THE SPREAD OF THE ATERIAN BLADE IN AFRICADR. FAYEZ ANWAR ABDELMOTELB MASSOUD*

Abstract

North Africa knew the *Aterian* blade - I think the word is better related to the *Ater* Well in Algeria - which dates back to the Middle *Palaeolithic*. This research paper aimes at shedding light on the spread of the blade in Africa.

Aterian blade characterized by the blade guilty instrument or trailing tongue which was used in hunting and possibly in other matters.

This blade was found in North Africa and spread to the West, South and East Africa. As a result of Middle *Palaeolithic's* man moving due to changing of the climate conditions. It seems that the climate conditions were affecting the *Palaeolithic's* man's moving to those directions to convey his new culture and knowledge to the people whom he moved to.

The Middle *Palaeolithic* differentiated in North Africa by the existence of a stone blade called the *Aterian* blade[1] - the subject of the study - which was found in more than one place in Africa, and the study will follow the spreading of this blade in Africa[2].

The study aimes to answer several questions: Why the Middle *Palaeolithic* men moved from place to place, and how they knew its routes, and whether it had a cultural impact from place to another and for the variety of the *Aterian* blade sites in whole Africa, the research is going to draw a map for it instead of drawing many maps for imagining the entire sites in a glance.

---

* Assistant Professor of Ancient History Faculty of Arts - Damanhour University, Egypt.

1 I have to give a few examples of the *Aterian* blade because of its numerous models to avoid the excess of the number of the research pages.

2 There are some studies that confirm the existence of the Aterian blade in Arabia, but the core of this paper is confined to Africa.

E. M. L. Scerri, 'A new stone tool assemblage revisited: reconsidering the 'Aterian' in Arabia', *Proceedings of the Seminar for Arabian Studies* 42 (2012), pp.357- 370.

The archaeological site where stone tools were found for the first time is located near the stream valley called *Wadi Algabna* alongside cemetery of the city. This site is far from *Bir el Ater* about three kilometers to the south, and about four kilometers from the north of the phosphate mine, and far was for away from the *Bir* of the Priestess about 700 meters[3].

Regarding the name of *Bir el Ater* and the *Aterian* civilization, Jamal Badri stated that there were two stories behind this name: *Bir Alatr*. The first of them that when the Muslims arrived to the area, the Berber Priestess gave the order, to her subjects, to put perfumes in the well to prevent the Muslims from drinking the water. It is historically known the Muslims defeated the Priestess and killed her after fierce engagements. The Muslims found scented water so they called the well (بئر العاطر)and by the time its name changed into (بئر العاتر). The second story is about the existence of a well in that area called "*Atra* or *Aatra*" which means "short" in the local tongue. So, the area is known as *Bir Al Ater*[4].

Hugot said: ((At the present stage of research it would appear therefore that in the Sahara the *Aterian* takes the place occupied elsewhere by the Mousterian, and shares several of its features such as the use of the *Levallois* technique, which appears not only in the style of retouching but also in the typology of the finished objects. However the *Aterian* differs from the Mousterian in two essential characteristics:

1- The presence of tanged objects that might serve as boring instruments, either retouched or in a rough form, scrapers, awls or even drills.

2- Noticeable statistical differences from the classical Mousterian industry were found. Apart from this, however, the idea of a Mousterian substratum remains strong, and although we have no *Aterian* skeletons it is quite usual to attribute this interesting industry to relation of Neanderthal man))[5].

---

[3] Gamal Badri., aḍwāʾ ʿly ālḥārat ālʿātryat (Lights on Aterian Civilization) . Algeria, 2010, p.27.

[4] Ibid., p.26.

[5] H. J. Hugot., 'The prehistory of the Sahara', General History of Africa, I, Methodology and African Prehistory, ed. Ki-Zerbo. J, Unesco, University of California Press, 1981, p.594.

It is believed that the *Aterian* man developed this new technology to facilitate his work after he noticed a shortage in his tools.This is shown clearly through its stalk which made carefully to help the handle to control that tool or to use it as an end to put other long parts like a stick for hunting[6].

Jamal Badri stated that the pioneer of calling the *Aterian* civilization by this name is the archaeologist Maurice Reygasse who discovered it in 1922 when he was doing his excavations in the valley of *Bir el Ater*, Algeria[7].

Arguments has revolved around the origin of the *Aterian* blade industry, it is an extension for the Mousterian industries which dates back to the Middle *Palaeolithic* or not[8]. Palo, David Bruce Milford and Wabeouf believed that the *Aterian* blade replaced the Mousterian one. It spread in Maghreb and in North and south Sahara.[9] Campus and Hugo also believed that the *Aterian* was born from the womb of *Mousterian*[10]. Hugo said: "We know that the *Aterian* is a North African industry that was diffused southwards and stopped roughly along the banks of the great lakes of the southern Sahara"[11]. The *Aterian* culture was widespread. We find it in Tunisia, Morocco, Algeria, *Saoura*, *Tidikelt*, and *Mauritania* where *Adrar* roughly marks its limits. We find it everywhere, in *Ahagger* at the *Admer Erg*, at *Tihodaïne*, at *Adrar Bous*, and also in the *Fezzan*, in *Zumri*, and at its most easterly point at *Kharga* in Egypt[12]. Those places are emphasized by Elana Garcia who stated that the *Aterian* blade is

---

[6] Gamal Badri,., op.cit.,, p.57.

[7] Muhammad B. Mahran., ālmghrb ālqdym, msr w ālshrq ālādny ālqdym (9) (The Ancient Maghreb and the Near East), vol. 9. Alexandria, 1990; p.11; Badri, Gamal., op.cit., p.24; Bard. K. A., The Encyclopedia of the Archaeology of Ancient Egypt, edited by Bard. K. A, London, 1999, p.207.

[8] M. Cremaschi and S. Di Lernia., 'Holocene Climatic Changes and Cultural Dynamics in the Libyan Sahara', *AAR* 16, No. 4 (Dec., 1999), p.213.

[9] L. Balout., 'The Prehistory of North Africa', General History of Africa, I, Methodology and African Prehistory, ed. Ki-Zerbo. J, Unesco, University of California Press, 1981, p.568; Brose. D. S and Wolpoff. M. H., Early Upper Paleolithic Man and Late Middle Paleolithic Tools, *American Anthropologist* Vol. 73, No. 5 (Oct., 1971), p.1164.

[10]Camps, G., Les Civilisation Préhistorique de L'afrique du Nord et du Sahara, Paris (1974), p.30.

[11] Hugot. H. J., op.cit., p.594.

[12]Ibid., pp.594, 595; C. Gabel., 'Radiometric Age Determinations for Early Hominids and for the Pre-agricultural Stone Age in Africa', *IJAHS* 5, No. 1 (1972), p. 10.

African domestic industry[13]. In addition, Francis Orr who believed that *Alatra* was found in all Arab Maghreb starting from Morocco (Dar Sultan sites *Tafforlat*) up to Algeria, the borders of the desert and the Nile Valley (the Oases of *Siwa* and *Kharga*)[14]

Palo believes that the dates produced in the *Maghreb* and the Sahara were between 37 000 and 30 000 BC and constituted a coherent and plausible sequence. In its beginnings, the *Aterian* is thus in the early Middle *Palaeolithic*. It is subsequently contemporary with the *Castelperronian* and the *Aurignacian*, that is, the early stage of the Upper *Palaeolithic* in France at least[15]. Elena Garcia indicated that the *Aterian* blade discovered 40 000 BC[16]. This date is welcomed by Francis Orr who confirmed this opinion by saying: "At about 40 000 BC the *Aterian* industry that we merely know its tools, which resemble the Mousterian with *Levallois* faces, with a high proportion of trimmed surfaces. On the other hand, a substantial part of the tools consisted of guilty slimmed down tools on both sides. The first appearance of the *Aterian* dates back to the era of *Würm* the Second, which is contemporary to the advanced Mousterian tools in Europe, but it lasted until about 25 000 BC"[17] . Hugo said: "It is very difficult to place the *Aterian* in a chronological sequence. It may have begun 35 000 BC[18], while Caton Thompson attributed *Aterian* time to the end of the Middle *Palaeolithic* Period and the beginning of the Upper *Palaeolithic*[19].

There are cases where *Aterian* implements have been found, in their original condition, in the neo-Tyrrhenian beaches which had just emerged as a result of the beginning of the last great regression (for example, at *Karouba*, near *Mostaganem*, western Algeria). The end of this *Würmian* interstadial (*Würm* 1/2) had occurred around 48 000 BC[20].

---

[13] E. A. A. Garcea., 'Crossing Deserts and Avoiding Seas: Aterian North African-European Relations', *Journal of Anthropological Research* 60, No. 1 (Spring, 2004), p.44.

[14] Orr, Francis, ḥḍārāt ālʿṣr ālḥjry ālqdym (The Palaeolithic Civilizations). Translated by Sultan Mehesen. 2nd ed. Damascus, 1995, p.147.

[15] Balout. L., op.cit., p.573.

16 Garcea. E. A. A., op.cit. p.44.

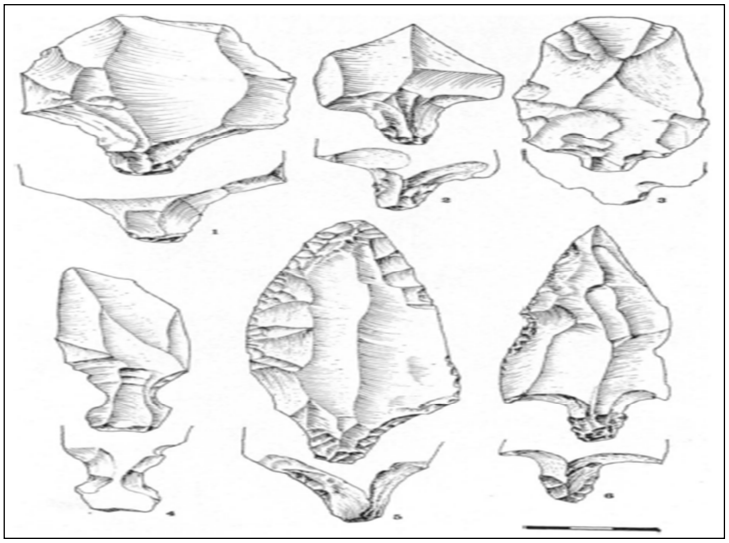
[17] Orr, Francis., op.cit., p.147.

[18] Hugot. H. J., op.cit., p.595.

[19] Caton-Thompson. G and Gardner. E. W., 'The Prehistoric Geography of Kharga Oasis', *GeoJourn* 80, No. 5 (Nov., 1932), p.384.

[20] Balout. L., op.cit., p.573.

Regarding Morocco, *Aterian* blades were found there in the Valley of *l'Oued Djouf El Djemel*[21] and also in the Valley of *l'Oued Goujgal*[22], as well as the *El Aliya* Cave on the region of Tangier,[23] in addition to Dar Al-Sultan which Barton and others dated it back to 108 000 BC[24]. Such date is considered to be the oldest one of *Aterian* blade.



Morel. J and Le Bretagne. A., op.cit., fig.3.

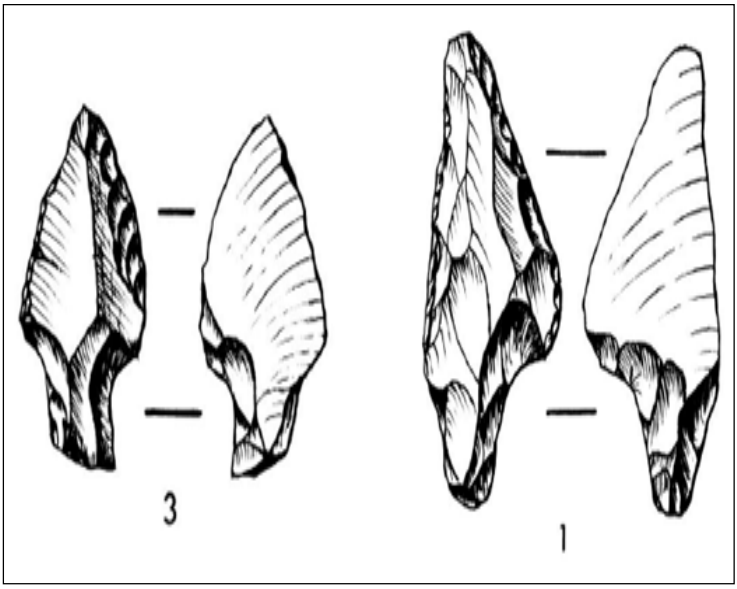
[21] J. Morel and A. Le Bretagn., 'L'industrie atérienne de l'Oued Djouf El Djemel. Comparaison avec l'industrie de l'Oued Djebbana. Le complexe atérien du Maghreb Oriental', *BSPF* 75, No. 11/12, Études et Travaux(1978), p.489.

[22] A. Rodrigue., 'La station de l'Oued Goujgal Un aspect de l'Atérien marocain', *BSPF* 84, No. 5 (1987), p.158.

[23] A. Bouzouggar and others, Study of the Aterian lithic assemblages from El Aliya cave in Tangier (Morocco), *L'Anthropologie* 106 (2002), fig.19, p.231.

[24] R. N. E. Barton., OSL dating of the Aterian levels at Dar es-Soltan I (Rabat, Morocco) and implications for the dispersal of modern Homo sapiens, *Quaternary Science Reviews* 28 (2009), p.1929.

As for Algeria, many models of *Aterian* blade were found there[25], among which were that made from flint and quartz in the *Tiaret* area[26]



De Bayle des Hermens R. Gisements préhistoriques inédits de la région de Tiaret (Algérie). In: ***Bulletin de la Société préhistorique française***. Études et travaux. 1964, tome 61, N. 2. Fig.1. 1, 3

And it was also found in the Valley of *Saoura*[27] as well as in the *Fronzy Tiaret* area[28].

For Tunisia, the *Aterian* blade was found also in its land, for example, at the site of *El Guettar*[29].

---

[25] R. Smith., 'L'âge de la pierre en Algérie', *RevArch* 35 (1932), p.140.

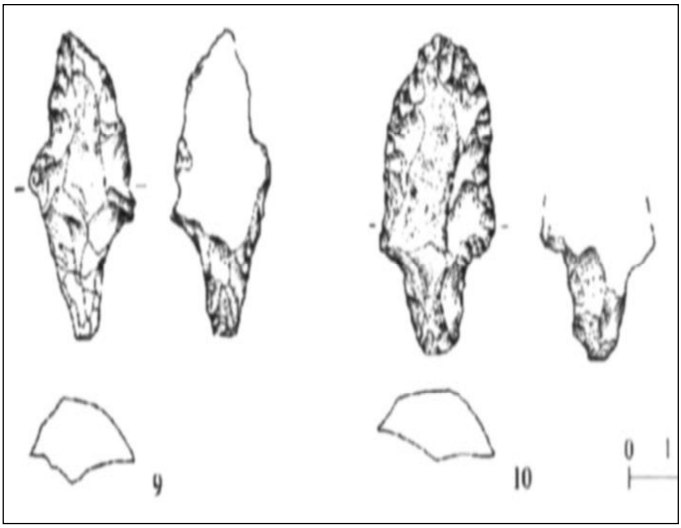
[26] De Bayle des Hermens R. Gisements préhistoriques inédits de la région de Tiaret (Algérie). In: *BSPF* 61, N. 2 (1964), pp. 452-463.

[27] N. Chavaillon., 'L'Atérien du Foum el Hartani au Sahara nord-occidental (République Algérienne)', ***BSPF*** 82, (1985), p.307.

[28] De Bayle des Hermens., 'Les industries préhistoriques de la Cité Fronzy Tiaret – Algérie', ***BSPF*** 61, (1964), figs.1, 2, 3, 5.

[29] J. J. Hublin., 'Recent Human Evolution in Northwestern Africa', ***Philosophical Transactions: Biological Sciences***, Vol. 337, No. 1280, The Origin of Modern Humans and the Impact of Chronometric Dating (Aug. 29, 1992), p.186.

The archaeological remains at **Libya** indicated, by radioactive carbon 14, that the *Aterian* civilization in Western mountain and in the northwest of Libya, dated back to 43 000 BC[30], while Barbara Barish and Elana Garcia confirmed that it dated back to the Middle *Palaeolithic*[31].



Barbara E. Barich and Elena A. A. Garcea., Ecological Patterns in the Upper Pleistocene and Holocene in the Jebel Gharbi, Northern Libya: fig.3. p.91.

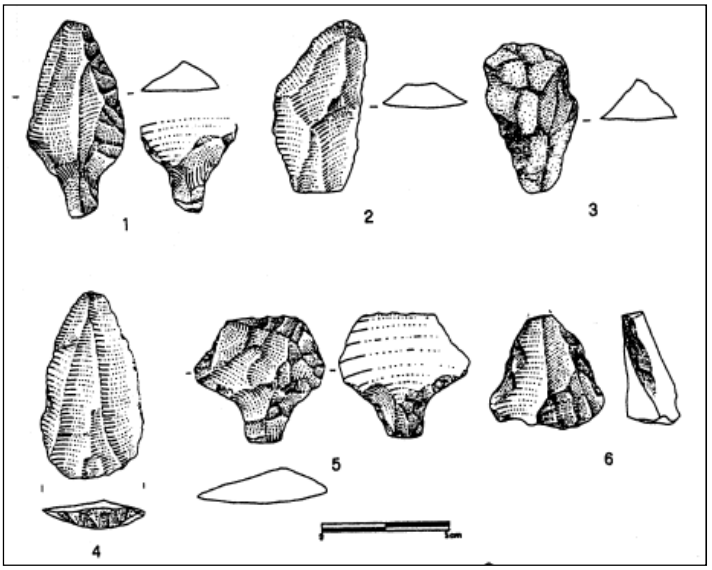
The archaeological remains of the *Aterian* civilization were found in the Valley of *Uan Afuda*, as well as in the Valley of *Uan Tabu* in *Tadrarat Acacus* Mountains in the south-west of Libya. It dated more than 48 000 BC[32]. Elana Garcia pointed out the importance of re-dating the Aterian civilization, that's because the old

[30] E. A. A. Garcea., op.cit., p.34; E. A. A. Garcea., 'L'adaptation Atérienne Entre Sources D'eau et Sécheresse', ***Africa: Rivista trimestrale di studi e documentazione dell'Istituto italiano per l'Africae l'Oriente***, Anno 64, No. 3/4 (Luglio-Dicembre 2009), p.414.

[31] B. E. Barich and E. A. A. Garcea., ''Ecological Patterns in the Upper Pleistocene and Holocene in the Jebel Gharbi, Northern Libya: Chronology, Climate and Human Occupation'', ***The African Archaeological Review, Vol. 25, No. 1/2, Modern Human Dispersals, Environments and Cultural Change in the Late Pleistocene of Northwest Africa (Mar. - Jun.,2008)***, p.90.

[32] E. A. A. Garcea., Crossing Deserts and Avoiding Seas., pp.35-36; M. Cremaschi and others., 'Some Insights on the Aterian in the Libyan Sahara: Chronology, Environment, and Archaeology', ***AAR*** 15, (1998), p.261.

dates return it back between 40 000 and 20 000 BC, while recent ones found in *Tadarat Acacus* region dated this civilization to more than 48 000 BC[33].

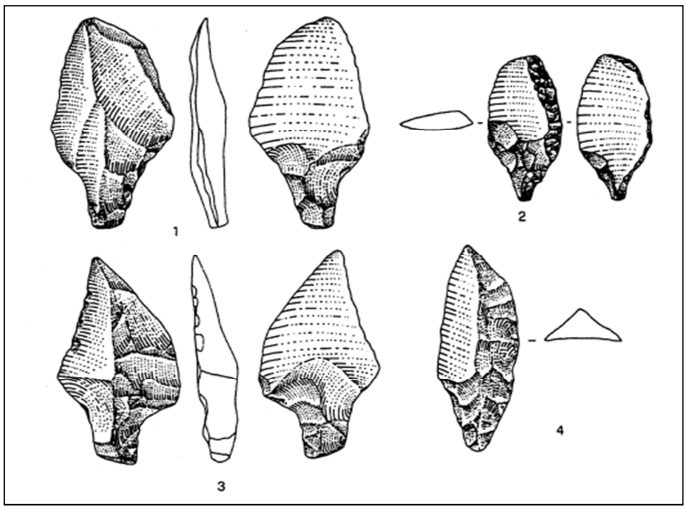


The Aterian blade in Acacus Mountains in southwest Libya

Cremaschi. M and others., ''Some Insights on the Aterian in the Libyan Sahara: Chronology, Environment, and Archaeology'', ***The African Archaeological Review***, Vol. 15, No. 4 (Dec., 1998), fig. 2, p.267.

Mauro Cremaschi and others found, through their archaeological survey in *Acacus* Mountain of southwestern Libya, about 14 sites dating back to *Aterian* civilization, for instance *Uan Afuda* and *Uan Tabu*[34]. While the *Aterian* blade was discovered in the regions of *Edeyen of Murzuq, Erg Uan Kasa* in southern Libya[35].

[33] E. A. A. Garcea., Crossing Deserts and Avoiding Seas, p.36.
[34] Cremaschi. M and others., op.cit., p.263.
[35] Ibid. p.278.



The Aterian blade in the region of Edeyen of Murzuq, Erg Uan Kasa in southern Libya Cremaschi. M and others., op.cit., fig. 8, p.278.

The *Haua Fteah* cave contained human remains which include two Neanderthal mandibles[36]. The *Aterian* blade was found as well in the *Haua Fteah* Cave which was, according to archaeologists, a link between West and East Africa[37]. The *Aterian* civilization there dated back to about 43 000 BC.

The human bone remains from this stage were similar to the human remains of Neanderthal Palestine man; this matter leads to the existence of mankind and cultural links between Palestine and Morocco [38].

Regarding to Niger : models of the *Aterian* blade were found there in the *Kawar* desert region[39].

It was discovered also in **Chad** particularly in the northern part of Chad Basin. The Archaeological excavations that carried out on later area (1976 – 1979) resulted in the presence of the *Aterian* blade

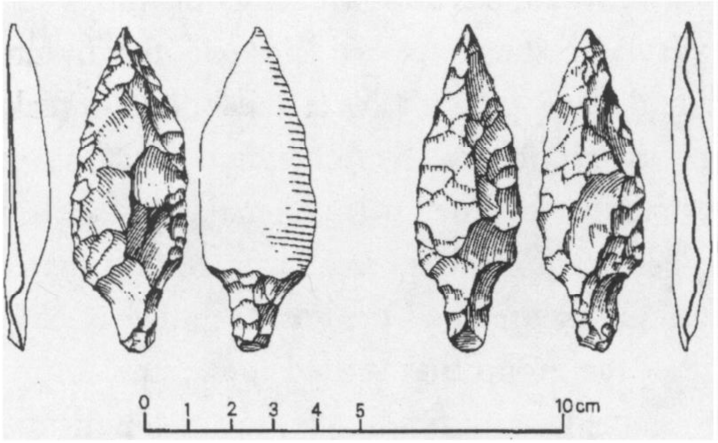
[36] A. Bilsborough., 'Late Pleistocene Human Remains from Cyrenaican Libya', ***Man***, (1971), p.694.

[37] E. A. A. Garcea., L'adaptation Atérienne Entre Sources D'eau et Sécheresse, p.414.

[38] Muhammad B. Mahran., op.cit., pp.14, 15.

[39] T. Tillet. 'The Présence de pendeloques en milieu atérien au Niger Oriental', ***BSPF*** (1978), p.273.

mainly in the regions of *Cegedim* and *Adar Boss*[40]. Those excavations gave a chronology for the *Aterian* period that started 31 000 BC[41]. It is believes that the arrival of the *Aterian* blade to Chad probably came from the region of *Hoggar* in southern Algeria and it was accessed through *Tibesti* to spread all over Chad Basin[42].



Tillet. T., The Palaeolithic and Its Environment in the Northern Part of the Chad Basin, ***The African Archaeological Review***, Vol. 3 (1985), Fig.6, p.171.

Regarding to Mali, the *Aterian* blade was found in its northern desert.[43].

In Egypt, Caton Thompson stated that she found 28 type of the *Aterian* blade at *Kharga* Oasis only[44]. She also found it in the *Dakhla* Oasis[45], Farafra, Bahariya and Siwa oases[46]. Besides, she reported that

[40] T. Tillet., 'The Palaeolithic and Its Environment in the Northern Part of the Chad Basin', ***AAR*** 3 (1985), p.163.

[41] Ibid, p.172.

[42] Ibid, p.175.

[43] N. Petit-Maire., ''Past Global Climatic Changes and the Tropical Arid/Semi-Arid Belt in the North of Africa'', ***Journal of Coastal Research***, , Special Issue No. 17. Holocene Cycles: Climate, Sea levels, and Sedimentation (1995), p.89.

[44] G. Caton-Thompson., 'Royal Anthropological Institute's Prehistoric Research Expedition to Kharga Oasis, Egypt. Preliminary Outline of the Season's Work', ***Man***, Vol. 31 (May, 1931), p. 82, fig.3, p.83.

[45] W. K Barnett and Others, 'News and Short Contributions', *JFA* 18, (1991), p.270. fig.2f.

[46] A. L. Hawkins, Getting Handle on Tangs: Defining the Dakhleh Unit of the Aterian Techno Complex-A Study in Surface Archaeology from Dakhleh Oasis,

the *Aterian* blade arrived to the Egyptian oases particularly the *Kharga* onr where they found sophisticated types of *Aterian* industry such as the tools, arrows and knife trimmed[47].

Aswan region and *Dongol* Oasis were other places where the *Aterian* blade was found[48]. Besides, it was there in *Wadi Halfa*[49]and *Nabta* Playa[50]. In addition, it was found in the areas of *Bir* Sahara and *Bir Tar-fawi* in southern Egypt[51] . Moreover, the *Aterian* blade was discovered in the Eastern Desert where these blades were found in *Sodmein* cave at the Red Sea Mountains northeast of Luxor and dated back to 38 000 BC[52].

Ahmed Fakhry pointed out that Stone and *Komngton* had found in the *Siwa* Oasis some tools which, according to them, had effects that came from the Maghreb region. *Aterian* civilization affected Egyptian sites that were found at *Naqada*, between *Dendera* and *Marashda* near *Naga Hammadi*, *Assiut*, and in the suburbs of Luxor[53].

Sudan region had a share of the existence of the *Aterian* blades in its land, for instance the sites of *El- Multaga*[54], *agendohli*[55],

---

Western Desert Egypt. Ph. Department of Anthropology, University of Toronto, 2001, p.88.

[47] Caton Thompson and E. W. Gardiner., Kharga Oasis in Prehistory, University of London, 1952, p.31.

[48] K. A., Bard, op.cit., pp. 11, 207.

[49] P. E. L. Smith, New Prehistoric Investigations at Kom Ombo (Upper Egypt), University of Montreal, 2009, p.39.

[50] R. Bauval and T. Brophy, The Prehistoric Origins of Ancient Egypt, Toronto, Canada, 2011, p.150.

[51] V. Haynes., 'The Prehistory of the Egyptian Sahara', *Science* 193, (1976), p.106.

[52] P. Van Peer, 'The Nile Corridor and the Out-of-Africa Model: An Examination of the Archaeological Record', *Current Anthropology*, Vol. 39, No. 2, Supplement: Special Issue: The Neanderthal Problem and the Evolution of Human Behavior (Jun., 1998), p.119.

[53] Muhammad B. Mahran., op.cit., p.13.

[54] Garcea. E. A. A., 'Paleolithic sites at El- Multaga, Sudan', *NyAk* 59 (2003), p.64.

[55] D. L. Wallsmith, A Middle Paleolithic Assemblage from Nubia and its Cultural Relationships, Thesis Submitted in Partial Fulfillment of the Requirement for the Degree of Master of Arts in the Department of Archaeology, Simon Fraser University, 1983, p.68.

and also *Khartoum*[56]. Those blades spread out on the middle of the desert in the site of *Aïn Chelbli*[57] .

Hawkins[58]and Mustafa Aasha confirm that in the areas of Morocco there were a lot of sites which date back to *Aterian* civilization, and that made Morocco the pioneer area of this industry .It was the main source of the distribution of the *Aterian* blade to rest of North Africa as well as the Sahara[59].

Jamal Badri concluded depending on that the concentration of *Aterian* blade sites from the west to the east is insufficient criterion to evaluate the impact of the Western effect on the eastern regions because there are lots of sites that have not been revealed yet or they have not been adequately studied[60].

Lakhdar, bin Bozaid wondered about the source of population migration and civilizing influence. So, he tried to answer some questions on the light of that the *Aterian* sites which located in the region were given all this civilization stages: how the linkage between Palestine Neanderthal men and Neanderthal in Maghreb happened? Was the *Aterian* blade been original in the region or an imported civilization? He said: "Then we have a demographic and cultural move from Morocco towards Egypt in the east and that was in very early time"[61] .

Perhaps the *Aterian* men moved from old Morocco to the east and south as a result of climatic conditions. They searched for any available resources and with no intention they distributed their culture which included the industries of *Aterian* blade[62]. Besides, there is no

---

[56] Caton-Thompson. G., ''The Aterian Industry: Its Place and Significance in the Paleolithic World'', *JRAI* 76, (1946), p.108.

[57] A. Méry, ''Armatures de pointes de flèches de la région de Reggan (Sahara Central)'', *BSPF* 68, (1971), p.631.

[58] A. L. Hawkins. A. L., op.cit., p.87.

[59] M. Aasha, nmādhj mn āltwāṣl ālḥḍāry byn shmāl afryqyā w ālṣḥrāʾ ālkbry khlāl ʿṣwr mā qbl āltārykh (Examples of Civilizational Interaction between North Africa and the Great Sahara during Pre- History). Mohamad V University: Institute of African Studies, Rebate, Morocco, n.d. in: http://www.tawalt.com/?p=23049.

[60] G. Badri, op.cit., p.34.

[61] Lakhdar, bin Bozaid., ālṭāsyly azjr fy qbl āltārkh ālmʿtqdāt w ālfn ālṣkhry (The Tassili N'Ajjer in the Pre-History of Religions and Rock Art). Algeria, n.d, p.51.

[62] A. L. Hawkins, op.cit., p.51.

doubt that the contacts between Egypt and Morocco occurred in very ancient times dating back to pre-history in the *Palaeolithic* stage[63].

Hayes believes that those smart people had a great influence in the future of the Egyptian civilization[64]. Consequently, Scerri draw a map distributing *Aterian* blade sites in Africa[65].

Places the Aterian blade in Africa

Scerri. E. M. L, ‘‘The Aterian and its place in the North African Middle Stone Age’’, ***Quaternary International*** xxx (2012), fig.1

Needless to say that the dates provided for dating the *Aterian* civilization still need extensive studies to provide new results . Moreover, the large number of *Aterian* civilizational sites in Africa makes it difficult to gain access to final results about their date.

The existence of most *Aterian* regions in the area of the old Morocco - especially Algeria and Morocco – give a possibility for an opinion that this region was the source of manufacturing the *Aterian* blade that spread to the south and east. This opinion was proved by

---

[63] Suleiman, bin Alsaady., ʿlāqāt msr bālmghrb ālqdym mndh fjr āltārykh ḥty ālqrn ālsāb qbl ālmylād (The Relations of Egypt with the Ancient Maghreb from the dawn of History up to the Ninth Century BC). PhD Dissertation in Mentoury University, Qusantina, Algeria, 2009, p.125.

[64] W. C. Hayes, Most Ancient Egypt, edited by Seele. K. C, University of Chicago Press, Chicago & London, 1965, p.66.

[65] E. M. L. Scerri, ‘The Aterian and its place in the North African Middle Stone Age’, *Quaternary International* 30 (2012), fig.1, p.2.

Barton who dates the site of *Deir Sultan* in Morocco by 108 000 BC[66], which is considered the oldest date to *Aterian* civilization.

Conclusion.

- The *Aterian* men distributed their blade in many parts of Africa due to continuity of their travels that caused by climate changes. Those men were looking for other places more suitable for living and that is proved by the existence of that blade in many places.
- That man who was accustomed to those routes was forced to look for permanent water sources when his regions were dry.
- The *Aterian* men associated with the Nile Valley populations and practiced agriculture.Yet, at the same time the *Aterians* were influenced by their original culture which was known later on as the Rock Art.

List of Transliterations

This English-Arabic transliteration system could be found in the following consonants:

Arabic	English	Arabic	English
ء	ʾ	ظ	ẓ
أ	a	ع	ʿ
ا	ā	غ	Gh
ب	b	ف	F
ت	t	ق	Q
ث	th	ك	K
ج	j	ل	L
ح	ḥ	م	M
خ	kh	ن	N
د	d	ه	H
ذ	dh	و	w/ū
ر	r	ي	Y
ز	z	ة	ah/at
س	s	ـَ	A
ش	sh	ـِ	I
ص	ṣ	ـًا	An
ض	ḍ	ـٍ	In
ط	ṭ		

[66] R. N. E. Barton, OSL dating of the Aterian levels at Dar es-Soltan I (Rabat, Morocco), p.1929.

Bibliography

The Arabic References:

− Aasha, Mustafa., nmādhj mn āltwāṣl ālḥḍāry byn shmāl afryqyā w ālṣḥrāʾ ālkbry khlāl ʿṣwr mā qbl āltārykh (Examples of Civilizational Interaction between North Africa and the Great Sahara during Pre- History). Mohamad V University: Institute of African Studies, Rebate, Morocco, n.d. in: http://www.tawalt.com/?p=23049.

− Badri, Gamal., aḍwāʾ ʿly ālḥārat ālʿātryat (Lights on Aterian Civilization) . Algeria, 2010.

− Lakhdar, bin Bozaid., ālṭāsyly azjr fy qbl āltārkh ālmʿtqdāt w ālfn ālṣkhry (The Tassili N'Ajjer in the Pre-History of Religions and Rock Art). Algeria, n.d.

− Muhammad B. Mahran., ālmghrb ālqdym, msr w ālshrq ālādny ālqdym (9) (The Ancient Maghreb and the Near East), vol. 9. Alexandria, 1990.

− Orr, Francis., ḥḍārāt ālʿṣr ālḥjry ālqdym (The Palaeolithic Civilizations). Translated by Sultan Mehesen. 2nd ed. Damascus, 1995.

− Suḷeiman, bin Alsaady., ʿlāqāt msr bālmghrb ālqdym mndh fjr āltārykh ḥty ālqrn ālsāb̌ qbl ālmylād (The Relations of Egypt with the Ancient Maghreb from the dawn of History up to the Ninth Century BC). PhD Dissertation in Mentoury University, Qusantina, Algeria, 2009.

The References in European languages

- Balout. L., The Prehistory of North Africa, General History of Africa, I, Methodology and African Prehistory, ed. Ki-Zerbo. J, Unesco, University of California Press, 1981.

- Bard. K. A., The Encyclopedia of the Archaeology of Ancient Egypt, edited by Bard. K. A, London, 1999.

- Barich. B. E and Garcea. E. A. A., Ecological Patterns in the Upper Pleistocene and Holocene in the Jebel Gharbi, Northern Libya: Chronology, Climate and Human Occupation, ***The African Archaeological Review, Vol. 25, No. 1/2, Modern Human Dispersals, Environments and Cultural Change in the Late Pleistocene of Northwest Africa (Mar. - Jun.,2008)***, pp. 87-97.

- Barnett. W. K and Others, News and Short Contributions, ***Journal of Field Archaeology***, Vol 18, No. 2 (Summer 1991), pp.253- 273.

- Barton. R.N.E, Bouzouggar. A, Collcutt. S.N, Schwenninger. J.L and Balzan. L. C., OSL dating of the Aterian levels at Dar es-Soltan I (Rabat, Morocco) and implications for the dispersal of modern Homo sapiens, ***Quaternary Science Reviews*** 28 (2009) 1914–1931.

- Bauval. R and Brophy. T., The Prehistoric Origins of Ancient Egypt, Toronto, Canada, 2011.

- Bilsborough. A., Late Pleistocene Human Remains from Cyrenaican Libya, ***Man***, New Series, Vol. 6, No. 4 (Dec., 1971), pp. 694-696.

- Bouzouggar. A and others, Study of the Aterian lithic assemblages from El Aliya cave in Tangier (Morocco), ***L'Anthropologie*** 106 (2002) 207−248.

- Brose. D. S and Wolpoff. M. H., Early Upper Palaeolithic Man and Late Middle Palaeolithic Tools, ***American Anthropologist***, New Series, Vol. 73, No. 5 (Oct., 1971), pp. 1156-1194.

- Camps, G., Les Civilisation Préhistorique de L'afrique du Nord et du Sahara, Paris (1974).
- Caton-Thompson. G., Royal Anthropological Institute's Prehistoric Research Expedition to Kharga Oasis, Egypt. Preliminary Outline of the Season's Work, ***Man***, Vol. 31 (May, 1931), pp. 77-84.
- Caton-Thompson. G., The Aterian Industry: Its Place and Significance in the Palaeolithic World, ***The Journal of the Royal Anthropological Institute of Great Britain and Ireland***, Vol.76, No. 2 (1946), pp. 87-130.
- Caton-Thompson. G and Gardner. E. W., The Prehistoric Geography of Kharga Oasis, ***The Geographical Journal***, Vol. 80, No. 5 (Nov., 1932), pp. 369-406.
- Caton Thompson and Gardiner. E. W., Kharga Oasis in Prehistory, University of London, 1952.
- Chavaillon. N., L'Atérien du Foum el Hartani au Sahara nord-occidental (République Algérienne), ***Bulletin de la Société préhistorique française***, T. 82, No. 10/12, Études et Travaux (1985), pp. 307-337.
- Cremaschi. M and others., Some Insights on the Aterian in the Libyan Sahara: Chronology, Environment, and Archaeology, ***The African Archaeological Review***, Vol. 15, No. 4 (Dec., 1998), pp. 261-286.
- Cremaschi. M and Di Lernia. S., Holocene Climatic Changes and Cultural Dynamics in the Libyan Sahara, ***The African Archaeological Review***, Vol. 16, No. 4 (Dec., 1999), pp. 211-238
- De Bayle des Hermens., Les industries préhistoriques de la Cité Fronzy Tiaret – Algérie, ***Bulletin de la Société préhistorique française***. Études et travaux, T. 61, Fasc. 1 (1964),pp. 65-83.
- De Bayle des Hermens R. Gisements préhistoriques inédits de la région de Tiaret (Algérie). In: ***Bulletin de la Société préhistorique française***. Études et travaux. 1964, tome 61, N. 2. pp. 452-463.
- Gabel. C., Radiometric Age Determinations for Early Hominids and for the Preagricultural Stone Age in Africa, ***The International Journal of African Historical Studies***, Vol. 5, No. 1 (1972), pp. 1-21.
- Garcea. E. A. A., Palaeolithic sites at El- Multaga, Sudan, ***Nyame Akuma***, No. 59 June 2003, pp.62- 65.
- Garcea. E. A. A., Crossing Deserts and Avoiding Seas: Aterian North African-European Relations, ***Journal of Anthropological Research***, Vol. 60, No. 1 (Spring, 2004), pp. 27-53.
- Garcea. E. A. A., L'adaptation Atérienne Entre Sources D'eau et Sécheresse, ***Africa: Rivista trimestrale di studi e documentazione dell'Istituto italiano per l'Africae l'Oriente***, Anno 64, No. 3/4 (Luglio-Dicembre 2009), pp. 412-421.
- Hawkins. A. L., Getting Handle on Tangs: Defining the Dakhleh Unit of the Aterian Techno Complex-A Study in Surface Archaeology from Dakhleh Oasis, Western Desert Egypt. Ph. Department of Anthropology, University of Toronto, 2001.
- Hayes. W. C., Most Ancient Egypt, edited by Seele. K. C, University of Chicago Press, Chicago & London, 1965.
- Haynes. V., Gautier. A and Kobusiewicz. M., The Prehistory of the Egyptian Sahara, ***Science***, New Series, Vol. 193, No. 4248 (Jul. 9, 1976), pp. 103-114.
- Hublin. J. J., Recent Human Evolution in Northwestern Africa, ***Philosophical Transactions: Biological Sciences***, Vol. 337, No. 1280, The Origin of Modern Humans and the Impact of Chronometric Dating (Aug. 29, 1992), pp. 185-191.

- Hugot. H. J., "The prehistory of the Sahara", General History of Africa, I, Methodology and African Prehistory, ed. Ki-Zerbo. J, Unesco, University of California Press, 1981.
- Méry. A., Armatures de pointes de flèches de la région de Reggan (Sahara Central), ***Bulletin de la Société préhistorique française***. Études et travaux, T. 68, Fasc. 2 (1971),pp. 629-639.
- Morel. J and Le Bretagne. A., L'industrie atérienne de l'Oued Djouf El Djemel. Comparaison avec l'industrie de l'Oued Djebbana. Le complexe atérien du Maghreb Oriental, ***Bulletin de la Société préhistorique française***, T. 75, No. 11/12, Études et Travaux(1978), pp. 487-500.
- Petit-Maire. N., Past Global Climatic Changes and the Tropical Arid/Semi-Arid Belt in the North of Africa, ***Journal of Coastal Research***, , Special Issue No. 17. Holocene Cycles: Climate, Sea levels, and Sedimentation (1995), pp. 87-92.
- Rodrigue. A., La station de l'Oued Goujgal Un aspect de l'Atérien Marocain, ***Bulletin de la Société préhistorique française***, T. 84, No. 5 (1987), pp. 155-159.
- Scerri. E. M. L., "A new stone tool assemblage revisited: reconsidering the 'Aterian'' in Arabia, ***Proceedings of the Seminar for Arabian Studies*** 42 (2012), pp.357- 370.
- ……..," The Aterian and its place in the North African Middle Stone Age", ***Quaternary International***, xxx (2012) 1- 20
- Smith. P. E. L., New Prehistoric Investigations at Kom Ombo (Upper Egypt), University of Montreal, 2009.
- Smith. R., L'âge de la pierre en Algérie, ***Revue Archéologique***, Cinquième Série, T. 35 (1932), pp.139- 140.
- Tillet. T., Présence de pendeloques en milieu atérien au Niger Oriental, ***Bulletin de la Société préhistorique française***, T. 75, No. 9 (1978), pp. 273-275.
- Tillet. T., The Palaeolithic and Its Environment in the Northern Part of the Chad Basin, ***The African Archaeological Review***, Vol. 3 (1985), pp. 163-177.
- Van Peer. P., The Nile Corridor and the Out-of-Africa Model: An Examination of the Archaeological Record, ***Current Anthropology***, Vol. 39, No. 2, Supplement: Special Issue: The Neanderthal Problem and the Evolution of Human Behavior (Jun., 1998), pp. 115-140.

Wallsmith. D. L., A Middle Palaeolithic Assemblage from Nubia and its Cultural Relationships, Thesis Submitted in Partial Fulfillment of the Requirement for the Degree of Master of Arts in the Department of Archaeology, Simon Fraser University, 198.