé *Le Château-fort dans la vie médiévale et dans la politique territoriale*); *Recherches archéologiques médiévale de la France de l'Est*, etc., etc.

Ceci dit, passons à nous occuper plus spécialement des publications indiquées en tête de ce compte rendu.

Aspects de la vie au Moyen Âge et à la Renaissance, dix ans de fouilles en Alsace, est présenté par deux des principaux responsables du Centre —MM. J.-P. Rieb et Ch.-L. Salch— mais il est l'œuvre de toute une équipe qui, souvent d'une façon bénévole, se consacre à ces recherches. C'est un catalogue d'objets, dressé à l'occasion de l'exposition qui, pendant les mois de l'été 1973, s'est tenue dans les bâtiments historiques de la Chambre de Commerce et de l'Industrie à Strasbourg. Cette exposition n'avait pas la prétention d'être exhaustive: la quantité d'objets découverts, leurs qualité fort diverse et leurs état de conservation souvent mauvais, s'y seraient opposés. Il a fallut donc procéder à un choix et l'exposition «n'apporte pas non plus une réponse définitive, loin s'en faut, aux problèmes de datation. Nous avons choisi dans un large éventail vingt-deux séries d'objets pour présenter quelques aspects de la vie matérielle au Moyen-Âge et à la Renaissance, entre le IX^e et le début du XVII^e siècle. Mais le XV^e siècle tient une place envahissante parce que les hommes de cette époque ont souvent fait disparaître les couches archéologiques des

siècles précédents. Nous esperons donner un apperçu de ce que l'archéologie, si les fouilles stratigraphiques sont bien conduites, peut apporter pour la connaissance des hommes, et quels crimes irreparables l'on commet si l'on remue les déblais —les archives du sol— sans méthode» (p. 9).

En nous plaçant au point de vue des lecteurs de *GLADIUS*, nous pensons qu'ils seront surtout intéressés par la partie intitulée *LES ARMES*, qui se compose de quatre séries: I, Pointes de flèches et carreaux d'arbalètes; II, Chausse-trapes; III, Costume militaire; IV, Armes à feu. La presque totalité des objets décrits étant accompagnée de dessins, on dispose ainsi d'un répertoire fort utile, permettant de nombreuses comparaisons tandis que les recherches se trouvent facilitées par la structure même du catalogue. «Le numéro de la liste est identique à celui qui figure sur les planches. Les numéros entre parenthèses à la fin de la description renvoient au catalogue général du Centre d'Archéologie Médiévale. Sauf précision contraire, tous les dessins sont reproduits à l'échelle 1/1» (p. 9).

Le deuxième ouvrage recensé est un hommage rendu à la mémoire de deux jeunes archéologues morts tragiquement le 24 mai 1974 à Brucato (province de Palerme, Italie). Il a été élaboré, conjointement, par le Groupe d'Archéologie Médiévale, le Centre de Recherches Historiques et l'École des Hautes Études en sciences sociales, puis publié par le Centre de Strasbourg. Cette destination et cette élaboration font que le volume dépasse largement le cadre habituel des activités du Centre strasbourgeois. Après une brève Introduction rappelant la personnalité des deux disparus, le recueil se distribue en quatre parties: I, L'archéologie médiévale, méthodes et résultats. II, Autour de Dracy, recherches sur la Bourgogne médiévale. III, Autour de Brucato, recherches sur la Sicile médiévale. IV, Horizons, Recherches sur le Languedoc médiéval, Recherches sur la noblesse bretonne.

Au point de vue qui nous occupe, trois travaux présentent un intérêt particulier: celui de M. Ch. L. Salch, celui de Mlle. R. Dalnoky et celui de Mlle. I. Marland.

Le premier, intitulé *La protection symbolique de la porte au Moyen-Âge dans les châteaux-forts alsaciens*, fait état de deux séries d'indices recueillis dans les fouilles effectuées par M. Salch et son équipe, aux châteaux d'Ortenburg (ou Ortenberg) et de Ratsamhausen-Ottrott. La première série concerne la protection contre le feu obtenue en incorporant une hache de pierre polie (néolithique) dans la maçonnerie de l'enceinte. Vu «le pouvoir que l'on attribuait à ces objets, encore au début de ce siècle, dans les campagnes», l'A. se demande si les hommes du Moyen-Âge ne mettaient pas «la même intention dans la conservation d'une hache de pierre polie près de la porte» (p. 35). La deuxième série, plus fournie, «concerne le rôle symbolique de la chapelle comme moyen de placer la

porte sous la protection de la Divinité» (p. 39). Outre le témoignage apporté par les fouilles susnommées, l'A. donne de nombreux exemples de châteaux alsaciens où la chapelle (tout au moins un oratoire) était ainsi situé. On dispose alors d'une explication satisfaisante pour un fait qui n'avait pas été sans intriguer divers archéologues et qui se retrouve dans bien des endroits. Ajoutons au hasard. Pour le VI^e siècle, la demeure que Nicet, évêque de Trèves s'était fait construire près de Coblenze et où, à en croire Fortunat, la chapelle occupait un étage de la tour commandant la rampe d'accès. Pour le XI^e, le château de Gand (Flandre). Pour le XIV^e, celui de Méhun-sur-Yèvre (Berry), etc., etc.

L'A. remarque finalement que «la coutume de placer une figure de Saint au-dessus des portes s'est conservée dans l'architecture populaire, notamment en Alsace, dans les Vosges, en Lorraine, en Franche-Comté, en Champagne...» (p. 42). Ajoutons qu'une coutume analogue se retrouve en Argentine, non seulement à la campagne mais aussi dans les grandes villes. Il est fréquent qu'une image —généralement celle de la Virgen de Luján— surmonte la porte des maisons riches ou pauvres ou bien, placée du côté intérieur, protège l'entrée d'un appartement bâtit dans un immeuble.

En résumé, travail remarquable qui met parfaitement en relief les qualités de maîtrise que son auteur possède.

La contribution de Mlle. Dalnoky, *Un exemple de reconstitution; les ponts d'accès au donjon du château d'Aisey-le-Duc*, montre comment une question très particulière peut être résolue par l'usage adéquat des sources imprimées, des sources manuscrites et des documents figurés. «Dans le cadre des recherches sur la maison-forte bourguignonne entreprises par Jean-Marie Pesez et Françoise Piponnier, des études plus précises ont été conduites sur certaines constantes architecturales de ce type d'habitat seigneurial» (p. 51). «Au XV^e siècle, Aisey-le-Duc est une des plus importantes places fortes du duché de Bourgogne. Site de plaine à plan quadrangulaire, ce château entouré d'un double fossé ne peut compter que sur l'ingéniosité de ses défenses pour le protéger» (p. 51), ce qui explique l'importance des sommes engagées. L'exposé, très bien structuré, ainsi que la reproduction, fort judicieuse, d'une miniature contemporaine, doublent l'intérêt de l'étude. A la fin de son travail, l'A. se demande en comparant cette miniature d'origine bretonne et la description du château bourguignon, «si au XV^e siècle il existait des règles précises pour assurer la défense de sites de plaines» (p. 56). Nous sommes sûrs que l'on peut répondre d'une façon affirmative à cette question.

Il en est de même du travail de Mlle. Marland, *Les maisons-fortes de l'Auxois*. L'A. commence par énumérer les diverses sources utilisées: Sources écrites, aux Archives départementales de la Côte-d'Or; Aveux,

Dénombrements et Terriers; étude des plans cadastraux et prospection sur le terrain; enfin, photographie aérienne qui a «permis de repérer des structures complètement enfouies, que les autres modes de prospection n'avaient su retrouver» (p. 63). Il considère alors le site où est implantée la maison-forte. Ses éléments (fossés, murs ou palissades, tour, etc.). Le statut de son propriétaire. Celui de la terre (*pourpris* ou domaine proprement dit; *gaignage*, que des tenanciers mettent en valeur). Celui des hommes placés sous la dépendance du maître de la maison-forte. Enfin la typologie de celle-ci: enceintes simples (fossoyées sur 2, 3 ou 4 côtés) et enceintes complexes (concentriques et autres). L'A. mentionne enfin les deux fonctions essentielles de la maison-forte: «ses bâtiments agricoles font d'elle un centre d'exploitation, et ses éléments défensifs lui confèrent un certain rôle militaire» puis, il évoque brièvement leurs destins ultérieurs «Les unes restaient de simples *maisons* des champs, les autres devenaient véritablement *fortes*. Ferme ou château tel est l'état dans lequel nombre d'entre elles se trouvent aujourd'hui» (p. 68).

L'étude est bien conduite. Toutefois, l'A. (que nous ne connaissons point) nous semble fort jeune et par trop enclin à suivre les modes actuelles. De là son étonnement pour l'emploi, compulsif et à titre onéreux, du moulin ou du four banal (p. 67), sans songer que des monopoles analogues existent encore aujourd'hui aussi bien en France qu'en U. R. S. S., aux États-Unis qu'en R. P. Chinoise. De même, son apitoiement sur le sort des serfs «taillables et corvéables à merci...» L'A. néglige le fait qu'on n'est plus au X^e siècle et, lui-même dans le paragraphe qui suit, contredit ce qu'il avait affirmé antérieurement (p. 67, le statut féodal: les hommes). Mais, on touche là à une question brûlante, fort souvent évoquée et à propos de laquelle il serait malséant d'insister.

Pour revenir sur un terrain plus ferme, signalons qu'en raison des prix prohibitifs demandés par les imprimeurs, les publications du Centre sont tirées par le procédé offset et les feuilles d'aluminium tapées d'une façon bénévole par les membres du Centre, Directeur en tête... Ne nous étonnons pas alors si le coût redevient accessible sans que la qualité ait à en souffrir: les deux marges du texte étant régulièrement alignées et les dessins (fort nombreux) parfaitement reproduits.

J.-F. FINÓ

FRANÇOIS BUTTIN: *Du Costume Militaire au Moyen Âge et pendant la Renaissance*. Memorias de la Real Academia de Buenas Letras de Barcelona, tomo XII. Barcelona 1971. 419 pages. 16 illustrations.

This very erudite and highly important work by Fr. Buttin is no easy reading. It is the history of defensive dress of a warrior since the

Middle Ages and during the Renaissance. But it is not the current history well known from so many books about armour. It is the history based upon a most critical examination of the literary sources of the various periods concerned, an analysis of the designations of the various parts of the body defense considered from quite new aspects. The author has a comprehensive knowledge about the sources. He has plunged deeply into documentary material. With a sharp and critical sense has he penetrated into it. Old and deeply rooted denominations which apparently in some cases depend on misunderstandings made already centuries ago have been digged up to a scientific and critical analysis. The names used in the literary sources and the names generally used in manuals of our time are discussed, their original significances are examined and accompanied with strong and convincing arguments. Several names of body defense or of details from the body defense need —according to these investigations— a change to their original significance, a matter which no doubt will show to be very difficult, rooted as many of the names are in literature since the end of the 16th cent. The book treats such names as for instance: *broigne*, and *haubert* and not least *maille*. Other names to be revised are for instance *haubergon*, *plates*, *brigandine*. In the first pages the author exposes the problems and the various interpretations, and he starts with such a document as «*Chanson de Roland*» from about 1100. In a long series of chapters with many and erudite notes and with an enormous foundation of literary sources and a thorough knowledge all kinds of details are treated: origine du mot «*maille*», «*mailles clouées*», «*mailles treslies*», «*mailles plaquées*», «*harnois de jas-eran*» etc. and he continues with the «*haubert et sa légende*», «*broigne*», «*haubergon*», «*plates*», «*brigandine*», «*cotte et chemise de mailles*», «*les jaques et leur mailles*», «*camail*», «*gorgerin*», «*cervelières*», in order to terminate with «*les métiers et la fabrication des vêtements de guerre*» and «*le tourbillon du XVII^e siècle*». It would be rather difficult to treat all these chapters here, but I hope to be able to treat some of the problems in vol. II of my book: Arms and Armour in Spain, because these problems —complicated as they are— in regard to the names and significations are of great interest even to the Spanish denominations in the Middle Ages. This concerns not least such significations as *haubert* and *haubergon* and their use in Spanish equipment of the same epochs. The glossary which follows after the many with notes and references filled pages, is highly important and a necessary help to the reader.

It is a book filled with learning and knowledge and it sets forth many problems which cannot easily be solved or discussed. The book merits a very deep penetration into the topic, because the terminology, the names and their history through the ages need a revision not only in French but

even in other languages. No doubt there is necessity of some corrections and modifications or interpretations but it is a long-time work and not at all an easy work. It is an important book and it would be interesting to return to some of its problems.

A. BR. H.

JUAN L. CALVO PASCUAL: *Armamento reglamentario y auxiliar del Ejército español*. Libro núm. 2. Modelos portátiles de Avancarga, 1839-1873; Armamento de pistón, editado por el autor, Barcelona, 1976. Tres cuadernos: primero, 20 págs. y 11 láms.; segundo, 12 págs. y 9 láms., y tercero, 10 págs. y 9 láms.

Al año siguiente de aparecer el libro número 1, surge el esperado número 2. Como en el caso anterior, el autor ha dividido su obra en tres partes o cuadernos:

I) *Primera Epoca (1839-1856)*: Tiene un Preámbulo en el que habla de las *marcas reales* al uso, *marcas de destino*, *marcas de artesano* y *marcas en el armamento de importación*. De esto el autor escribe:

«Característica del armamento reglamentario es ofrecer en sus componentes variedad de marcas muy superior a la que puede observarse en el destinado al comercio particular; es inherente en el arma reglamentaria la presencia de un indicativo de origen, así como la de punzones que acreditan el examen a que ha sido sometido cada elemento, posibilitando la identificación del responsable en su aceptación. Independientemente a su peculiar significado, estas marcas ofrecían indicativo de la 'propiedad Real' ejercida sobre el efecto que señalaban, recibiendo por ello la denominación común de 'marcas Reales'.»

No ya con carácter exclusivo del armamento reglamentario aparece en ocasiones sobre el mismo, marcas que ofrecen noticia de sus usuarios; estas marcas que denominaré «de destino», así como las que identifican a los artesanos constructores, completan con las «administrativas» (fecha de fabricación o número de orden), la relación de las que ofrece el armamento que nos ocupa.

A continuación hace una detallada descripción (características, inscripciones, marcas y medidas) de las armas, completadas con láminas correspondientes a cada modelo.

II) *Segunda Epoca (1857-1861)*: El autor comienza haciendo un breve estudio comparativo de las armas de esta segunda época con las de

la primera y continúa con una rápida visión de las innovaciones que aparecerán de 1857 a 1851 y que serán ampliadas en la descripción de cada pieza y acompañadas, como en el anterior cuaderno, por sus láminas respectivas.

III) *Apéndice (1839-1873)*: Este tercer cuaderno está destinado a los modelos de armas que se importaron, entre 1839 y 1873, del extranjero, principalmente de Inglaterra y Bélgica.

El autor hace notar que en esta época hay muchas armas de «recomposición» o de producción muy limitada, pero que por su gran variedad escapan a su trabajo. De estas armas dice lo siguiente:

«... Constituyen armamento de la clase de recomposición aquellos modelos fabricados mediante la utilización de piezas procedentes del desguace de armas nuevas deterioradas o anticuadas, que pasaban a ser dotación de la milicia nacional, policía, guardias rurales, miqueletes, etc. Este aprovechamiento de piezas pertenecientes a distintos modelos reglamentarios es causa de que el armamento resultante ofrezca una dificultad en la delimitación de los modelos y se vea denominado como 'de la clase de recomposición' como calificativo general...»

Como en los anteriores cuadernos, pasa a la descripción de las piezas, que en este caso son belgas e inglesas en su mayoría y alguna de recomposición, acompañadas de sus láminas correspondientes.

En esta obra no debe olvidarse la presentación, que corre a cargo de James D. Lavin, autor de todos conocido, en la que expone su entusiasmo y satisfacción por el planteamiento, desarrollo y presentación de la obra y resalta su importancia y necesidad.

Al muy acertado juicio de Mr. Lavin hay que añadir las excelencias del formato de esta obra, que si en principio ha extrañado a algunos, es magnífica para la consulta y estudio del aficionado y especialista en la materia. ¡Enhorabuena al autor!

M.^a R. MARCO

YVON GARLAN: *La guerre dans l'Antiquité*. París, F. Nathan, 1972, 223 p. (Coll. FAC).

Voici un ouvrage bien supérieur à celui qui, sous un titre analogue, a été recensé précédemment (GLADIUS XII, 1974, p. 142) et, malgré que plusieurs années se soient écoulées depuis sa parution, nous tâcherons d'en dire quelques mots.

Dans *l'Introduction*, l'A. ayant délimité son sujet (mondes grec et romain), évoque la place tenue par la guerre dans ces sociétés, puis il fait un rapide survol de leurs stratégistes et il finit en indiquant les conditions auxquelles, il pense, doit s'assujettir une histoire moderne de la guerre antique. Ces préliminaires une fois posés, l'ouvrage se divise en quatre parties: I. *Les aspects juridiques de la guerre antique*: a) guerre et état; b) définition de l'état de guerre; c) les lois de la guerre. II. *Les sociétés militaires*: a) les aristocraties militaires; b) le soldat citoyen; c) les mercenaires grecs; d) le professionnalisme romain. III. *Les modes de combat*: a) le combat en rase campagne; b) l'art des sièges; c) la marine de guerre. IV. *L'organisation des armées*: a) la vie matérielle; b) l'exercice du commandement; c) les hommes de troupes. *Conclusion*. Une bibliographie systématique donnant près de soixante-dix références, un lexique, les notes et la table des illustrations complètent le volume.

L'A. s'efforce «de décrire, en historien plutôt qu'en antiquaire ou en praticien, les principaux aspects (juridiques, sociaux et techniques) de la guerre dans les mondes grec et romain» (p. 197). Il a essayé de faire «une mise au point des acquis anciens et des perspectives nouvelles de la polémologie antique» (p. 8). Par cela même, il lui a fallut «choisir l'essentiel dans la masse des faits accumulés pendant plusieurs générations par les spécialistes de l'art militaire» (p. 8) et, ce choix une fois réalisé, de les réduire à l'unité. Pour son exposé, il a négligé le plan chronologique afin de mieux mettre en valeur les sujets et, ce faisant, il a affronté une difficulté de plus. Comme jadis Fustel de Coulanges dans *La Cité Antique*, il a renoncé à traiter, dans une première partie, de la Grèce puis, dans une deuxième, de Rome. Au lieu d'opter pour la solution facile, l'A. a mis en avant les diverses questions qui se posaient à son esprit et il a montré comment, chaque un des deux peuples les avaient résolu. Cela a du compliquer singulièrement sa tâche mais, pour le lecteur, l'intérêt du livre s'en trouve renforcé.

Le fait même de choisir parmi les innombrables circonstances qu'offrait l'histoire, celles qui méritaient d'être retenues, nous semble très justifié «Qui ne sut se borner, ne sut jamais écrire», disait déjà le vieux Boileau. Mais l'A. ne s'en est point tenu là et son choix s'est exercé aussi dans la production bibliographique moderne, qui est énorme, surtout en ce qui se rapporte aux Romains. Ici encore nous sommes entièrement d'accord avec lui et, fort souvent, nous nous sommes élevés contre la manie qui porte à gonfler inutilement un travail en le bourrant de renvois aux milliers d'articles publiés sur chacun des sujets traités; cette exhibition, d'un pédantisme inutile, nous semble parfaitement déplacée et ne servant qu'à dérouter le lecteur... ou à impressionner un jury!

Ce n'est pas que l'A. soit libre de tout reproche. Passons condam-

nation sur les simples coquilles, telle 1976 au lieu de 1967 (p. 206). Elles sont fort rares et qu'el-est celui d'entre-nous qui n'en a pas de pareilles à se reprocher? Voyons des réserves plus sérieuses. Les notes (qui surpassent les 200) son groupées à la fin du volume, ce qui est fort incommode; en outre, bien qu'elles soient numérotées d'une façon continue, on n'indique pas les pages auxquelles elles correspondent, ce qui rend les recherches vraiment difficiles. Un tableau des abréviations utilisées aurait dû se trouver au début de la bibliographie et il ne suffit pas de dire «Les abréviations dont il sera fait usage seront celles de *l'Année philologique*» (p. 205) car, nombre de lecteurs n'ont point ces volumes constamment présents à l'esprit. Enfin, il manque un index analytique, qui aurait rendu bien des services; le *Lexique*, qui accompagne le volume n'en saurait en tenir lieu car, outre qu'aucune pagination n'est indiquée (ce qui d'autre part est fort logique dans un lexique), celui-ci est presque uniquement onomastique et géographique, les noms de «sujets» ne constituant que des exceptions. Voilà quelques uns des reproches que l'on peut faire à l'A. Ils concernent, presque tous, des questions d'édition ou d'impression mais ces aspects ne sont pas négligeables pour autant, surtout dans les cas présent où il s'agit d'un ouvrage d'initiation.

Les qualités positives abondent. La façon de grouper et d'exposer les faits. L'usage d'un langage clair et compréhensible pour tout le monde. Le souci de n'avancer aucune opinion sans en administrer la preuve. Enfin, la préoccupation d'étayer les dires des auteurs anciens par les découvertes modernes de l'archéologie et réciproquement. Tout cela permet de reconnaître un professeur digne de ce nom et, comme ces qualités se font rares, nous devons féliciter l'A. de les posséder.

Ce qui rend aussi l'ouvrage sympathique c'est l'emploi d'un ton mesuré et modeste. L'A. ne fait point étalage de son savoir (qui est considérable). Il ne prétend pas avoir tout découvert par lui-même et il sait parfaitement que la Science ne se fait que par apports successifs. Nous partageons entièrement son avis. De même lorsqu'il plaide pour l'utilité des travaux de synthèse et qu'il invoque «l'incompatibilité évidente entre l'abondance de la matière et la minceur relative de l'ouvrage» (p. 8).

En résumé, livre fort intéressant à lire et dans lequels on trouvera bien des choses à apprendre.

J.-F. FINÓ

GREENHALGH, P. A. L.: *Early Greek Warfare. Horsemen and Chariots in the Homeric and Archaic Ages.* Cambridge University Press, Cambridge 1973. 212 pages, 75 illustrations in text.

During the last decennium an interesting topic has come more and more into the limelight and new fields of Classical Archaeology have been investigated, fields which in former time probably were a little neglected among the archaeologists: the weapons and the warfare in the ancient civilizations of Greece and on the Greek islands as demonstrated by the contemporary art representations and literary sources. Still more critical investigations in the Homeric epics and a comparison with the preserved archaeological pictorial material has shown that we cannot altogether consider pictures and epics exact descriptions and representations of matters from the old Mycenaean kingdoms or consider them «photographic» illustrations of daily life in Mycenae. On the other hand these modern investigations have shown us that the so-called Dark Ages were not just as «dark» as they are usually thought to be. Many details, however, from the life of early Greek time can be taken from the artistic archaeological evidence, for instance from the vase-paintings or from objects of other kinds of minor art handed down to us.

The author of the present book has particularly concentrated about the military history of the chariot and the mounted horse as represented in poetry and art, and as used in real life in the period about 1100 to 500 B. C. He attempts a reconstruction in regard to both tactical and technical possibilities, and to the economic and social facts of the period.

It is a very erudite analysis and important too on account of the attention called to the literary material and the rich archaeological material, particularly in the shape of early vase-paintings from the most important regions and centres of Greek civilization of those early days. Not least the practical view together with the critical point of view which the author uses in regard to his sources make this book important to all who wish to know something about the warfare of the so-called «Dark Ages».

The very detailed analysis of evidence in this study as a matter of fact is of the greatest importance to all archaeologists interested in early Greek art representations whatever these have the shape of vase-paintings or other categories of minor art. Specialists in history of war will here find much material of importance, and those who have specialized in the Homeric epics will find much material and many conclusions of interest as well as many new aspects. The book no doubt will provide a wider understanding of the various elements which came to create the «Classical» period of ancient Greece.

The short and exact notes on chronology and chronological terms are a good help to a reader, who is not specialized in Greek chronology. The short introduction is an excellent guide through the book. This has seven chapters beside an important appendix. Interesting is the first chapter in which the Homeric chariot is treated. To the Homeric nobleman it was a «sine qua non». The analysis, however, let us see that the Homeric picture of the chariot differs from the use of the chariot in the Mycenaean kingdoms or in the kingdoms of the Near East, where it was an important weapon in regard to mass-attacks. The Homeric warriors used their chariots as mere transport vehicles to the battle-field, where they dismounted to fight on foot. The problems to a high degree touch the social and economical problems of the Geometric Age, which after all could probably not have afforded such an expensive luxury as the warrior's chariot really was. It never seemed to be used in war, but only as a kind of taxi.

In chapter II the chariot of the Geometric Ages is treated. It is a most interesting topic. The material mostly consists in the Attic Late Geometric art from the second half of the 8th cent. A typological analysis of the pictorial representations of the chariot shows that even the earliest were modelled after the contemporary racing-chariots and that racing-chariots had been known long before their appearance in Geometric art. The Homeric bards were familiar with racing-chariots, but such chariots were not used in war. Their appearance in battle-scenes on the vases must be seen under the influence of the bards who wished to archaize the poems and their contents. It is built upon the facts that they know something about war-chariots in far distant bronze age kingdoms. Chapter III deals with the Homeric Hippes. The investigations show that the bards of Geometric Age have heroized and archaized warfare on their own experiences by transferring the military role of the contemporary mounted horse to the more heroic chariot. After the fall of kingship there existed a military and political dominance of aristocracies of knights in Athens. The Athenians at that time had good knowledge about riding, and the heavy-armed warriors rode to the battle accompanied by their mounted squires, who held their horses, while the knights fought on foot.

In chapter IV we meet the Dipylon warrior, hoplite and cavalryman. Important is the demonstration of the invention of the double grip hoplite-shield and its effect on the role of the war-horse. Something like this could be paralleled with investigations of the importance of shield-types for horsemen in the Middle Ages. The shapes of shields are examined, starting with the incurved Dipylon shield so frequent on Geometric vases. It shows how difficult it is to get real and true facts about war and war-

implements as they really were in this remote ages. Soon, however, the double grip shield was invented, and with this invention came a new type of warfare, a true cavalry with a potential effectiveness against hoplites on suitable terrains. The author in the same chapter examines the sociology of the new type and style of warfare and the reasons and conditions for the needs of a hoplite army and the class of heavy-armed infantry.

Of interest are the two chapters V and VI. The first of them treats the mounted warriors of the VIIth cent., and the author particularly examines the cavalry from the states of Corinth, Athens and Euboea as well as a group which he calls «Other States». The VIth cent. can be comprised here too, because it deals with the mounted warrior of VIth cent. from not only Corinth and Athens but the author further gives an examination of the Chalcidian material and that from East Greece. In regard to these two centuries the author has to depend upon the artistic material. Literary sources are rather scarce. But even if the artistic material is excellent the investigator has to be very prudent. A complete or continuous picture is difficult or almost impossible to get, neither in regard to chronology nor to geography. He must to a high degree depend upon the Ripe Corinthian style, which gives evidence from about 625 to 550 B. C. or to Attic Black-figure style from about VIth cent. A rather great difficulty is that most of the vase-pictures show horsemen out of battle, and thus do not give any impression of how the warriors actually fought. Particularly interesting are the aristocratic knights of Euboea, for which the author suggests an original reconstruction based upon a special and interesting vase fragment. Probably he is right in doing so. The Chalcidian pottery and some of the Clazomenian sarcophagi fill to some extent a geographical gap in the second half of the VIth cent.

The conclusions of all these detailed examinations of art and literature are found in chapter VII. It is partly a summary, partly an examination of what constitutional repercussions the military development after all probably have had. It gives a brief outline of the history of horsemen in war as far as the evidence from the various states permits. Some external influence no doubt has come to these states of Greece and have influenced upon the development of cavalry at least in some of the states. The hoplites are treated as a social class, politically self-conscious and distinct from the aristocracy of horsemen, its relations to the rise of the Tyrants and to the more democratic constitutions are examined. The Appendix treats the historical basis of the Homeric background picture. This is fundamental to the thesis set forth by the author about the Homeric warriors with their chariots. If it —as he says— is true that

Homeric warfare is not Mycenaean but a heroized picture of what the bards knew in the Geometric Age, the same should be true of other non-military aspects. The pivotal date seems after the suggestions of the author to lay in the IXth cent. B. C. The analysis made in this appendix shows how complex and difficult the problems are.

The text of the author is followed by a series of erudite notes to each chapter, and after them the important lists of the vase-material follow together with an index of collections in which the vases are to be found. There is a good list of bibliography and it contains many recent works of interest to arms students. There are many and good illustrations. Interesting are the representations of Geometric pottery with chariot-or horse scenes and the Argive fragments of late geometric votive shields from Tiryns, representing the small convex round shields. But even the selection of Corinthian, Attic Blackfigure and Chalcidian vases give a fine picture of heavy and light cavalry and the hoplites. It is no easy lecture, but to those who are interested in ancient art of war and its military equipment it is an important book.

A. BR. H.

Institut Suisse d'Armes Anciennes, Schweizerisches Waffeninstitut, Istituto Svizzero per le Armi Antiche, Swiss Institute of Arms and Armour. Rapport d'Activité pour les Années 1972-1974. Château de Grandson 1975. 53 pgs. ill.

In 1975 erschien die interessante Publikation: *Rapport d'Activité pour les Années 1972-1974* von diesem Institut, das zugleich das offizielle Organ der Gesellschaft: «The International Crossbow Society» in Genève ist. Institut Suisse steht als Herausgeber der Schrift. Redakteur ist Herr Marc-A. Bablan. Das Institut wurde in GLADIUS tomo XI, 1974, pags. 127 ff erwähnt. Hier soll deshalb nur vom Jahresbericht die Rede sein.

Der Bericht geht sehr gründlich die Tätigkeit des Instituts im Laufe dieser zwei Jahre durch. Man bekommt den Eindruck dass hier viel und gut gearbeitet wird von erfahrenen und fleissigen Spezialisten. Die Wirksamkeit des Instituts ist weitreichend und bedeutsam. Ihre Spezialforschung besonders mit Bezug auf Konservieren und Restaurieren alter Waffen ist ausserordentlich wichtig. Der Jahresbericht besteht aus 14 Abschnitten die alle von der mannigfaltigen Tätigkeit handeln. Eine redaktionelle Einleitung gibt in kurzen Zügen einen guten Einblick ins Programm und in die Wirksamkeit. Das Institut hat ein Ehrenkomitée mit hervorragenden und international anerkannten Fachleuten aus verschie-

denen Ländern. Der tägliche Mitarbeiterstab wird mit Namen erwähnt und besteht aus fünf Sachkundigen. Danach folgen sechs Spezialisten ausserhalb des Instituts, die aber mit dem Institut zusammenarbeiten, wenn man sie für spezielle Aufgaben ruft. (Graveur, Geschichtsforscher, Jurist, Zeichner etc.). Ausserdem hat der Direktor Dr. Eugen Heer viele wissenschaftliche Arbeit unter Händen und publiziert seine Studien über militärische Forschungen, z. B. Handfeuerwaffen. Clément Bosson aus Genève giebt in einer kurzen Abhandlung: *Pour ou Contre*, seine Meinung über Restaurieren und Konservieren, von einer sprechenden Photo begleitet.

In dem Tätigkeitsbericht wird ein Blick in das Hauptatelier mit den Mitarbeitern in voller Wirksamkeit gegeben. Man hat sich in den letzten Jahren sehr viel bemüht allerlei Werkzeuge und Kleineinrichtungen für die tägliche Spezialarbeit zu ergänzen. Spezialwerkzeuge sind notwendig und wenn man keine von den richtigen Typen finden kann, muss man sie selbst konstruieren. Ausserdem verfügt man über ein gutes Laboratorium. Pionierarbeit ist manchmal sehr schwierig. Jeder Mitarbeiter hat seinen eigenen Meisterstempel, so dass man immer den Restaurator einer Waffe finden kann. Da kein Lehrstuhl und keine Lehrplätze vor Händen sind, muss man zuerst die Methoden und das Verfahren selbst studieren bevor man beginnen kann «Lehrjungen» zu erziehen. Zu den vielen Tätigkeiten des Instituts gehören zum Beispiel Einrichtung von Ausstellungen, Versuche mit alten Waffen und ihren Funktionen, vielerlei Experimente mit Restaurieren: Bodenfunde sowie auch Museumsobjekte. Studienreisen nach fremden Museen und Privatsammlungen werden auch unternommen. Man hat in 1974 London mit seinen Museen und Sammlungen von Waffen besucht und Austausch von Erfahrungen mit Kollegen gemacht. Unter den wissenschaftlichen Arbeiten muss man sehr hervorheben die grosse Arbeit mit der Ausgabe: «*Der neue Stöckel*». Diese Arbeit ist ausserordentlich wichtig. Dr. Heer hat jetzt mehr als 12.000 Einheiten in seiner Kartei über Büchsenmacher aus allen Ländern eingesammelt. «*Der neue Stöckel*» wird ein unentbehrliches Buch sein für alle Waffenforscher der Handfeuerwaffen. Gott sei Dank: der alte hochverdiente, dänische Waffenforscher W. Stöckel mit seinem grossen Pionierwerk wird nicht in Vergessenheit geraten.

Die Bibliothek des Instituts wächst, neue Bücher werden eingekauft. Eine sehr interessante und wichtige Wirksamkeit ist die Ausfertigung von offiziellen Expertisen. Für Museen und Privatsammler ist es vom allergrössten Interesse zu wissen ob eine neuerworbene Waffe *authentisch* ist und keine Fälschung oder Imitation, sein Alter, Ursprung, Nationalität etc. Solche Expertisen können nur Spezialisten machen, die über vielerlei Mittel, technisch wie ökonomisch verfügen.

Interessant ist der kleine Artikel von Eugen Heer: «Die Konservierung einer Barbuta aus dem 15. Jahrh.» mit seinen Meistermarken aus Milano. In diesem Zusammenhang muss man auch den kleinen Artikel von Dr. Alan Williams aus Manchester hervorheben: «Problems in the Composition of Armour.» Konservierung und metallurgische Analyse waren recht schwierige Aufgaben.

Die internationale Armbrustgesellschaft, die im Schlosse zu Grandson zu Hause ist, versucht das Interesse dieser edlen Waffe wieder zu beleben. Die Armbrust erlangte ja eine grosse Bedeutung für militärische und sportliche Zwecke in der alten schweizerischen Eidgenossenschaft. Spezielle Armbrustsammlungen gibts nur wenige. In Genève findet man doch eine feine Sammlung. Litteratur über die Armbrust gibts auch nur wenig. Man muss hoffen dass es der Armbrustgesellschaft gelingen wird ihren Traum verwirklicht zu sehen: eine Fachzeitschrift der Armbrust ins Leben zu rufen.

Sehr wichtig für eine Wirksamkeit ist natürlich seine Ökonomie. «Forschung kostet Geld» hat der Direktor des schweizerischen Nationalmuseums in Zürich gesagt. Und das ist wahr. Die wissenschaftliche Forschung alter Waffen ist stechts eine ganz junge Forschung, aber sie ist ein wichtiger Zweig auf dem Baum der Wissenschaften wegen seiner Verbindung mit so mannigfältigen Seiten des kulturellen Lebens: Geschichte im Krieg und Friede, Kunstgeschichte, Kunstgewerbe, Archäologie, Metallurgie, Technik, Verkehr, Handel, etc. etc. Um Forschung zu treiben hat das Institut einen Forschungsfonds eingestiftet. Alle, die an dieser Spezialforschung interessiert sind, können mithilfen. Das Institut hat auch eine Schriftenreihe eingeleitet von wissenschaftlichem Charakter. Auch rein technische Themen werden im Bericht berührt, zum Beispiel die «Grandson-Set» bestehend aus Polaroid CU-5 Landkamera und Zubehör mit Reinigungsinstrumenten für Stempel und Marken auf alten Silbersachen, Feuerwaffen, Blankwaffen etc., ein für Museen ganz nützliches Instrument. Probleme des Schutzes gegen Kunstdiebstähle mit Alarmgeber, Alarmmelder etc. werden behandelt. Eine nützliche Liste mit waffengeschichtlicher Bibliografie schliesst den Jahresbericht. Es ist ein reichhaltiger Bericht mit vielen guten Auskünften über die Tätigkeit der Waffenforscher.

A. BR. H.

MAURICE LOMBARD: *Les métaux dans l'ancien monde du V^e au XI^e siècle*. Paris-La Haye, Mouton, 1974. 295 p. (Civilisations et Sociétés, 38).

L'ouvrage recensé ici constitue le deuxième volume des «Études d'économie médiévale» et il a été rédigé, comme le précédent, à partir des notes de l'A., illustré des cartes et des schémas dont il avait laissé le croquis. La transcription des termes arabes est conforme au système dit «serré», suivi sur les conseils d'A. Miquel depuis le début des publications posthumes de l'A. Le volume s'ordonne de la façon suivante:

I. LES MÉTAUX DANS L'ANCIEN MONDE À LA FIN DU V^e SIÈCLE:
1. *L'affaiblissement du monde romain*: a) répartition des centres métallurgiques; b) ressources en métaux précieux; c) l'ère des difficultés. 2. *La Renaissance métallique du monde sāssānide*: a) le primat du fer; b) les théâtralisation du métal jaune; c) le monométallisme argent; d) techniques et décors. 3. *L'avance des techniques indiennes et chinoises*: a) l'acier «ondanique»; b) l'acier fondu chinois; c) la question du transfert de la technique. 4. *Les promesses de la steppe*: a) le cadre physique et humain; b) antiquité de la métallurgie des steppes; c) la synthèse hunnique.

II. LES GRANDES INVASIONS ET L'ÉVOLUTION DES MÉTALLURGIES (V^e-VII^e SIÈCLES): 1. *La poussée gothique et l'arrivée des techniques de la steppe*: a) le domaine gothique; b) les routes et les influences; c) les trouvailles, rareté des armes, apparition du cloisonné. 2. *La métallurgie dans l'Europe du N.-W.*: a) les routes et les échanges; b) le domaine franc et le renouvellement des techniques; c) le Finistère anglo-saxon. 3. *La métallurgie dans l'Europe méridionale et centrale, un nouvel apport oriental*: a) la conjoncture du VI^e siècle; b) le relais lombard; c) le relais avar. 4. *Le travail des métaux dans l'Empire byzantin*: a) restriction des ressources métalliques; b) Constantinople et sa consommation en métaux précieux; c) production des ateliers provinciaux; d) l'armée byzantine et ses besoins en fer.

III. MÉTAUX ET MÉTALLURGIE DANS LE MONDE MUSULMAN (VIII^e-XI^e SIÈCLES): 1. *La force de frappe des Bédouins conquérants*. 2. *Cartographie de la métallurgie du fer*: a) l'Occident musulman; b) l'Egypte et la Syrie; c) l'Orient musulman; d) le commerce des épées. 3. *Les métaux non ferreux*: a) le cuivre; b) l'étain; c) le plomb; d) le zinc. 4. *Le problème de l'or*: a) la remise en circulation de l'or thésaurisé; b) l'intensification de la production dans les mines anciennes; c) l'or du Soudan. 5. *L'argent*. 6. *Les techniques et les produits nécessaires au travail des métaux*: a) le mercure; b) les produits utilisés pour la fonte et l'alliage. Quelques pages sur la synthèse musulmane, étape dans la «conquête minérale» servent de conclusion.

Une bibliographie spécialisée qui occupe plus d'une trentaine de pages, une table des cartes et des schémas, une table des dessins, ainsi que cinq grandes cartes repliées, complètent le volume.

Evidemment, on peut reprocher à l'A. la façon dont certains faits sont présentés ainsi que l'influence néfaste de la VI^e section de l'École des Hautes Études; les fameuses «trenzas», dont il a souvent été question se font parfois trop sentir... Mais on peut répondre qu'il s'agit d'un ouvrage posthume, auquel l'A. n'a pu donner la dernière main et, qu'avant sa publication, peut-être aurait-il adoucit certains développements. Quoi qu'il en soit, le livre est fort intéressant. GLADIUS est expressément cité à plusieurs reprises comme source (p. 263 «in fine», 284, etc.). Dans bien des endroits (p. 12-13, 26-28, 33-37, 94-100, 142-150, 174-180, etc.) on trouve nombre de renseignements utiles et peu connus concernant les armes ou leurs fabrication et mention est faite de travaux qui, autrement, risqueraient fort d'échapper aux plus advertis (p. 263-264, 271, 275-276, 282, 283-284, etc.). Malheureusement aucun des objets mentionnés n'est reproduit photographiquement, des objections d'ordre buggétaire ayant été opposées par l'éditeur (coutumier du fait) mais comme les références pertinentes sont données, il n'y a que demi-mal et le lecteur peut, au besoin, les retrouver.

En résumé, ouvrage qui doit être lu avec précaution mais qui intéressera sûrement les archéologues, les hoplotologues... et les lecteurs de GLADIUS.

J.-F. FINÓ

Museo-Armeria de D. José Estruch y Cumella, Reproducción Fototípica de los Ejemplares más notables que en él se conservan. Prólogo de A. García Llansó. Barcelona 1896. 176 plates, 8 plates with 233 stamps and inscriptions of arms and armour. Edición facsímil publ. por Puvill-Editor, Colección Hispánica Puvill, Sección Varios 1, Barcelona 1976. Glosa por Eduardo de Mora Amell.

It is an excellent idea carried out by the Puvill-Editor and his collaborators to publish this facsímil edición of the almost forgotten and at least to-day almost unattainable album-catalogue of this important and comprehensive Spanish collection of ancient Spanish arms and armour, a collection which unfortunately came to leave its Patria, cross the walls of the Pyrenees and embellish an important French private arms collection in Paris for at last to end under the vaults of Hôtel des Invalides in Paris, in the French Musée de l'Armée. The very few existing copies of the original album-catalogue from 1896 are only to be found in certain

great national libraries in Europe and America and, maybe, in a few private libraries. On the antiquarians' shelves it hardly appears to-day.

In regard to collections of Spanish arms and armour the end of the 19th century and the first years of the 20th signified an unfortunate period. Spain lost some of its most important collections of ancestral arms and armour. Highly important Ducal collections, of historical importance, were sold at international auction sales for being spread in European and American museums and private collections. Part of Spanish history, applied art and craftsmanship, particularly from the period of the Catholic Kings and the anterior periods (but even from later periods) crossed the frontiers. Collections, kept for centuries in the castles of the ancestors, inheritance from famous fathers to sons, came under the hammer. Swords and halberds, bacinets and armours worn in famous battles on the Peninsula or used, maybe, at the siege and conquest of Granada by the armies of the Catholic Kings, were expatriated. Spanish armour before the period of Felipe el Hermoso and Carlos V must now to a high degree be searched for in foreign museums.

The valuable armoury of the *Dukes of Osuna* was dispersed by three auction sales in 1882, 1890 and 1896. As no pictorial records apparently exist of this collection it is now very difficult to verify the various items in the foreign museums and collections. In regard to Spanish Gothic armours the Osuna collection was of the greatest interest. Part of it was acquired by another Spanish noble-family, but passed through several sales to the collections of the American multi-millionair, the late *William Randolph Hearst* in his museums in California and even in England. Now pieces from here are in Metropolitan Museum in New York, other items in Fine Arts Museum in Boston. The Gothic Osuna armours acquired by *José de Argaiz* passed to the collections of *Georges Pauilhac* in Paris.

This famous French arms collector, born in Toulouse in 1871, had since his 13th year been an eager collector of ancient arms; his first collections were placed in his family-house, until he settled in Paris, where he had built a special Palace at the side of his private building in Avenue Malakoff. On his many travels abroad he was always on the lookout for extraordinary «finds» and his museum in Paris, constructed as a huge «church-nave» soon became filled and got came all over the world. During his years of travelling in Spain at the end of the 19th cent. he found and bought —en bloc— three outstanding Spanish arms collections, originating in old family-armouries: that of the conde *José de Argaiz* (which comprised pieces from the Osunas), that of el marqués de *Casa Torrés*, and —in between them— the marvellous collection of *José Estruch y Cumella* in Barcelona. This collection was acquired in 1898

All these collections comprised a good deal of ancient Spanish Gothic armours, part of which had been made in Italy, in Milan, for the Spanish market, according to Spanish taste and style. Most of them were armours anterior to the collections of Real Armería in Madrid.

On the Rambla de Cataluña in Barcelona José Estruch had let construct a building in Neo-Gothic style in connexion with his precious palace-house. Passing through the entrance the visitor entered a huge and elegant hall richly decorated, and from here he came to the armoury-hall itself, a huge room the walls of which were covered with golden velvet. Here the comprehensive collections, collected with intelligence and care through many years, were exhibited. In connexion with this museum there were rooms for master of the armoury and for specialists to take care of the collections. His museum comprised a great variety of arms from the stone age to napoleonic time. Provenience existed for many of the objects. Some of them were of historical interest and had been owned and used by historical persons. Among the early objects were an Iberian falcata from the province of Teruel, various Merovingian scramasaxes, Carolingian swords and a series of medieval swords. One of his most precious items was the fine sword, known under the name of the sword of *Saint Martin*. This sword which has a long and complicated history, probably belonged to the 13th cent. In 1370 it is mentioned in the Will of king Pedro el Ceremonioso, and it is said to have been worn at the coronation of king Martin I of Aragon in Zaragoza. According to legend it had been brought to Zaragoza from the church of San Pedro in Palermo. In the 15th cent. it came into the hands of the Cofradía of the Cottoners' Guild in Barcelona, and from this guild it was bought by José Estruch in 1888. (Dr. Martín de Riquer in his book: *L'Arnes del Cavaller*, p. 88 ff gives many details about its history.)

This sword now can be studied in the French Musée de l'Armée in Paris. In a short article about the collections of José Estruch by Fernando Barado in 1889 the sword and its history is mentioned, and the author of the album-catalogue of 1896 repeats it. Another precious jewel of this collection was the excellent pavese from the 15th cent. with the arms of one of the oldest families of Catalan nobility. The main group consisted in swords and rapiers, from Middle Ages, Renaissance and later period, comprising many important items, and many «Toledanas». The greatest importance must be given to the collections of armours, bacinets and cabassetts. Many of them have stamps. Even stamps from Calatayud and from the Missaglias of Milano are to be seen here. To the armours and helmets and to the early artillery and fire-arms of the collection one can find excellent parallels in the outstanding wood-carvings from the «sillerías» of the choir of the Cathedral in Toledo with the precious wood-

en reliefs representing the siege and conquest of Granada by the armies of the Catholic Kings at the end of 15th cent. The Estruch collection further comprised daggers, halberds, axes, saddles, spurs and stirrups, European and Oriental.

In 1896 *García Llansó* published the great album-catalogue with the many fotos and descriptions from the armoury hall and the various items of the collections. Thanks to this catalogue we are able to verify the objects. The 8 pages with stamps and inscriptions are of great importance. It was, indeed, in the last moment this catalogue was published. Two years later the collections crossed the Pyrenees on their way to their new home in Georges Pauilhac's museum.

In June 1958 mr. Pauilhac died. His important armoury in Paris, which at that time housed about 2.811 objects, well-preserved by specialists from his own laboratories, comprised not only numerous Spanish objects, but even important objects from France, Austria, Germany and Italy. Thanks to the French minister of military affairs (*M. Pierre Messmer*) and his interest in the museum of Pauilhac, this was acquired for the French National Museums. The inestimable museum was saved from being spread to other countries and other collections at auction sales. Investigators who wish to study Spanish Gothic armours and other categories of early Spanish arms—Medieval and renaissance—now can go to Musée de l'Armée and look for them in Hôtel des Invalides in Paris.

The Puvill-Editor and his collaborators deserve all credit for having re-published the album-catalogue of this important Spanish collection from Barcelona. The book is an indispensable acquisition to all libraries and museums specialized in ancient arms and armour.

A. BR. H.

ANDRZEJ NADOLSKI: *Polish Arms, Side-Arms*. Ossolineum. Warszawa, Kraków, Gdańsk 1974. 61 pages of text, 235 illustrations, two plates in colour, many linear drawings.

This little book by the well-known Polish scientist prof. dr. A. Nadolski from the university of Lódź is a highly wanted work. The first edition of it was issued in Polish but shortly after the English edition saw the light. Arms students will hail it with pleasure. The author has many years of experience behind him in regard to investigations of arms and armour archaeology. During 20 years he was professor at the

Lódz university and later on he became the director of the Research Centre of the Institute of the History of Material Culture of the Polish Academy of Sciences as well as member of numerous foreign research centres and learned societies. Already in 1954 his book about Polish Arms and Armour in the 10th-12th cent. was issued. In the years that followed many works dealing with the important field of medieval arms in this corner of Europe were published. To the mutual influences between East and West these regions of Europe are important and to some extent analogous to the Iberian peninsula. From the Islamic world, the world of the Arabs and the Persians one branch of culture followed the Mediterranean countries both on the Northern and the Southern coasts and joined on the Iberian peninsula. From Persia and Turkey other branches of culture and influence past through the Eastern part of Europe receiving influence from the peoples of the steppes of Asia and Ukraine. One important source is common to both East Europe and the Iberian peninsula: *Persia*. But the Persian and Turkish influence no doubt is more pronounced in such countries as Poland and Hungary. The interest for arms and armour archaeology in this part of Europe must be received with pleasure. The archaeology in regard to medieval weapons has revealed several excellent specimens, and the «digging up the past» from the soil frequently has given a good harvest. The particular history of Poland during centuries was a bloody history of partitions, invasions by foreign peoples and armies, insurrections and destructive wars. In spite of its particular history with much foreign influence it is remarkable to note the originality of various Polish arms kept throughout centuries.

The present investigation comprises only side-arms, historical and precious arms, as well as plain and simple arms, the history of which is unknown. It thus comprises swords and sabres, cutlasses, falchions, daggers and similar kinds of side-arms used for hand-to-hand fightings. It is not always easy or possible to classify a weapon as being Polish or French, Austrian, German etc. on account of its shape, type, fabrication or the like, because blades, for instance, were made in great centres in West Europe and exported to the Eastern regions even as far away as to the peoples of the Volga regions, where they were furnished with hilt and other kinds of accessories according to the style and taste dominating in these places. Eastern blades were exported to the Occident, where they were equipped with accessories in Western taste. Thus it is not always easy to get an adequate criterion for what is true Polish or not.

The investigation by dr. Nadolski comprises the whole history of Poland from the formation of the super-tribal state of the first Piasts in the second half of the 10th cent. until the recent years when side-arms with

a few exceptions ceased to be part of the soldier's equipment. A great part of the early sword-blades found, for instance, in the regions of Kiev came from the Rhineland manufactures and were mostly imported via the Baltic routes. Before the middle of the 10th cent. the continental route from Regensburg passed to Poland. But even this was rather limited, and characteristic enough —there is an almost complete lack of Ulfberht blades in Poland. From the period between about 950-12th cent. almost 90 swords have been excavated, but these early swords are similar to the early swords of many other regions of Europe. It looks as if there in various places of Poland in the early Middle Ages were several villages the inhabitants of which had dedicated themselves to sword-smithing. From these early periods no sabres have been found with the exception of one specimen which apparently is of Hungarian origin. The sabre came from the steppe nomades (Khazars, Pechenegs, Polovtians). With the Hungarians in the early period in Europe the steppe sabre came to this region of the Danubian. But it did not yet affect Poland. Knives belonged to everyman but did not play any role as a military weapon. For his classification of the medieval Polish swords dr. Nadolski has used the system set up by mr. R. E. Oakeshott both in regard to blade and to hilt. The whole development is mentioned in short. About the middle of the 15th cent. the weapons of Central-East Europe, particularly those of Poland and Hungary began to be affected by the Oriental influences, and the sword from now was to a great extent replaced by the sabre. Among the 70 swords found or excavated in the soil from the period of the 12th-15th cent. only very few can be connected with historical persons or events. Among the most interesting specimens from this period is the so-called «Jagged» Sword, the preciously ornamented sword used as coronation sword for the Polish kings. This coronation sword was first used at the coronation of king Ladislas the Short in 1320. It is one of the very few Polish regalia, left by the Prussians at their pillage in 1795. A map of finding places of swords from 13th-15th cent. indicates a considerable power of local workshops as well as the well organized import of weapons to Poland in 14th-15th cent. In regard to the sabres the Polish iconographical sources from the close of the 15th and early 16th cent. are of particular importance, representing sabres with undoubtedly Oriental character. Further these weapons are seen in Polish battle scenes in art representations. The Polish had many opportunities to get acquainted with the Turkish already in the 14th and 15th cent. Oriental arms and Oriental tactics during 15th cent was chiefly favoured in Poland on account of the various historical circumstances. In order to secure the frontiers towards the East it became necessary to create a light cavalry of Eastern type.

Detachments of the so-called «Rac», modelled on the Hungarian «Rac» detachments came up. This was the beginning of the Polish hussars, who already in the 16th cent. were transformed into a heavy cavalry though lighter and more mobil than the West European lancers and cuirassiers. Already in the 16th cent. the humanist-chroniclers gave rise to the so-called «Sarmatism», which came to play an important part in the old Polish culture with its predilection for Oriental dress, ornaments and arms. The Eastern influence was not uniform to all parts of the country and to all periods. Strong was it during the reign of king Stephan Bathory (1576-1586). This king introduced in the Polish armies various arms of Hungarian character. During the Swedish Vasa dynasty (1587-1668), however, the Occidental influence again became stronger. This was due to the Spanish, German and Swedish fashions then dominant at the European courts. The most important waves of Oriental influence, however, came in the last quarter of the 17th cent. in connection with the finally victorious wars with the Turks. It was John Sobieski as the Great Hetman, later on as king John III, who became the hero of the Turkish wars. In his time the Armenian merchants and artisans, who settled as fugitives in Poland came to play a role. Beside the Turkish influence came now the influence from Tatars of the Asiatic steppes and the Persians, linked to Poland with strong mercantile ties. Western influence and with it the straight double-edged swords still played an important part. Precious specimens are such swords as the Renaissance sword of king Sigismund I (1506-1548) probably made in Cracow. The fine sword made in 1540 and ritually broken in 1572 during the burial of king Sigismund Augustus, the last of the Jagellonian dynasty, belongs to the important pieces too. It comes from a Nuremberg firm. In the 16th cent. characteristic blades of Oriental character came in, but most of them were of Italian and German workmanship, f. inst. Genoa, with hilts more or less of Turkish types. At the end of 15th cent. came the Hungarian sabres to be very popular. In the blades they show marks as f. inst. the «sickle» or the names Genoa or Fringia. Attention must be paid to the sabres with blades showing special types of monograms: one or several letters such as IPZD, IRIGO, MPZI and other compositions. They are all of Polish workmanship from the first half of 17th cent. These workshops, however, are still unidentified. Occasionally occur blades with Cyrillic or even Greek inscriptions. In the 17th cent. the sabres have open hilts and closed hilts. The first group is Polish-Hungarian. Hilts with long langets are of Eastern type, related with certain Persian models, which became popular under the name of Karabela and survived into the 19th cent. The name should mostly be used for the parade models, often precious with gold and sil-

ver mountings. Karabela sabres and karabela types were not exclusively Polish. They are known from Hungary, Saxony and other places. Special types were imported from the East —a type linked to the very old Asiatic steppe sabres. Highly interesting are the sabres with closed hilts. All sabres of this type were solidly made with blades of a high quality. As battle weapons they were excellent and harmonized the elements of the East with the elements of the West. Moreover these sabres are an exclusively Polish type. Only in Hungary a similar type developed. The Hungarian type (with the closed hilt) spread about the end of the 17th cent. when the introduction of the Hussars came up in the European armies —a light cavalry dressed and armed in the Hungarian fashion. Even half-closed hilts occur in the 17th-18th cent. Of other types must be mentioned the palache with straight and broad blade, which was worn strapped to the saddle below the knees of the horseman and apart from the sabre strapped to his side. It was mainly used by the hussars. In regard to the palache there has been much confusion in other countries. The long thrusting sword with the straight blade was always strapped to the saddle below the knees. The blade was very long, about 150 cm, stiff and exclusively used for thrusting. In the 18th cent. matters became more uniform, similar to the types used almost all over Europe. The karabela of the 18th cent. differed considerably from its classical model of the 17th cent. Popular was in this period a type with closed hilt called the «*kosciuszki*» after the leader of the insurrection in 1794. Polish weapons from the 16th-18th cent. present an extremely complex problem. Among the many urban guilds and the hilt-centres one must be mentioned, that of Lwów, where the Armenians settled and made it an important trade centre for imported Oriental weapons and a centre for ornamented weapons and horse harness. The skill of these artisans were so great that even the most experienced experts were unable to distinguish authentic Oriental weapons from those of Lwów. The last part of the book treats the periods between 1797-1945, a historically and politically difficult period, not least the period with the Napoleonic wars. The types of weapons came to follow the history of Poland. The side-arms as a matter of fact came to follow the types predominant in the nations which dominated Poland. This little book gives the reader the impression that an investigation of the arms from Poland really is interesting and profitable. It is of importance to clear up misunderstandings in regard to the development on the European continent and to correct misunderstandings so frequently repeated in articles and handbooks about certain types of side-arms. The book opens an interesting field for investigations in regard to arms in Europe. Its many illustrations are interesting though one sometimes could wish the illustrations a little more

sharp. But it is a very useful book, a guide and manual to all who wish to know, how weapons really developed in this corner of Europe.

A. BR. H.

H. RUSSELL ROBINSON: *The Armour of Imperial Rome*. Arms and Armour Press, Lionel Leventhal Limited. London 1975. Ed. Irving Farren. Designed by David Gibbons. 200 pags., 531 plates, 9 colour plates, 204 line drawings. Index.

The present work must be considered a standard work on Roman armour and its accessories, a valuable handbook to investigators in Roman military matters, history and equipment of the mighty armies which passed over almost all Europe and great part of the Near East. Students and investigators interested in Imperial Rome will here find a lot of important material. Even students of periods anterior to and later than Imperial Rome may as a matter of fact be interested. Byzantine equipment is to a great extent a continuation of Imperial Roman equipment. We too find material for a better understanding of development in Medieval Europe.

The investigation is based upon a comprehensive archaeological material put together and organized systematically, the author having devoted himself to a fine classification of the material existing. Representations in art —always important— are, however, second to archaeological objects, because the artists frequently are devoted to mannerism, poetical licence, deliberate stylization or archaisms, particularly in regard to elements from Hellenistic Greece. Exceptions are the many interesting, often coarse, tomb stelae from the Roman provinces, because the provincial artist generally has given a realistic picture of the facts. Among the most important art monuments are f. i. the altar of Domitius Ahenobarbus, the imperial statues, e. g. of Augustus and all the Imperial house, Trajan, Hadrian etc., the Trajan—and Marcus—Columns and the many precious Triumphal Arches in Rome and in the provinces. Of particular interest are the reliefs from the famous Tropeum Traianii from Adamklissi in Rumania, this monument being of provincial character and a work by native artists. The archaeological material comes from almost all provinces and from Italy; particularly rich are the Rhine regions, parts of Britain and the Near East.

The book consists of two main parts: the helmets, and the armours. Most comprehensive is probably the part treating the helmets for its many archaeological objects. Of particular interest in the second part is

the chapter dealing with the *lorica segmentata* thanks to the outstanding finds in Britain and the author's indefatigable experiments with reconstructions based upon the archaeological find from Corbridge and Newstead.

In his introduction the author explains his purpose: to give a comprehensive study of the Roman armour, a study which till now mostly has been confined to articles in reviews dealing with single objects or single groups or categories of objects. Apart from such main works as the old opus by L. Lindenschmidt, and the erudite book by Couissin no complete work exists. A series of fine linedrawings and an abundance of reproductions of helmets, armours, accessories, sculptured art and tomb stelae demonstrate the development. It has been no easy task to organize the fine typological line of development, considering that not two objects from same category are identical, all of them being more or less individual though of a common basic shape. The classification looks convincing.

The armourers and the helm-smiths of the Imperial legions, whether in Gallia or in other parts of the empire, had their own workshops at the Imperial forts along the frontiers. They made everything by hand. Thus every detail is depending upon the skill of the smiths and their workmen, who put their individual print or style on their works. Their personal style is evident. The author has examined all accessible material, has made reconstructions in shape of drawings and of metal—bronze and iron—in order to prove and test his results. But still quite a lot of problems exists. Until some day excavations reveal more material and specially a complete workshop in some or other Roman camp at the frontiers and particularly a complete set of tools and raw-material still various problems cannot be solved in spite of such contemporary illustrations as the mural painting from Pompeii or the reliefs representing Vulcan at the anvil. As a matter of fact tools and methods did not differ much from what we know from representations of late Middle Age, or from the Nuremberg Craft Book and the workshop of Maximilian II in Weisskunig. In an early period workshops were not so specialized as later on in Imperial Rome. In the days of Diocletian existed special manufactures in many parts of the empire: workshops for swords, daggers, shields, helmets, armours, leatherwork, gold and silver inlay, bows etc. Capua and Aquilea were famous for their armament, which probably did not differ much from Greek Italian style. In the early 5th cent. A. D. compiled word: *Notitia Dignitatum* are recorded 44 specialized workshop in various parts of the empire. In ancient Greece the workmen and chiefs were slaves. Not so in Rome. In the provinces the slave element barely existed. Craftsmen were free-born men. This

probably was the case in Gaul from where most of the finest and best material originates. Gallic weapons had fame. No doubt the *fabri* of a *Roman* legion were able to make such weapons and even armours if needed, but their main occupation was to repair broken and damaged weapons and armours or in case of emergency to supply the stores of the camps.

First part of the book treats the *helmet, galea* or *cassis*. In 11 chapters the author traces all types known to him and makes a typology using the shape and details of the helmets as a basis. First of all comes the so-called jockey-cap type. The term is an almost international application used for identifying any classical helmet with a peak-like projection to guard the top of the nape, what so ever has been the shape or the manner of fastening the peak. Important and interesting is the so-called *Montefortino-type* with its many variations. The name comes from the necropolis of Montefortino near Ancona. It is a *Celto-Italic* type used in many places, for instance in Spain. The *Gallic* type and the true jockey-cap is the *Coolus-type* called after the finds from Coolus in the Marne district in North Eastern France. Most of the Coolus-type helmets probably are the works of Gaulish smiths. There may have been centres for such workshops in the Rhine district for the legions of Caesar. The earliest types with the reinforcing peaks were of Augustaeon time. Many variations exist. Another important group is the *Agen/Port* group named after its finding places. It is an interesting group. The Port type is known amongst other from Alesia and may have been worn f. i. by the sappers of Caesar at the siege of Alesia. A good help to the classification is to be found in such details as e. g. the cheek-pieces with their shapes, bossed ornaments and their hinges. The *Imperial-Gallic* helmet of the time of Augustus and his successors displays —just as the Agen/Port types—a craftsmanship not seen until in the later part of the Middle Ages. The quality is excellent. The material is mostly iron. The classification of these helmets is mostly based upon certain details such as embossed eyebrows and their variations of shape, crest-holders, ear-guards, cheek-pieces and the embossed steps on the neck-guard. A fine series of crest-holders and attachments exist for the imperial helmets. Beside the Imperial Gallic helm-type and its variations another important type exist: the *Imperial-Italic* type the basic shape of which no doubt has something to do with the Attic helmet. The majority of the Imperial-Italic type helmets probably originally have something in common with Greek-Etruscan and with Italian helmets of Republican time and they may be the products of Italian workshops.

Differences existed between legionary and auxiliary helmets for infantry and for cavalry. The auxiliary specimens probably were of inferior

character and with eventual inscriptions of names and places in a barbarized latin. Sculptured material from 2nd cent. exists but no doubt highly stylized. The auxiliary cavalry since 1st cent. B. C. made the active part of Roman cavalry. Grave stelae from 1st cent. A. D. depict auxiliary cavalry in many forms, and from them we get a good impression of this important cavalry and its equipment.

Special chapters are dedicated to the *cavalry sports helmets*, the origin of which apparently is rather obscure. The masked helmets probably were no invention neither by the Celts nor by the Persians, but probably imitated in Persia in 2nd and 3rd cents. A. D. Many interesting and fine specimens of masked helmets are found. Ammianus Marcellinus and others give descriptions in 4th cent. A. D. of Persian cavalry with finely made and well-suited masked helmets, at a time when they were no longer in use among the Romans. A link between the late Greek, Etruscan and the Roman Republican masked helmets is still missing. Among the many elegant and interesting specimens preserved —in bronze and in silvered iron— are the fine masked helmets from Ribchester, now in Brit. Mus., and from Newstead, now in Edinburgh, a characteristic specimen from Vize in Thrace, now in Istanbul, the precious specimens, one of bronze, the other of silvered iron in the Archeol. Mus. of Damascus (specimen from Homs) and several other helmets of characteristic shape and moulding.

Next follows the chapter of the officer's helmets, finely represented by the specimen from Autun for a senior officer. The chapter is followed by the pages treating the crests, their material, types and shapes.

Part II of the book deals with the armours and their accessories. It comprises 7 chapters. The body defense can be: *muscle cuirass*, *lorica squamata* or scale armour, *lamellar armour*, *lorica hamata* or mail and *lorica segmentata* or segmented armour. The armour-chapters are followed by chapters on greaves, ocreae, horse armour and saddlese. The development or at least representations corresponding to the Roman types can be followed in Byzantine art up to the end of this empire and in art from European Middle Ages to the imperial and princely armours of Carlos V and other high rank persons of the Renaissance.

A particular history has the so-called *muscle cuirass*, which can be followed back in time in ancient Greece and Etruria, where its ancestors were made in hammered bronze (Fig. 1). Indeed, it got a long lifetime from early Greece during several centuries B. C. up to the Renaissance. This is owing to the fact that the armour was considered a symbol of Roman Imperial might and sovereignty. We find it on the statues of Caesar and Augustus and on several of the princes and emperors of Augustean descent, on Trajan and Hadrian and later emperors just up to



FIG. 1.—Statue with muscle cuirass. Julius Caesar; Palazzo Senatorio sul Campidoglio, Rome.

Byzantine time (such as on the colossus of Marcianus in Barletta) and in Byzantine illuminations of the 12th and 13th cents. and later. The Praetorian guard wore it in the 2nd cent. A. D. as seen on the excellent relief of this guard now in the Louvre. The type found in Rome was, in its origin, the Hellenistic type. To imperial Rome and even later on it was considered fashionable to follow Hellenistic modes. On the Trajan Co-

lumn officers are dressed in muscle armour and even on the Marcus Column some of the officers are dressed in muscle cuirasses. Through Republican and Imperial time it was the distinction of military leaders. Imperial statues of 1st and 2nd cent. have precious muscle cuirasses, but the anatomy is completely obscured by the many ornaments and figure scenes sculptured on them. Such are e. g. the cuirasses of Augustus from Primaporta and many other princely and imperial statues of the cent. The ornaments are either embossed or applied. The pteruges probably did not belong to the cuirass but to a soft leather undergarment. They are longer and softer than were the pteruges of ancient Greece. The ancient Greek and Etruscan muscle cuirasses of bronze reached a high quality in regard to anatomical and artistic performance. They were never surpassed later on. For the Macedonians and for later time Greek cavalry the muscle cuirass had been the most favoured fashion. We find it f. i. on the mosaic of the Alexander Battle from Pompeii now in Naples and on the reliefs of the Alexander sarkophagus in Istanbul as well as on the Pergamum frieze.

The *scale armour, lorica squamata*, belongs to the oldest metal body-defense of man. By the Romans they were used through almost 800 years. They were practical and cheap, and for that reason the auxiliaries often were furnished with them. Just as their relatives, the lamellar armours, they originate in the Middle East, and are known as early as about 1700 B. C. or maybe even earlier. There are several sizes and shapes of scales, one over the other, imbricated like fish scales or like roof-tiles. From 10th cent. B. C. exist scale armours from Egypt here for the first time mounted on a leather garment. At the Trasimenian lake —from the period of the famous battle— has been found a scale armour, now in Toronto. This type of armour may have reached Italy from the Greeks via Cypros, from where fragments of 7th cent. B. C. exist. No complete Roman scale armour has till now been found. An exception is the horse bard of scales from Dura Europos from 3rd cent. A. D. The relief from Palazzo Ducale in Mantua shows a representation which may be an equivalent to the type described by Polybios from the middle of 2nd cent. B. C. Lorica squamata was probably used by auxiliary cavalry. It was sleeveless with broad shoulder straps from behind and tied down to rings on the breast. An interesting series of scale armours occurs on the reliefs from Tropeum Trajani from Adamklissi. These Adamklissi-metopes with the wars against the tribes of the Dacians differ in regard to armour from other contemporary monuments. They show the legions equipped with an armament different to other Roman legionaries, because the warriors had to be protected against the particular Dacian weapons, not least the dangerous falx with its long haft. Spe-

cial parade bronze breast plates with embossed reliefs to be worn on scale armours have been found in various sites, closed with slots and pins. The Sarmatian cavalry on the Galerius Arch of Saloniki (297-311) wears the late form for lorica squamata.

Lamellar armour is treated on pages 162 ff. The Assyrians had been masters in producing and wearing lamellar armours since time of old. Such armours had been worn already by the Etruscans as seen on the precious statuette of Mars from Todi with its fine representation. It was not very popular in Italy, but in the Near East we find excellent representations, very characteristic, indeed, worn by the Palmyrene god Aglibol and other gods. The armour style is Hellenistic, but the sword is the Roman gladius. *Cuishes* of laquered raw-hide lamellae, used by the Persian and Parthian clibanarii, have been found in Dura Europos from 3rd cent. A. D. In the Near East this type of body armour was highly esteemed into the Middle Ages. From Cypros lamellar armour is known in the 7th cent. B. C. It is, however, not before in the 3rd cent. A. D. we find the true construction and lacing. The clibanarii used this kind of armour and the type can be followed through Byzantine time up to much later periods in representations of e. g. Saint George in Russian icons.

Mail armour, lorica hamata, is a considerably more complicated type of body defense. Mail armour needs specialists who are not to be found among nomadic tribes. It needs fixed settlements, workshops and tools of special character, and above all specialized craftsmen. The earliest known specimen represented in art is on the Pergamum frieze, the Galatian mail shirt. The Romans no doubt learned it from the Gauls. One of the famous Osuna reliefs from Spain gives a representation of a legionary dressed in a Gaulish shirt, greaves and with a Gaulish shield. It is worn by legionaries and cavalry in the frieze of the monument for Aemilius Paulus in Delphi from 168 B. C. The type of mail described by Polyhios is that seen on the Delphi frieze worn by heavy cavalry and legionarii. The shirt was without sleeves but reinforced with great shoulder straps of mail brought over from the back. Those of the cavalry have short slits in their sides to facilitate riding. We find the same on the altar of Domitius Ahenobarbus from 2nd half of 1st cent. B. C. Waist-belts were important for the long mail shirts. Some very characteristic representations of mail worn by both legionarii and cavalry occur on the Adamklissi monument. Some of the soldiers have a balteus over the right shoulder, indicating the sword at their left side, except in a few instances. Lorica hamata could be worn beneath another garment, but always over a tunica. Large fragments of lorica hamata have been found for instance in Britain.

Highly important is the chapter dealing with the so-called *segmented armour, lorica segmentata* (Fig. 2). The denomination is of a rather new date and doesn't originate among the Romans. This armour is a

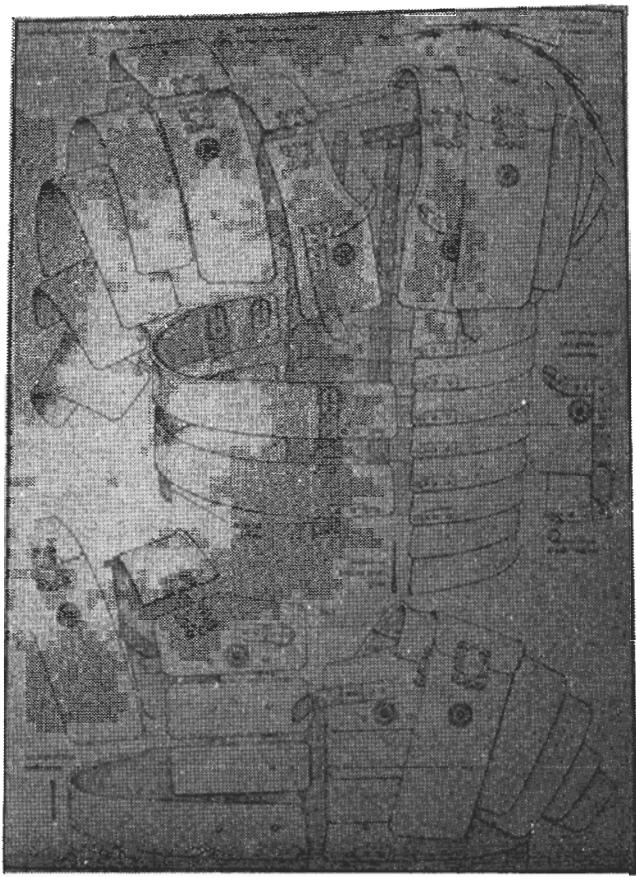


FIG. 2.—*Laminated armour, lorica segmentata, of Corbridge type «A».*

legionary armour from 1st and 2nd cent. A. D. built up of segments or laminations of iron. It became the symbol of the Roman soldier as represented on various monuments and reliefs. In regard to front and

back the artists, depicting it in their works, have to some degree understood the construction but in regard to shoulderparts, collar and their construction and combination the illustrations are rather free and misunderstood; the construction was troublesome to them. A complete understanding of this special armour and its real construction was not possible until archaeological finds revealed its secrets. During the last 80 years the ideas about the construction little by little became better known thanks to the finds of f. i. Carnuntum, Newstead and particularly from Corbridge-on-Tyne. The first scientific reconstruction was made by colonel von Groller from the fragments found in the armoury of Carnuntum in 1899. He unfortunately reconstructed the armours as if they had been fastened upon a leather undergarment, while the truth is that they were combined by means of leather straps on the inside. After the last and very important find at Corbridge and with much investigation, patience and experiments in regard to electrolytic reconstructions it was possible for the author to make the true and authentic reconstruction and even to find several patterns of this type of armour. The remarkable find at Corbridge in 1964 changed much of the theories by von Groller and helped to an understanding of various details. Laminated armours can be joined by internal straps of leather as apparently the armours from the time of Trajan have been. The system is similar to the system of the laminated armours of the Renaissance. The excavators from the universities of Durham and Newcastle-on-Tyne brought into the light a find which to Roman military archaeology is of no less importance than the find of the tomb of Tut-Anch-Amon i Egypt many years ago: the contents of a wooden chest with rusted iron and bronze pieces etc. from the time of about 98-100 A. D. when the Caledonians made their attacks against the Roman frontier forts of the North line. The most important contents of the chest were the parts of the segmented armour with its girdle plates, collar plates and shoulder-guards attached. The majority of internal leathers and bronze fittings were preserved. Thanks to this find it is now possible to reconstruct without any doubt the lorica segmentata. Two main types can be designated with a slight variation of a third type. The reconstruction with the many details must have been a work of patience. These types of lorica seem to have been used since the second quarter of the 1st cent. A. D. From the finds in military places it seems probable that the type A has been most frequent. From fragments from Newstead another model can be reconstructed. It is impossible to tell how long time of the first century Corbridge armour was in use or when it was replaced by the Newstead type. Probably it has lingered in service as late as in the middle of 2nd cent. One of the last representations of this lorica is seen on the Arch of Septimius Seve-

rus, ca. 203 A. D. Skirt scallops or pteruges first appear later on, as seen on the base of the Column of Antoninus Pius with its group of Praetorians. Laminated or segmented protection of the limbs may now and then have been in use by Roman soldiers such as seen from the laminated thigh defenses now in the Archeol. Mus. of Edinburgh. Such a defense with the laminates fastened to straps of fine goat skin was found at Newstead. The catafracts had some kind of thigh guards but how it really was is not quite sure. Arms defense of much segmented character as that seen on the graffitto of Dura Europos was apparently only necessary among soldiers fighting the Dacians as seen on the monument of Adamklissi. By the 3rd cent. A. D. the heavy armed cavalry of the Persian type became more and more common in Roman service. This is easily seen from the finds from Dura Europos. Heavy armed cavalry gained in favour as the legions declined. References by 4th cent. historians such as f. i. Ammianus Marcellinus frequently refer to these troops. The illustrations from the 5th cent. copies of Notitia Dignitatum show much laminated arms defenses similar to that used by the clibanarii and the heavy cavalry of the Adamklissi monument.

The *greaves, ocreae*, are treated on pages 187 ff with fine illustrations of the leg defense and knee-cops with plain and with embossed relief decoration representing f. i. Herkules or Mars. Particularly for cavalry sport were such decorated greaves in use, while the military specimens generally were plain. Knee cops were originally fixed to the leg defense by means of hinges and pins. By late Republican time only the centurions wore greaves in active service. Much knowledge can be found on the tomb stelae. The majority of Roman greaves were tied to the leg and were not spring on greaves as the Greek and Etruscan specimens. On the monument of Adamklissi we see the legionarii of Trajan wearing greaves. The thin bronze greaves with embossed ornaments were used in the hippika gymnasia and correspond to the helmets for such use.

Intercrusting is the chapter treating *horse armour*, with chamfron, peytrals and other details. The fine pieces now in Karlsruhe and in Naples show excellent workmanship of Italian character, and let us once more see the high technical skill of the Italian armourers. It is not possible to tell if such armours were used for the heavy Roman cavalry or not during Republican time. Some information can be found about its use among auxiliary cavalry in 1st and 2nd cent. From the fort at Newstead come the earliest datable objects of horse armour for cavalry displays, the leather chamfrons decorated with metal studs and rivets of various sizes and with tooling. Eye-guards have been found in several places f. i. in Corbridge and Chester and are from the frontiers of Hadrian. Peytrals for hippika gymnasia from 1st cent. and 2nd cent. probably were

of stiff leather like the chamfrons. Peytrals exist in several collections made of bronze plate. The most remarkable series of chamfrons are those from the Straubing Hoard from 1st half of 3rd cent. with a precious specimen. In the 3rd cent. the completely barded horse in Perso-Parthian fashion made its appearance in the heavy Roman cavalry. From Dura Europos are two precious specimens made as trappers of coarse linen covered with bronze scales. One now belongs to Yale University but is exhibited in the Woodman Higgins Armory in Worcester. The book terminates with a little chapter about Roman saddles which in reality was only a kind of chabaque with horns of leather, inside with metal stiffeners. Such metal pieces formerly were interpreted in various manners.

The book has an abundance of representations of objects, helmets as well as armours, ocreae and horse equipment. Further there are many and fine illustrations of Roman art monuments, indeed very interesting, such as f. i. the relief with the bireme, probably from Marcus Antonius' defeated fleet at Actium; now the relief is in the Vatican Mus. The metopes from Adamklissi are important, and there are many representations of imperial statues, reliefs from Triumphal Arches and —probably more interesting in this connection— the reliefs from the tomb stelae, many of them not reproduced before. The author has put down in this work a huge knowledge and experience, much investigation and experiments in order to procure so complete and true a representation of the Imperial armour and equipment as possible. A monography like the present is important in regard to Roman military matters, history and culture. It helps to a better understanding of problems concerning early European Middle Ages. Transition from Classical Antiquity to Middle Ages was not so abrupt as sometimes told. Further it shows that the Occident has not alway been the recipient but has given important impulses to the Orient too.

There are no bibliographical pages, but valuable bibliographical information is given in the notes which follow each chapter. The index is excellent. The book is a good basis for further detailed investigations.

A. Br. H.