

ARSENALS AND ARMOURIES IN SOUTHERN GERMANY AND AUSTRIA.¹

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PART I.

When I first had the honour of writing in the *Archæological Journal*, now ten years ago, I endeavoured to formulate what I considered the true principles which should guide the student of Mediæval Arms and Armour in his researches :—"For the study of ancient armour to be successfully pursued, it is of primary importance that a careful examination should be made of every existing specimen within our reach. This alone will enable us to derive full profit from our researches into ancient authors and our examination of ancient monuments. Every hole and rivet in a piece must be studied and its use and object thought out. The reasons for the varied forms, thickness and structure of the different parts of armour must have special attention. The methods of work by which the pieces were produced, and the nature, quality, hardness, and colour of the metal should all be the subject of close investigation. This preliminary study will alone enable the student to form a sound opinion on two most important points. First, the authority to be accorded to any given representation of armour in ancient art, for he will then be able to discern whether it was copied from real armour worn at the period, or whether it was the outcome of the artist's imagination. Next, whether a piece of existing armour is genuine or false, and whether or no it be in its primitive condition."²

¹ Read at the Monthly Meeting of the Institute, Feb. 5th, 1891.

² Ancient Helmets and Examples of Mail. *Arch. Journal*, Vol. xxxvii, p. 466.

Again, five years ago at Derby I insisted with reference to the same study, that "it is necessary to have a very complete technical knowledge of real armour; to have seen, to have examined, to have weighed, to have felt as much real armour as possible, to have endeavoured to learn how armour was made, what means of manufacture the mediæval armoured possessed, to have thought out the why and the wherefore from a constructive and mechanical point of view of each piece found and of each form given to it;"¹ and I remember adding on that occasion that it was not unprofitable to have tried wearing armour for some hours, and, as far as possible, handling all the different forms of weapon.

I have had the satisfaction of finding since then that my fellow students in this country and abroad, accept these principles and in many cases work on these lines, and I myself have always done so, convinced that the true foundation for the study of armour and weapons must be a thorough practical acquaintance with as many existing pieces as possible; I may almost say a mechanical or engineering acquaintance with them. It is by that study that we shall learn what were the needs of the fighting man at different epochs, and how those needs were met by the skill, ingenuity and invention of the armoured. Thus alone can we get the clue to the development of types and forms.

Just as we now see each invention in ordnance or in explosives causing a corresponding development in the construction of our armour-clad ships, and each improvement in the armouring of those vessels stimulating the artillerist to new efforts to obtain greater penetration with his projectiles; so the progress of arms and armour in past times are inseparably linked, and mutually explain one another. This is a constant factor in the question, but in mediæval times we have a special and charming factor, which can scarcely be said to have much influence on matters military or naval in our own days, and that is the exquisite artistic instinct of the gifted workmen, who without ever impairing the strength or practical utility of the piece, lavished all the treasures of their taste and

¹ English Military Effigies, &c. *Arch. Journal*, Vol. xliii, p. 327.

imagination on the richer armour and weapons produced in the best times of their manufacture.

No study of books, paintings, documents or monuments, other than the actual weapons and pieces of armour, will give us this mechanical knowledge. We cannot tell the flexibility or stiffness of a blade, its weight or thickness, from a drawing in a manuscript, or description in an inventory, and yet when we meet with a sword, it is just these technical matters which will prove our truest guides to a knowledge of where and when it was made; and, doubtless, at the time when the sword was in use, these were the most vital questions of all to its owner.

The documentary portion of the study is of the utmost importance; far be it from me to deny it, but the two must go hand in hand for the conclusions one may form to approach as nearly as possible to truth. At every step, if carried on together, the two branches of the study will mutually throw unexpected light on one another.

Most of the errors into which writers on arms at different times have fallen, have arisen from want of what I will venture to call experience in arms and armour. It is manifest that all that remains to us of European weapons and armour does not represent a tithe of the varied forms which we know must have been made when its use was universal from Poland to Britain, from Norway to the Straits of Gibraltar. But still, each collection visited by an observant student teaches him something new, and just because so little is left, it is important that, as far as possible, he should be acquainted with the whole of it. Above all, the comparative study of collections enables him to localize types. If a certain type of weapon is found with great abundance in one country, whilst examples of it are rare in others, it may be fairly inferred that the country where it abounds is the land of its origin.

After all, the comparative method is the foundation of all true scientific inquiry and it should be applied equally to archæological research. To build up a scientific theory, we must, as far as possible, have a knowledge of all the phenomena which have ever been observed in connection with the subject we are investigating. The naturalist needs to be acquainted with every variety of

beast, bird or fish on the face of the globe, and even with those which have been buried beneath its surface in geological epochs, before he can attempt to generalise and build up correct theories. Who would attempt to write a complete system of Natural History, were his knowledge of animated nature limited to those forms which inhabit this island? The same holds good with archæology and the arts of the past. What light has been thrown on Greek antiquities in recent times by the investigation of the remains of earlier peoples, who were unknown to our forefathers except by name! How different is our knowledge of Italian art now, when a systematic comparison of its monuments has for years been carried on in all the galleries in Europe, from what it was when the writings and appreciations of Vasari formed the principal basis for it! Even in more specific matters, who can thoroughly understand the remains of a monastic establishment in England, unless he have a knowledge of the forms of the parent houses in Italy, France or Flanders?

Holding these views, I had long felt that there existed a most serious gap in my own limited knowledge of arms and armour. I knew that of all the armouries in Europe, the Ambras collection at Vienna was in many ways the most interesting and the most authentic. With the exception of, I think, eleven suits pillaged by the French, the collection had remained untouched since the middle of the sixteenth century, when it was formed by the Archduke Ferdinand of the Tyrol. Besides this I had heard of the great treasures preserved in the Imperial Arsenal, of suits of armour and weapons which had been deposited there immediately after they had been used in tournament, tilt or pageant, and never since disturbed. Hitherto, I had always regarded the Madrid armoury as the richest in Europe. Alas! since the days of Charles the Fifth and Philip the Second, it has suffered from continued robbery and neglect. There is scarcely any collection of importance which does not contain pieces which now can be shown to have once belonged to it. Even my own humble collection contains a bevor which we now know passed from the armoury of Philip the Fair, in Flanders, into that of Charles the Fifth, at Valladolid and belonged to one of the sallads described in the album

of the arms of that emperor as "old stuff that came from Flanders." Missing pieces of suits at Madrid are being continually identified in other European collections by the present learned and indefatigable director of the Spanish armoury, the Count de Valencia de Don Juan.

I must here mention that for six or seven years past it has been my habit each autumn to meet that distinguished student of arms in Paris, where, with three or four other enthusiasts, we would pass pleasant weeks comparing notes and talking of arms. About the same time, he and I, independently, began collecting all the armourers' marks and notices of armourers we could meet with, and each year it is our custom to supply one another with any notes that we may have made in the course of the year; the result being that if either of us were to lose his collection, which now amounts to over two thousand sheets, the results of our work would not be lost. He, I must add, set me the example of this generous method of study, at a time when my own collection was very small and his already considerable.

This excellent friend and fellow-student had assured me that the two collections in the Austrian capital, in every way surpassed the Spanish one, if we except the unique series of pieces made by the Negrolis for Charles V.; and, moreover, it had long been settled that at the first opportunity I should make the journey to Vienna with this congenial companion.

Last summer circumstances enabled us both to carry out our project. He kindly left the itinerary to me, and I endeavoured to arrange it so that the fortnight, of which he could dispose, should include as much armour as possible.

Germany has, on the whole, preserved a more perfect series of its ancient armour and weapons than any other country in Europe. There are several reasons for this. In the first place, Germany was perhaps the country which produced most arms through the course of the middle ages. Arms of German make are found in abundance in every other country. Although the blades of Toledo were prized above all others in Spain during the sixteenth and seventeenth centuries, three out of every four rapiers one meets with in Spain itself, have German

blades mounted in Spanish hilts. In English swords of the same epoch, the proportion would be nine out of every ten. This shows, that just as in the present day, Germany floods the markets of Europe with cheap imitations of the goods manufactured at greater cost in other countries, so in past times did it compete in like manner; for all the German blades found in these Spanish hilts are formed more or less after the Toledan pattern, with inscriptions generally in bad Spanish, recording the names and origin of their makers. Heinrich Köhl becomes *Enrique Coel*, Peter Lobich, *Pedro Lobaco*. Clement Dinger adds, "Mi sinnal pajaro," my sign is a bird. They generally have the honesty to add IN SOLINGEN or EN ALHAMANIA, but there are other blades which are distinct forgeries of Toledan blades, with imitation Toledan names and Trademarks.

And here we have an excellent example of the value of what I have ventured to term experience in actual arms. When one meets with a fine blade signed *Monte en Toledo*, the natural impression would be that the blade was of Toledan make; but, nevertheless, I have the full certainty that the whole series of blades signed in that manner are of Italian fabrication. I may briefly state that the reasons for this certainty are to be found:—Firstly, in the form and fashion of these blades, which differ slightly from the Toledan model, and approximate to the Italian form; next, in the fact, that these Monte blades almost all come from or can be traced to Italy, whilst they are almost unknown in Spain; and lastly, because there was a very celebrated Toledan maker named Pedro Velmonte or Belmonte, with whose blades and manner of signing his name we are perfectly acquainted. Still, nothing but a very extensive acquaintance with sword blades would enable one to come to such a conclusion with any degree of safety. In like manner we know that the vast number of blades signed SCHAGOM or some other corruption of the Spanish name Sahagun, are Solingen imitations of the work of the celebrated Toledan master of that name, whilst a good half of the blades inscribed *Tomas Aiala en Toledo* are also of German origin.

It is also certain that, common as blades bearing the

signature ANDREA FERARA are in this country, scarcely any of them are the work of Maestro Andrea de i Ferari, who gained such great renown for the superb temper of the blades which he produced in his workshop at Belluno in Venetia in the second half of the sixteenth century, where he worked with his brother Giovan Donato de i Ferari, some of whose blades signed ZANDONA, still exist.

Nearly all the blades commonly attributed to Andrea Ferara are manifestly of seventeenth century make, and Boheim states that Andrea was born in 1530 and died about 1583.¹ Cicogna in his "Trattato Militare," published at Venice in 1583, specially mentions the two brothers as celebrated blade makers.

It is possible that a few of the finest blades existing in Scotland and England bearing the name Andrea Ferara may be his work, but as yet I know very few which I can positively attribute to the master, or even to the epoch when he lived; and it is curious that the Italian collections possess very few even bearing his name. What is certain is that for nearly fifty years after his death Solingen turned out hundreds of blades bearing his name, for exportation to those countries where a true Ferara was held in high repute, just as it supplied false Toledo blades to those where a rapier was preferred to a broad sword. In short, it stamped *Thomas Aiala* on a narrow stiff blade, *Sahagun* on one of medium width, and *Andrea Ferara* on a broad flat one, as a matter of course, because each of these masters had, no doubt, been celebrated for that special make of blade.

Italy, too, was a great centre of manufacture, and it might be hard to say whether Italy or Germany produced most during the middle ages, or was more excellent in the armourer's art. But it is not in Italy, at the present day, that the finest Italian armour or arms can be seen. Of all the pieces signed by that greatest of all masters, Negroli of Milan, I do not think one now remains in Italy. So, the grand fifteenth century suits of armour made by his predecessors, the Missaglias, are not to be found in the land in which they were made. It is at Vienna and Bern that they can be studied, whilst helmets

¹ Handbuch des Waffenwesens. Leipzig, 1890, p. 663.

bearing their mark are to be found in France, England and Spain.

But if Italy shares with Germany the honour of having produced the greatest amount of arms and armour, and even of having surpassed it, in the beauty and originality of its inventions in this branch of art, there is no question that it is in Germany that the study of arms can be most successfully pursued. There has always existed in the Teutonic mind, a conservative and somewhat romantic care for the weapons of past ages. Every town at one time had its arsenal; every noble who owned a castle, had his armoury; and the conservatism of the Germans has preserved some of these collections to us almost in their entirety. The town of Gratz, in Styria, possesses to this day an arsenal containing the complete equipment in arms and armour for a force of eight thousand men, such as it might have turned out during the thirty years war. The whole collection reaches the amazing number of 26,000 pieces!

In Switzerland, where Teutonic ideas were prevalent, there are more than a dozen towns possessing more or less well stocked arsenals.

Not only has Germany preserved great stores of its arms and armour, but it has supplied the collections in other European countries with the majority of the pieces now found in them. It may be affirmed with little hesitation that in every collection, be it in France, England, Italy, or even Spain, more than half, and in most cases three-quarters of the pieces are of German origin. Many of them, particularly in Italy and Spain, passed into those countries at the time of their manufacture, but in collections of more recent formation, as in France and England, Germany has supplied dealers and collectors for years past with the greatest proportion of these antiquities.

Our first stage on the journey was Bern. We knew that the Museum there was marvellously rich in tapestries of the fifteenth century, and possessed some arms, but I was not prepared to find there one of the most interesting suits of armour with which I am acquainted. Hitherto I had regarded the suit attributed to Frederick the Victorious, at Vienna, as the oldest complete war harness

remaining to us. There is every reason to believe that it was made about the year 1450 by one Tomaso da Missaglia, at Milan, who was then, perhaps, the most distinguished armourer in Europe. Before we had been five minutes in the Museum, I perceived the greater portion of a suit of armour of precisely the same character and epoch as that one, and soon discovered that it bore on all its principal pieces, the helmet alone excepted, the marks of the very Missaglia just mentioned.

The mark on the helmet, which had, however, been evidently made for the suit, was apparently a German one. It is the clover leaf which Boheim attributes to Treytz of Innsbruck.

Without the aid of illustrations it would be tiresome and useless to attempt a detailed description of the peculiarities of these suits, but the large ovoid helmet of a bassinet character, the construction of the shoulder and elbow pieces, and the presence of four tassets besides a broad tasset shaped piece at the back of the shirt, all clearly prove its early date. After a brief survey, we sought the Director of the Museum, M. de Roth, a young and ardent student of antiquities, and he kindly had the whole suit dismounted for our examination. The leg pieces and gauntlets were wanting. Looking about, I saw on an Elizabethan suit, a pair of legs which appeared to me of Italian fifteenth century form. Turning to M. de Roth, I said, "I should not be surprised if those were the missing legs of your Missaglia suit. They were speedily unmounted and there true enough was the same armourer's mark as on the rest of the suit.

In many ways the Missaglias are the most interesting armourers of the fifteenth century. In the first place they are the earliest armourers whose work we can identify by their marks, and of whose family and lives we know something. The discovery of the Missaglias is due to the researches of Mr. Wendelin Boheim, the learned Custos of the Imperial collections of Armour at Vienna. He related to me the manner of it one day as we were traversing that fascinating capital in a tramcar together.

In former years he had served in Lombardo-Venetia as an Austrian officer, and was well-acquainted with Milan and the Italian language. Knowing that the Imperial

collection was particularly rich in works of the Milanese masters, the thought came to him to revisit Milan and endeavour to discover something about them in the archives there. At Milan, as in many Italian towns, there is Via degli Armorari or Armourer's Street, and a Via degli Spadari or Swordmaker's Street. Boheim was naturally attracted by these names and spent some time gazing at the different houses in these streets. Peering into a curved passage in the courtyard of a house in the Via degli Spadari, he saw on the abacus of a column of the end of the fourteenth century, something which resembled the marks on suits of armour, and looking more closely, he instantly recognised in this sculpture the identical marks existing on the two earliest suits of armour in the Ambras collection. He at once hurried to the archives and addressing the Director, Signor Pagani:—"Do you know," said he, "to whom such a house in the Via degli Spadari belonged?" "Yes," replied the other, "to the family of Missaglia, and we have a bundle of papers concerning them." The result of Boheim's investigations are to be found in his remarkable memoir on the Milanese Armourers of the fifteenth and sixteenth centuries, published in the *Jahrbuch*.¹

There is abundant testimony that about 1450, at the very epoch when Missaglia was making these suits, the armour of Milan was very much in advance of that made in other countries, and was regarded as the most complete and impenetrable to be met with. The armet, the most perfect form of close helmet, had just been invented in Italy. It was a helmet which *enclosed* the head, allowing it to turn freely, and the weight of which rested on the shoulders. Before this, and in other forms of helmet, either the whole weight of the headpiece was borne on the head itself, as in the bassinet with a camail of mail, or the helmet was fixed fore and aft to the breast and backplates, as in the large ovoid bassinet with a gorget or camail of plate, and in this last case when the wearer wished to turn his head he had to do so *inside* the helmet. But earlier than this the fame of Milanese armourers had spread to other lands. In 1398, when the Earl of Derby, afterwards Henry IV., proposed to fight a duel with the

¹ Werke Mailander Waffenschmiede in den Kaiserlichen Sammlungen, 1889.

Duke of Norfolk, it was to the Duke of Milan that he applied for armour, and the Duke sent him not only the harness, but four of his best armourers to arm the Earl to his wish.¹ It is only fair to add that the Duke of Norfolk sent to Germany for his harness, but the two facts taken together tend to show, that, as I always suspected, the armour made at those times in England was not quite equal to that made in Germany and Italy. About the same time, Charles V., of France, was causing armour to be imported in large quantities from Milan.² But by 1445 the harness of plate at Milan had almost attained perfection, as may be learnt from the medals of Vittore Pisano and the pictures of Paolo Ucello. At that time it was causing wonder at the wealthy Court of Burgundy by its admirable quality. In 1446 the Seigneur du Ternant fought Gaillot Baltasin, Chamberlain to the Duke of Milan, in the town of Arras. Baltasin was a Castilian, but he had just come from Milan to gain renown by feats of arms, and his harness was no doubt of the latest Milanese fashion. In one of the combats, after a course with lances, the Seigneur du Ternant "*commença à charger et à querir son compagnon de la pointe de l'espée, par le dessous de l'armet, tirant à la gorge, sus les esselles, à l'entour du croissant de la cuirasse, par dessous la ceignée du bras, a la main de la bride, et jusque a bouter son espée entre la main et la bride.....et partour le trouva si bien armé et pourvu, que nulle blessure n'en advint.*"³

That the "armet" at this early date was of that form which we know as an armet with a roundel, is proved by Pisano's medal of Felippo Maria Visconti, Baltasin's master, on which is a man at arms wearing this head-piece with the identical type of armour which we see in Ucello's pictures and which still exists in these suits at Bern and Vienna.

The Duke died the year after the combat just mentioned, so the medal is a contemporary document. In 1449 Jacques de Lalain, the mighty Flemish champion, was holding the lists at the Passage of Arms of the Fountain and Lady of Tears at Chalon-sur-Saône in Burgundy.

¹ Froissart.

² Christine de Pisan "Les faits du Roi Charles,"

³ Olivier de la Marche, *Memoires*, Ed. of 1616, p. 253.

Among his opponents was an Aragonese knight, also in the service of the Duke of Milan, Messire Jean de Bonniface who is mentioned as wearing an "armet d'Italie," and so perfect was his harness, that it was currently reported that "ledit Bonniface avoit trempé son harnois d'une eaue qui le tenoit si bon que fer ne pouvait prendre sus, et à la verité il courrait en un leger harnois de guerre, et n'étoit pas possible sans artifice ou aide, que le harnois eust pue soustenir les atteintes que fit dessus Messire Jacques."¹

If we compare these Missaglia suits with the representations of German, French, or English armour of the same date, we shall understand how great was the advance that had been made at Milan, and I have little doubt that it was the Missaglias themselves who brought the plate armour of that epoch to its very great perfection. They can be traced back to the end of the fourteenth century and their relatives and successors the Negrolis carried the great traditions of the family through the sixteenth century. The cradle of both these families appears to have been the little town of Ella near the Lake of Como, for although the name Missaglia is derived from another town a few miles from Ella, Antonio Missaglia in documents in the Archives at Milan, is termed "da Ella." It is true that there is German armour of the fifteenth century still in existence of marvellous beauty of workmanship and design, and some most admirable examples will be referred to further on, but they all date from a quarter of a century later than the two Missaglia suits I speak of.

Most English readers can obtain a perfect idea of a suit of armour such as these masters manufactured about the year 1450, by looking at Stothard's plates of the effigy of Richard Beauchamp, Earl of Warwick, on his tomb in St. Mary's Church, Warwick. We all know how admirable is the workmanship of that effigy and how faithfully it must represent the suit of armour from which it was copied.²

In a former paper, I stated that I had almost complete conviction and proof that the model from which it was copied

Olivier de la Marche, *Memoires*, Ed. of 1816, p. 303.

² Stothard's *Monumental Effigies*, plates 121-4, Ed. of 1876.

was of North Italian and most probably of Milanese manufacture.¹

I may now add my personal conviction that it came from the workshop of the Missaglias.

The Earl of Warwick died in 1439, and the contract for the tomb is dated 1453. Hewitt, feeling it difficult to assign so advanced a type of armour to the lifetime of the Earl in England, says, "the effigy appears to have been made about 1454, *the fashion of that period being adopted for the armour*."² The contract between the Earl's executors and John Essex, marbler, William Austin, citizen and founder of London, and Thomas Stevyns, coppersmith, expressly states that the effigy shall be made *according to patterns*. It is somewhat difficult to suppose that the Earl's executors, having all his armour at their disposal, should have sought and procured a new model; but if the armour be Italian, much of the difficulty disappears. Knowing what Milanese armour was in 1446 it is not difficult to suppose that even as early as 1438 it had attained that perfection shown in the effigy. It is also a curious coincidence that in his early life the Earl himself had been in Lombardy, thus having an opportunity of appreciating the great excellence of the armour of Milan. In those days Petrajolo da Missaglia, the earliest of that family with whom we are acquainted, was the Ducal armourer, for it was in 1408 that the Earl passed through Lombardy on his way to the Holy Land, and was challenged by Sir Pandulph Malacet, probably a Pandolfo Malatesta, to fight him at Verona. What is more probable than the supposition that once acquainted with the excellence of Milanese harness, the Earl should have continued to order armour from Milan to the end of his life? It can be shown that great noblemen in other countries were doing so at the same epoch.

On comparing this Beauchamp armour with that on other contemporary effigies, many differences become apparent, not only in details, but what is more important still, in the general style and character. The Beauchamp monument may almost be said to occupy a place to itself in any classification of English military effigies. The

¹ English Military Effigies, Archæol. Journal, vol. xliii, p. 327.

² Ancient Armour, vol. iii, p. 405.

details of a suit may be personal to him who made it, or for whose wear it was designed, but it is more especially by differences of general character and physiognomy that the works of separate schools or countries can be recognised. It would take too long to go into that matter in detail here, but I may state that between the Beauchamp effigy and the two existing suits of the same epoch by Tomaso da Missaglia there is the strongest resemblance, whilst a distinct difference of *style* exists between it and the thoroughly English effigy of Robert Lord Hungerford in Salisbury Cathedral, who died in 1459.¹

But more curious still, if we come to matters of detail, is the fact that the North Italian painter Mantegna has armed his beautiful St. George in the Academy, at Venice, with a suit of armour, which is almost line for line, and plate for plate, identical with the harness of the Earl of Warwick. That I think is a conclusive proof that the suit of armour so minutely copied by William Austin was of North Italian make. Mantegna was born in 1431, so it is just possible that he may have painted his picture about the same time when the London brass-founder was modelling a similar suit for the Beauchamp chapel.

I am not aware whether it be known exactly at what period of his life Mantegna painted his St. George, but it has the appearance of being in his earlier style. Even if painted later he may have had an old Missaglia suit in his studio to paint from. There are instances in which an artist of those times has drawn a suit by no means of the latest fashion, as when Durer, in 1498, made his beautiful study of a man-at-arms on horseback, now in the Albertina at Vienna, above which he has written, "this was the manner of arming in former days."

When he drew it the suit might be five and twenty or thirty years old; but, when fifteen years later, that study had matured itself into the grimly determined warrior in his wondrous Knight Death and the Devil, the suit of armour was almost becoming an antiquity.

Besides this most important suit of Italian armour, the Museum at Berne possesses a very complete example of that form of Maximilian harness, known as puffed armour, in which the steel is wrought to imitate the puffings so

¹ Stothard, plate 129.

fashionable in the civil dress of the epoch, some rare early swords and daggers, amongst which a dagger with roundels and its sheath, of the fifteenth century, in so wondrous a state of preservation that it seems as though it had only just been made, but which is notwithstanding of evident and absolute authenticity, and a remarkable series of early Swiss halbarts.

At Basle, but little remains in the Museum of the arsenal which the town once possessed; but there are two interesting cannon, a very beautiful dagger of Italian make, a few early and rare forms of helmet, and three fine examples of those Swiss daggers on the sheaths of which are wrought in spirited relief representations of the dance of death, William Tell and other subjects. It is, however, in the picture gallery at Basle that the most interesting documents for the history of armour are to be found. There is a series of three paintings representing Knights fully armed in the fashion of about 1460, which is most instructive. They represent three of the strong men of David, and are ascribed to the Dutch school of the fifteenth century. Unfortunately they have not been photographed, but I sketched one of them as a type.

From Basle we went to the pretty little town of Sigmaringen. I had long known that a fine collection of arms had been formed there by one of the Princes of Hohenzollern Sigmaringen. Demmin had sketched some of the pieces,¹ and I had seen at Nuremberg casts taken from portions of a German gothic suit there of rare beauty. Count Valencia also had met the present Prince at Lisbon and had heard from him something about the collection.

I must first mention the perfect courtesy with which we were received by the Custos of the Museum, the Hofrath Dr. von Lehner, and his colleague, the Hofrath Herr Gröbblers. The Schloss Museum contains besides armour a very remarkable collection of objects of mediæval art of every kind, and for the better study of these, there is a library well stocked with books on art and precious manuscripts, amongst which is a magnificent tournament book.

The learned keepers have published exhaustive

¹ Guide des Amateurs d'Armes.

catalogues of most of the collections in the Museum, but the section of arms is still to be completed. A fresh and pleasant surprise awaited us here. Portions of the Gothic suit I have mentioned are of the very finest epoch of German fifteenth century armour, and on obtaining permission to unmount it, we were able at once to name the master by whom they had been made. Both the breast and the backplates bore the mark of Lorenz Kolman, (*Helmschmied*), of Augsburg, who, in the last quarter of the fifteenth century, was to Germany what the Missaglias were to Italy, the great master of his time.

Mr. Boheim is at the present moment engaged on a study of the Augsburg armourers, similar to that which he has published on the Milanese masters, so I will only say that for nearly a century the Kolmans were the most distinguished armourers north of the Alps.

The Courts of Spain and Mantua vied to obtain their masterpieces. The Madrid armoury contains marvellous pieces made by Desiderius Kolman for Charles V. and Philip II., whilst Vienna is rich in the work of his predecessor, Lorenz. Desiderius even persuaded himself, that he had surpassed his great Milanese rival, James Philip Negroli, for on a shield now at Madrid he has represented himself as an infuriated bull overthrowing a Roman warrior who bears on his shield the name NEGROL.

As an artist, however, Negroli has never been surpassed. There is a grandeur of conception and execution in his works which raises them to the highest level as works of art. His shield with the head of Medusa, and his shield with a lion's head, both at Madrid, are worthy of the chisel of a Greek sculptor; and, above all, the refined artistic instinct of Negroli is shown by the fact that he never covers his pieces with embossing, as did so many of his rivals and successors. He knew the value of plain spaces for the purpose of preserving the sense of form in his pieces and of giving relief to his magnificent work.

There is a remarkable series of fine swords at Sigmaringen, which supplied us with several new names and marks, and amongst the very rare pieces, two German leather tournament helms with wirework over the opening for the face like huge fencing masks, must be mentioned. They date from about 1480.

Knowing that Augsburg had been the seat of a great armour industry, renowned especially through the eminence of the Kolmans, we made that town our next stage. When I had visited it fifteen years before, it contained in its Maximilian Museum an interesting collection of armour and arms belonging to a Herr Soeter. The town and he, however, could not agree on the price to be paid for it and it has unfortunately been dispersed, and the great centre of the armour making industry in Germany possesses nothing in the way of armour but a fine tournament helm hanging so high in the Cathedral that it can scarcely be seen, and which was used at the funeral obsequies celebrated there for Charles V., and a sword used on the same occasion and both attributed to him; and some good pieces of embossed armour in the possession of Prince Fugger-Babenhauseu, of which we unfortunately did not hear until after we had left the town, somewhat disappointed in our quest for arms. We knew, however, that at Munich we should find ample material for study.

The National Bavarian Museum at Munich contains sixty-eight rooms filled with various collections relating to past times. In so vast an assemblage there is naturally much of minor importance, but, although the collection of arms is by no means in the first rank amongst European collections, it contains some pieces of the highest rarity and interest. We are, for instance, all well acquainted with the horizontal knightly belt which appears on the hips of our monumental effigies of the fourteenth and first half of the fifteenth centuries; but, as far as I am aware, it is only at Munich that the greater portion of one of them can be seen and its construction studied.

The pieces of which it is composed are of gilt and engraved brass, and have staples at their backs, which pass through holes in a leather belt and are secured by thongs of leather. There is also a breastplate with its skirt of steel, the whole covered with red velvet and adorned with gilt brass nails, to which I should assign an early date in the fifteenth century, and which is quite unique.

There is a rich series of painted targets of the fifteenth century, and of helmets and weapons of the same epoch, but the case which fascinated us most was case 9, in

room 3, in which is a series of ten swords of the fifteenth century, of marvellous beauty and preservation.

Several of them have their original sheathes, one being admirably embossed in cuir bouilli. One sword has a wheel pommel of rock crystal, and such a crystal pommel may be seen represented in a picture by Dierick Bouts, painted in 1467, in the Old Pinakothek, in the same city. Another has a circular pommel, with admirable enamels inlaid on either side of it, such as is seen in so many of our brasses and effigies. It is impossible here to enter into a description of all the rare and fine pieces in the collection, nor would it be profitable to the reader that I should do so unless I had photographs to illustrate my remarks, and unfortunately they do not exist.

I was also somewhat amused and interested to see in the Museum a piece which had once been my own, a small backplate for a child, of Italian workmanship richly engraved and gilt, which I brought from Seville many years ago, but which was in so decayed a state that I exchanged it away. The Old Pinakothek, to which reference has been made, with its unrivalled collection of early German pictures, presents a mine of information to the student of arms, and many of the pictures have been admirably photographed.

It is impossible to speak of Munich in an archæological sense without referring to the bewildering wealth of treasures contained in the Reiche Kapelle and in the Schatzkammer.

A special excuse for so doing may be found in two remarkable swords contained in the latter. One is of the fifteenth century and attributed to the Bishop of Wurzburg. Its pommel is of red jasper, the grip and sheath are covered with violet velvet, over which is a silver-work of admirable design, whilst the cross guard of gilt silver ends in dog's heads, after the fashion of the quillons of an early fifteenth century sword of my own. The other is a rapier with a hilt of solid gold, exquisitely chased and enamelled by Reesin, of Nuremberg, in 1571. It is impossible to have an idea of the marvellous work executed by the goldsmiths of Augsburg and Nuremberg in the sixteenth century, without having seen the treasures massed in these two small rooms in the Alte Residenz. Our own regalia is a

paltry and vulgar show compared with either of them. There is a Royal Crown in the Schatzkammer which dates from before the Norman conquest of this island, and another equally admirable in beauty and preservation of the middle of the thirteenth century. To see these things in the reality is something for which neither the antiquary nor the artist can be ungrateful.

Besides all this, there is at Munich, in the possession of the Knightly Order of St. George, a sword, which is the most wonderful example of a highly decorated weapon of the fifteenth century in existence. We did not succeed in seeing it on this occasion, but I saw it at the Exhibition of German Art in Munich, in 1876. Not only does its decoration by far surpass that of any other sword of its epoch still extant, but it is also perfect in proportion and form. The hilt is of chased silver, and in the grip are niches with exquisitely wrought little figures. The decoration of vine-leaves, birds, &c., on the silver sheath is most beautiful. Of course it is a ceremonial sword, but it is the very beau ideal of a fifteenth century weapon. It is said to have been given to Duke Christoph of Bavaria by Beatrix, wife of King Matthias Corvinus, of Hungary, and its epoch is 1476 to 80.

Whilst at Munich it was our privilege to make the acquaintance of that veteran archæologist, Herr von Hefner Alteneck, and to visit his collection. He is the happy possessor of a German beaked visor bassinet, even finer than the one in the Londesborough collection, which was sold for so large a sum at Christie's a few years ago, and of the finest chapeau de fer or *eisenhut* of the fifteenth century in existence. Besides these, he owns many pieces of rare interest, not only in armour and arms, but in other branches of mediæval art.

And with Munich, this first portion of my notes must close. The vastness of the collection at Vienna precludes me from attempting to describe it at the present moment. The subject is too large for the time I have had at my disposal. The collection of arms and armour from Ambras and the Imperial Arsenal are now united in the new Museum of Mediæval and Renaissance Art in the Burg-Ring. They fill twelve large halls. During the fortnight I was at Vienna, although I worked assiduously every day,

I was only able to make a complete study of three out of these twelve rooms, and of the smaller but interesting collection in the Town Arsenal at the Rathaus. I worked carefully through the rooms containing the arms of the fifteenth and first quarter of the sixteenth centuries, and also in that devoted to tilting and tournament armour, which contains about a quarter of a hundred almost complete suits of jousting harness. The other rooms I merely walked through, under the guidance of the most amiable and learned Custos of the collection, Mr. Wendelin Boheim. When I find time to write the sequel to this paper, besides the results of this examination, I shall have to refer to the private collection of Mr. Franz Thill, and the Rathaus collection at Vienna, the series of arms in the National Germanic Museum at Nuremberg which has recently been enriched by the acquisition of Prince Sulkowsky's most important collection, and of the smaller museums of Linz and Salzburg.