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PUBLICITY | Dr. Michael L. Chikindas is a member of the American Society for Microbiology (USA) and of the Society for Applied Microbiology (UK). He is also a professional member of the Institute of Food Technologists and a member of the Phi Tau Sigma Honorary Society. Dr. Chikindas received his M.S. (cum laude) degree in Genetics from the Yerevan State University (Armenia) and his Ph.D. in Microbial Genetics from the Institute of Genetics and Selection of Industrial Microorganisms (Moscow , Russia). Prior to joining Rutgers, The State University of New Jersey he worked at the Groningen University (The Netherlands), Unilever (UK) and Janssen Pharmaceutica (Belgium). He is currently teaching and co-teaching several microbiology courses at the university. The results of his research are published in 30+ papers and several book chapters. Mr. Chikindas calls himself an amateur collector and a passionate scholar of history (specifically, of the edged weapons of the Caucasus' nations) and archeometallurgy – specifically of the patterned crucible steel. His dream as a scholar is to understand properties of this steel as they follow from its chemistry and physical structure.

February 2007, Book Review :

Let me start my humble review of the book entitled “Arms and Armor from Iran” by Mr. Manouchehr Moshtagh Khorasani with the only absolutely negative remark I have in relation to this book. In computer-related terminology, this is not a laptop, it is not even a desktop – this is something more of a database – both in its size and the amount of information it carries – the latter, of course is a positive notion. Seriously, this book is humongous! What I would love to see is it being divided into two, with all these marvelous illustrations assembled in volume 2, carefully preserved for only the friends who wash their hands before touching this book. Also, put on my “wish list”: a CD-ROM based on this book. I cannot imagine a single person interested in history, science and the art of arms who wouldn't want to have it.

Now, back to the book. I turn the page and see the excursus into the Iranian history and am surprised at first - why would I want to refresh my memory in history? And only when being almost half way through the book I suddenly realize that this excursus actually prepared me to the forthcoming chapters! Okay, spending my young years in Armenia, while studying towards my M.S. degree I was literally “around the corner” from Iran and read a lot about the country's rich heritage – but what about those whose standard is a McDonalds' ad claiming that Belgium is a city in Germany? I guess – no, I actually hope that people who grab this book with both their hands do have some basic knowledge of history, and at least some understanding of Persian to know that the word “shamshir” translates to English as “sword” and not “saber”. Needless to say that this short history of Iran so wisely and properly placed in the beginning of the book, helps explain how and why such advanced metallurgy developed in this part of the world and how it led to the development of superior arms so beautifully crafted.

I allow myself to respectfully skip the Bronze Age and jump right into the crucible steel period as it has intrigued me for as long as I can remember, even though, I am not a metallurgist by education. This is where I should probably explain myself. Born to an engineer-metallurgist and an architect, I spent some of my childhood in the Russian city of Ekaterinburg (Sverdlovsk) which is infused with the history and pride of Ural's smiths, metallurgists and swords makers such as Anosov, Bushuev, and many others. Even though I later got my M.S. (cum laude) and Ph.D. in genetics, archeometallurgy still remains my passion.

The very beginning of the chapter on crucible steel may not appeal to the conservative-thinking stubborn opponents who are overwhelmed with the theory saying that the name “Damascus steel” refers to a crucible watered steel that was uniquely produced in the city of Damascus by local smiths, and this steel's unique qualities and appeal were attributed to the unique, Vanadium and Molybdenum enriched ore from the mount of Damascus – too bad we cannot check it since the mount was apparently dug down to the ground by the smiths in their quest for this miraculous ore. As for me, I am more convinced by the theory presented in this book – specifically, that the city of Damascus was a huge market place for merchants whose roads crossed in this city. In this case, Damascus was obviously a “supermarket” for many customers from around the world in search of outstanding Persian blades and good blades from India.

The author continuous by quoting and analyzing Dr. Feuerbach's research – for which fact I think many of us should be particularly grateful to Mr. Moshtagh Khorasani since not all of us have access to the most interesting Ph.D. dissertation on crucible steel by Dr. Feuerbach (I believe it still can be ordered from the author on CD-ROM). I do not completely agree with the theory of watered crucible steel being necessarily of a dendritic structure as other structural formations are possible and may cause similar to dendritic “watering” and qualities. Also structural analysis of old blades is somewhat challenged by

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the elements' migration in the steel over the time.

Mr. Moshtagh Khorasani then brings to our attention a detailed description of the method of making watered crucible steel as it was recorded by Massalski from the words of the smiths in Bukhara – a truly interesting historical piece which leaves us wondering: if it is described in such detail, why was it never reproduced by followers? Of course, when taking a closer look it is obvious that with all this use of silver, different types of steel, precise construction and meticulous timing – it is more reminiscent of the work of an alchemist than a metallurgist – besides, few centuries before Massalski, smiths were not that technologically advanced and yet were able to produce superb quality watered crucible steel. The author then takes us to methods used in India. Although it is mentioned that the wootz-made blade must hold the edge well and be strong, hard yet flexible, it is well-documented that many wootz ingots (cakes) are extremely brittle – as well as many wootz-made blades. The Russian Army Lieutenant (Poruchik) Maksimov, the acknowledged authority on edged weapons who spent a lot of time at the Zlatoust Arms Factory, wrote an article on the blade selection (“How to determine qualities of the edged weapons, February 8, 1857) in which he strongly advised a buyer who is not experienced in watered (personally, I prefer the term “patterned”) crucible steel to buy a regular blade. He reports on being an eyewitness (1846) of the wootz-made blade made by a reputable smith (and extremely expensive) being broken into many pieces by just a gentle flat-hit against a wooden surface of a table! This particular saber was attributed (according to Maksimov) to the “famous Turkish master” and belonged to the Maksimov’s friend, son of Shamkhal Tarkovsky who served in His Imperial Majesty Personal Convoy. Now, can we really imagine anybody watching for his blade not to turn flat against the enemy’s blade during the battle?!

At last, the author brings us to the Iranian (Persian) watered crucible steel. With numerous sources cited, the author clearly shows the superiority of the Persian watered crucible steel and points us to the centers of its manufacturing.

Finally, we read about pattern-welded Damascus which I am personally not that fascinated with. The author then employs multiple sources to tell us about various and multiple inscriptions that appear on the swords from Persia/Iran.

I am turning the next page – and my breath is taken away by multiple examples of the patterns – although still in black-and-white (I am looking at what I call Volume 1, leaving the rich in colors Volume 2 for the later enjoyment), but regardless of that very impressive. We then see many examples of various blade marks and styles and shapes of shamshirs, some of which look like curved flamboyant swords (the author calls them “serrated”). The blades’ inscriptions linked to known smiths’ names – and the author refers to the recognized authorities when describing them.

What also grabbed my attention was the chapter dedicated to Persian straight swords which according to the author played a significant role in the history of Iranian arms (a fact I was largely overlooking prior to reading this book!).

Not less attention is given in this book to short-blade weapons such as the qame, khanjar, kard, pishqabz etc.

It is difficult to really stop when reviewing such a high quality book – and I did not cover even half of it! I must put myself into order here and give my overall impression of the book. In short, this book is an unprecedented effort by the author who was given access to many collections that were never before seen by the public. This book however is not just a catalog – it is a thorough analysis of numerous samples of arms and armors that are documented, described with high precision and presented in the highest quality photographs (I again raise my voice in a demand for this book on CD-ROM where one can zoom even closer to some pictures, forgetting about delicious dinner, family duties etc.). Being able to read Russian sources and some other languages, I can clearly see – when comparing Mr. Moshtagh Khorasani’s book with other sources (although there is not a single one of the same or even close caliber, both in the number of described items and in the depth and breadth of analysis) that the author’s hypotheses are not always following the commonly accepted ones. Therefore, I would not be surprised to see some give this book a “raised eyebrow” – especially from certain respected opponents limited in their access to historical items and to original language sources. I salute Mr. Moshtagh Khorasani for his effort and for bringing to our attention the history, art, and science of Iranian arms and armor.

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