We Hear From A Professor Of Experimental Archaeology In Northern Italy And Cross Rich Grasslands With Early Humans, Deep In The Arabian Peninsula Where Now Only Desert Exists.

Thank you for subscribing to our newsletter, “Arrowhead Collecting On The Web”.

I hope you enjoyed the recent edition, Volume III, Number 11, of our digital e-magazine, the November, 2011 issue.

“Arrowhead Collecting On The Web” provides an on-going series of articles and graphic presentations of information related to the many different aspects of discovering and learning about artifacts of previous cultures found today.

Now with over 1,675 monthly subscribers across North America, plus South America, Africa, Europe, Australia, New Zealand and Asia, we are now all the way through our third calendar year, Volume III. This December 2011 edition addresses the following topics, among others:

- Recent field work in the Arabian Peninsula examines the first discovery of a recognized African Middle Stone Age tool technology in use by anatomically modern human beings in inland Arabia, and defines their technology as common with stone tool manufacturing technologies from the Nile River Valley and the Horn of Africa over 100,000 years ago. (See pages 3-6.)

- Check out Professor Vittorio Brizzi’s in-depth study of the “Tabrina 1” point, a concave-based, triangular, highly serrated arrowhead discovered in a northern Italian village from the Early Bronze Age. (See pages 10-13.)

- From the Texas “Hill Country”, an ancient supply of initially worked chert and flint, prepared and set aside for some never-completed future use. (See page 8.)

- “...his uncle was turkey hunting and found it on the ground” ... an astonishing Ceremonial Blade of impressive scale and exceptional preservation. (See page 9.)

Read, learn, find, enjoy. And pass it all along to your family and friends.
Our editorial objective is to help our readers become long-term, even serious collectors of arrowheads, over the years to come. Here are some of the things we hope to accomplish for you in this process:

- Help you find new points and understand what it is that you are finding;
- Help you to recognize the different kinds and styles of collectable arrowheads and other implements;
- Help you to understand about the life ways of the cultures represented by the stone tools which remain;
- Help you to discover ways to find good and desirable arrowheads from other sources, such as eBay and special subject web sites;
- Help you understand about modern flint knapping, how new points and implements are made, how to recognize them, and how to appreciate those items for the skill and the craftsmanship of the work which they exhibit;
- Help you to understand that some people still try to sell unsuspecting collectors items which may or may not be what the items are described to be, that you should be careful when you think about buying points for your collection;
- Help you to learn about authentication services and their value to you as a collector.

As we do these things, we will maintain your readership and interest in our newsletter for many years to come.

Thank you for your participation, and your interest in "Arrowhead Collecting On The Web".

Sincerely,

F. Scott Crawford
Carrollton, Texas

About The Author
From the time when I was 13 or 14 in the forested foothills of the western Oregon Willamette Valley and found my first arrowhead, an obsidian “bird point,” in a field my dad had plowed for an experimental crop of maize, I have always wondered about the people who used these stone tools, how they lived, and what became of them.

Some friends had collected Indian artifacts in the desert areas of eastern Oregon and my brothers and I all enjoyed looking at their display of those arrowheads. So, to find some points of our own, on the family land, was particularly exciting. After that, whenever we were working in the bean fields, or tending livestock, or moving irrigation pipes, or just wandering across the back 40, we always would keep an eye out for bits and pieces of worked stone, tools and points, to add to our growing collection.

Today, I still keep an eye out for remnants of past cultures. And as the world has changed so much, I can now do much, but not all, of that wandering and learning on the internet, on the world wide web. That's how I came to be collecting arrowheads on the web, and why I began to put together this newsletter, for others across the land who also are interested in "Arrowhead Collecting On The Web".

FSC

p.s. There is still a time and a place for criss crossing a plowed field, or walking along the banks of a stream, just to see what you might find. Knowing where to look and how, is part of what we plan to explore in the pages of “Arrowhead Collecting On The Web.”

Read, learn, find, enjoy.

p.p.s. You are invited to visit my flint knapping web site:
www.StoneBreaker-FSC.net
The Nubian Complex of Dhofar, Oman: An African Middle Stone Age Industry in Southern Arabia


Abstract: Despite the numerous studies proposing early human population expansions from Africa into Arabia during the Late Pleistocene, no archaeological sites have yet been discovered in Arabia that resemble a specific African industry, which would indicate demographic exchange across the Red Sea. Here we report the discovery of a buried site and more than 100 new surface scatterers in the Dhofar region of Oman belonging to a regionally-specific African lithic industry - the late Nubian complex - known previously only from the northeast and Horn of Africa during Marine Isotope Stage 5, ~128,000 to 74,000 years ago. Two optically stimulated luminescence age estimates from the open-air site of Aybut Al Auwal in Oman place the Arabian Nubian complex at ~106,000 years ago, providing archaeological evidence for the presence of a distinct northeast African Middle Stone Age technocomplex in southern Arabia sometime in the first half of Marine Isotope Stage 5.

The Nubian Complex is a regionally distinct Middle Stone Age (MSA)

(...continues on p. 4)

Schematics of preferential Levallois core preparation strategies referenced in the study and analysis of stone tool cores from the Middle Stone Age in northern Africa. The Centripetal works with a disc shaped core, removing material from all around to set up the blade removal. The Unidirectional-Convergent format preparation takes place in just one direction, overlapping removals to prepare a pointed blade removal at a middle platform. The major difference in the Nubian Type 1 core preparation is that the removals used to prepare the sharp end of the planned point are from opposite edges of the core surface. The prepared platform is struck to knock off the Levallois point, creating a sharp, triangular blade with a strong base which can be bound to a shaft or wrapped with leather to be held in the hand. The Nubian Type 2 preparation is performed from the sides of the core to set up the percussion removal of a triangular blade.

Map shows Dhofar ecological zones and place names mentioned in the article. Most of the sites mentioned are located on the Nejd Plateau, some distance inland from the Arabian sea coast. The common “Out of Africa” migration theories often postulate movement of people along the Arabian coast, but until now, they have not seriously considered the movement of early modern humans across the Arabian Peninsula further inland. For many thousands of years during the ages from 128,000 to 74,000 years ago, there were significant periods of plentiful rain with rich grasslands and much game to hunt in the wide open spaces of Arabia...where today there are only vast sand and gravel deserts.

106,000 Years Ago, “Anatomically Modern” People Migrated Out Of Africa Across The Arabian Peninsula, When It Was A Rich Grassland, With Large Game & Plentiful Water; Their Unique Style Of Tools -- Found Only In Africa -- Until Now.
technocomplex first reported from the northern Sudan in the late 1960s. Archaeological sites belonging to the Nubian Complex have since been found throughout the middle and lower Nile Valley, desert oases of the eastern Sahara, and the Red Sea hills. Numerical ages from Nubian Complex sites are constrained within Marine Isotope Stage 5 (MIS 5), although temporal differences have been observed among assemblages; as such, it is divided into two phases, an early and a late Nubian Complex.

Left: Nubian Levallois Type 1 core from Aybut Al Awaal. The core in panel A shows dark patination/carnish and was surface collected from the terrace surface. Right: Nubian Type 1 core from Aybut Al Awaal. The core shown in panel B is partially desilicated and was excavated from stratigraphic Unit 3. This is the same core shown “in situ” in the photograph above.

Nubian Complex industries are distinguished by a characteristic and highly standardized method of preferential Levallois reduction, “mass produced from an elaborate archetype”. Nubian core technology is considered a regional variant of the preferential Levallois method for producing points, recognized by its triangular/sub-triangular shaped cores and a specific opposed platform preparation of the primary working surface, from which Levallois blanks are struck.

(...continues on p. 5)
There are two types of Nubian Levallois core preparation, referred to as Nubian Type 1 and Type 2.

The primary working surface of a Nubian Type 1 core is formed by two distal-divergent removals creating a steeply angled median distal ridge, in order to set up the core for the preferential removal of an elongated and pointed flake or blade.

Although the end product is the same, the steep median distal ridge on a Nubian Type 2 core is achieved through bilateral shaping of the primary working surface.

In every case, Nubian cores have highly characteristic preparation at the distal end of the core to create a steeply peaked triangular cross section, which results in the signature Nubian Levallois point.

Nubian Levallois core preparation strategy is technologically dissimilar to the Levallois point-producing industries found at nearby Levantine Middle Paleolithic (MP) sites, which are broadly characterized by preferential unidirectional and centripetal reduction systems.

(continued on p. 6)

Here are several of the “Levallois points” from different Dhofar Nubian Complex sites. These are all unifacial points, with the primary manufacturing being performed by stone hammer percussion on shaped flint cores. There is little retouching, and no bifacial work at all on these hunting weapon points. Sites: Aybut Al Auwal (c,f,k), Aybut Ath Thani (a,b), Mudayy As Sodh (i), Jebel Sanoora (j), TH.173 (d), TH.236 (m), TH.238 (g,h), and TH.258 (h).
The early Nubian Complex is distinguished by a higher frequency of Nubian Type 2 cores in conjunction with bifacial foliates and handaxes. The late Nubian Complex, on the other hand, shows a predominance of Nubian Type 1 cores and a complete absence of bifacial reduction. Late Nubian Complex assemblages have been found in Egypt...the northernmost extent of Nubian Type 1 cores is demarcated by assemblages found in the vicinity of Jebel Urayf and Naqah, in central-east Sinai. As for its southern distribution, Nubian Levallois technology has been reported in the Horn of Africa...Ethiopia...northern Somalia...which exhibit Nubian Type 1 Levallois preparation.

The first hint of the Nubian Complex extending into southern Arabia was documented by Inizan and Ortlieb, who illustrate three cores from Wadi Muqqah in western Hadramaut, Yemen, with Nubian Type 1 and Type 2 technological features. More recently, Crassard presents a handful of Levallois point cores exhibiting Nubian Type 1 preparation from Wadi Wa’shah, central Hadramaut, Yemen.

In light of these tantalizing, yet inconclusive findings, the Dhofar Archaeological Project (DAP) was initiated in 2010 to explore the Late Pleistocene archaeological record of the Dhofar region in southwestern Oman. During the 2010 fieldwork campaign, a surface scatter with Nubian Type 1 and Type 2 Levallois cores was discovered in Wadi Aybut, central Dhofar. Subsequent research by DAP has focused on geoarchaeological investigation of the Aybut drainage system and surrounding landscapes, optically stimulated luminescence (OSL) dating of cemented fluvial sediments at Aybut Al Auwal, which contained a handful of diagnostic Nubian Levallois artifacts, systematic survey to articulate the distribution of Nubian Levallois core technology throughout Dhofar, and techno-typological analysis of Nubian Levallois reduction strategies in Dhofar to assess the relationship of these assemblages with the African Nubian complex.

...To date, DAP has mapped 110 occurrences with Nubian Levallois technology across the Nejd Plateau, ranging from occasional isolated cores to high-density scatter. Lithic assemblages were collected from four of these sites...and include: Aybut Al Auwal, Aybut Ath Thani, Muddyay As Sodh, and Jebel Sanoora.

...From the distribution of findspots in Dhofar exhibiting Nubian Levallois technology, it appears that occurrences are confined exclusively to the Nejd plateau, where they are most often found near stream channels and raw material outcrops. Survey transects did not produce evidence for any kind of MSA/MP occupation along the coastal plain or the fringes of the Jiddat Al Harassis gravel plain bordering the eastern Nejd.

...In every assemblage encountered, Nubian Type 1 cores were by far the most prevalent, and Nubian Levallois technology was never found in conjunction with a bifacial component. Aybut Al Auwal is an open-air site that contains artifacts on the surface and buried within fluvial sediments in Wadi Aybut, west-central Nejd. The site was found on the second terrace, ~20 m above a relict tributary channel feeding the main wadi system...Lithic artifacts were found cemented within and eroding from accretional sediments filling the channel. Both natural and archaeological surface debris are coated in a black desert varnish, while the buried material is bleached white and partially desilificated from chemical dissolution (photos page 4). Despite being somewhat desilificated, the buried artifacts are in good condition and diagnostic of Nubian Type 1 technology.

As the OSL measurements and sedimentology indicate that all of Unit 3 formed during one accretional episode, we conclude that the buried Nubian artifacts were deposited ~106 ka (thousand years ago), when the channel was active. Albeit slightly earlier than its African counterpart, the age of the Aybut Al Auwal assemblage is more or less consistent with the numerical ages obtained from the Nile Valley, Red Sea hills and eastern Sahara.
December 20, 2011
Hi Scott,
Please let me know what you might know about this point. (Found near Laredo, Texas, this past weekend.)
Thanks,
Ron Weatherford

December 21, 2011
Ron,
I have seen some south Texas points attached to wooden shafts or bone handles by being inserted into a slot and bound with asphalt (petroleum) or with leather straps. Usually the area right at the base is somewhat less sharp so that it doesn’t cut the bindings or the hand of the user. These bindings worked without notches. Some examples have been found in dry caves or rock shelters where the shaft or handle had not disintegrated. This style could have been either a lance point or a knife. The ones with beveled edges were usually knives, and were resharpened without being removed from the handle.
Scott

December 20, 2011
Hi Ron,
I think you’ve got a nice “Abasolo” point there. Overstreet describes them as a medium to large size, broad, lancolate point with a rounded base. The base is usually thinned, and often one edge on each side is resharpened by beveling. They date to the early to middle Archaic period, from 7000 to 5000 b.p. (before present). These were used in the southern Midwest region and in Mexico.

Thanks for sending the photograph of this recent find. Good luck and happy holidays to you this season!
Scott

December 21, 2011
Scott,
Thanks for your help.
Could you show me how these points were used? How were they attached to shaft? Your description of shape of point is exact.
Thanks very much,
Ron Weatherford

Publisher’s e-mail address: fscottcrawford@arrowheadcollectingontheweb.com
Novemer 30, 2011
Scott,

I am sending a few pictures of what I think are “blanks” of flint found in the Hill Country about 15 years ago by a hiker on a ranch near Boerne, TX. That is all I know about them. Can you verify what they are and about how old are they? Thanks for your newsletter and all of your help.

Kenneth Daugherty
November 30, 2011

Hi Kenneth,

Thanks for the photos. I agree with your assessment that these are what are called “trade blanks” in Texas.

I once or twice found quarry sites near Belton and Ft. Hood which had numerous samples very similar to these. They were chunks of the local chert or flint which were thinned down to a more manageable size for transporting from the quarry to a village or to a workshop area where further knapping would be performed to get to a preform or even finished tool.

The age? The same process occurred for many thousands of years in areas with as much natural flint and chert supply as Texas has. Most I have seen seem to come from the Archaic period, when the beginnings of trade between groups started.

Good preforms or even rougher blanks such as these could be moved a long way from the original source area before being finished into the needed tools.

Since the Hill Country is so rich in flint and chert, I would say that, judging by the fairly rough state of these blanks, they probably were found at the quarry site or a nearby work area where they were first reduced into this form. There are not often finished tools found at these quarry sites.

But the few finished tools or weapons which I found near the quarry sites were tools from the Archaic period, heavy hand axes, oval knives, Pedernales type points and earlier styles. This puts the time frame back from 3500 before present and longer time back than that, even to 5000 or more. How’s that for a long-winded guess?

Thanks, and happy holidays! Scott
November 28, 2011
Scott,
Thought you might be interested in this point. I held it years ago. It is amazing. It was on loan to my brother. Right now this is all the info I have on it. (See my brother's comments, below.)
My brother can't remember what state it was found in. For some reason I thought he said Florida when I first saw it, not sure. What do you think? The coin for size comparison in the photo is a quarter.
Robert Jones
(Editors note: the coin actually appears to be a nickel, with Thomas Jefferson in a high collar jacket; even so, the blade is very large, shown actual size here.)
----- Original Message -----
From: Robert Jones
To: Bryan Jones
Sent: Monday, November 28, 2011
Subject: Spear Point
Bryan,
Tell me the history on this point again.
Robert
----- Original Message -----
November 28, 2011
Re: Spear Point
Buddy of mine’s Dad had an older relative who found it. His dad is in his 70’s so I’d say it was found well over 80 years ago. I think he said his uncle was Turkey Hunting and found it on the ground?
Not sure where, if I run across any notes on it I’ll forward it info along.
If you don’t have it you need to get the Overstreet Guide. The Holy Grail for Indian Rocks. I’m pretty sure he had a few collectors/experts listed in his guide and I actually took this point to one of the experts he had listed in KY.
He was basically shaking when I showed it to him, said he couldn’t price it, but everything about it said it was authentic.
He had heard of a few but never held one. Ceremonial Point. Problem with one being as old as this one is without actually digging it yourself it could have been a counterfeit that was hundreds of years old?
--Bryan Jones
The villages of “Terremara” were the Archaeological and Ethnological Museum of this town. The excavation of a prehistoric “Terramara” at Tabina di Magreta, in the province of Modena, northern Italy, and kept in the north of the country. During the Early Bronze Age, the period when the Early Bronze Age, the period when this point was manufactured, the conflicts were extremely common, and bows and arrows were used a lot. Very common was bronze arrowhead with spreading wings and prominent shoulders, and bone and antler points too. Though flint was in decline, even for hunting, stone arrowheads were still used. Now, the typology of point which I submit is of greatest interest, because it is extremely rare. I studied for a long time this typology and I’ve done experimentation to understand their functions. I picked up my remarks in the paper, published in Antrocom 2006 - Vol 2 - n. 1 - 17-23, attached at this email. Unfortunately it is in Italian, and I’m not a good translator. I’ll try to summarize some considerations in my poor English, in the hope that may interest you and your Magazine.

Vittorio Brizzi
December 22, 2011
Greetings from Texas!
Thank you, Professor Brizzi, for your letter, article and photographs. I appreciate very much your interest. I will be happy to use your article and photos in the coming issue of ArrowheadCollectingOnTheWeb. It will definitely be of interest to our readers.

I note your professional interest in Experimental Archaeology. I often thought that it would be beneficial to pursue a masters in this subject area, particularly in flint knapping of several of the ancient lithic styles. Does your university have an on-line/distance learning program where someone from far away can participate?

Thanks,
F. Scott Crawford
December 23, 2011
Dear Mr. Crawford,
Thanks for your response.
Unfortunately my university does not make e-learning courses in experimental archeology, the course is eminently laboratorial, in presence.
I also have a teaching position on Computational Archaeology (my academic training focuses on mathematics and physics) and this is in distance learning, but is on the treatment of archaeological data, virtual reconstructions o productive process, and predictive mathematical models.
I will inform my colleagues from other universities if there is the possibility of obtaining an academic degree through E-Learning on the subject that interests you!
I can definitely provide you study materials (lecture notes and bibliography), although they are all in Italian!
In the last letter I forgot to write you that I recently started a “publishing adventure” with a magazine dedicated to traditional archery, in Italy and beyond.
In its various sections will discuss experimental archeology, primitive technology, flintknapping also, of course.
The first number will be printed in January 2012. His site, still under construction, is at www.arcotradizionale.it. The magazine, Tiro con l’Arco Tradizionale, (Traditional Archery) is “twin” of the German magazine “Traditionell Bogenschiessen” (www. bogenschiessen.de ), with whom we have reciprocal exchange agreements (material, ideas and strategies). The magazine will be distributed by subscriptions, in the main archery shops, in the competitions, in some bookshop and newspaper kiosks in Italian airports and stations. I will be very happy if you could collaborate with us, with an article (for example) about collecting arrowheads in the U.S., opening new potential interest in (and market) here in Italy. Give me your suggestion...
My best wishes, Vittorio
The “Tabina 1” Arrowhead -- An Early Bronze Age Weapon Found In A Northern Italian “Terramare” Village Site

By Vittorio Brizzi

Professor of Experimental Archaeology at the University of Ferrara, Italy

“Tabina 1” -- Description

Made of red flint (probably of “Scaglia Rossa” flint type, from Lessinia) has a pronounced concave base, and bifacial flat retouch with denticulate margins. It is snap-fractured at the tip (probably by impact) and its dimensions are 19 mm. at the point of maximum width and 35 mm. in length. Its thickness in the midpoint is approximately 4 mm, the actual length should be between 46 and 48 mm. The average weight (of the replicas, shown p. 13) is about 7 grams.

The concavity of the base is very pronounced; in the inner edges presents an abrupt retouch, and especially in the interior of the two shoulders, it is very accurate, denouncing the use of very thin and durable retouching device. The symmetry of the pressure of retouching is great and the rhythm is regular, as can be seen in both denticulate profiles.

Each edge has a fair number of teeth; 10 for the right edge (the longest side) and 9 for the shorter. Although it is not possible to confirm the lack of the distal fragment, the trend tends to alternate denticulate already near the end corresponding to the break: probably a trick to get to the top with a less acute angle. Consequence, the right margin will probably present 14 teeth and the left 13.

The production of this type of arrowhead is laborious. The deep “groove” and pronounced thin shoulders that distinguish it, makes the process at continuous risk of rupture.

The retoucher tool, presumably deer antler, must have great hardness and elasticity, had to be particularly thin. A pressure retoucher of this kind (the interface of contact with the edge of the point should not be greater than 2 or 3mm) is very difficult to get off from the antler, is very fragile, and above all it is impossible to use without continuous maintenance.

Mechanical Considerations: Relations Between The Tip And The Shaft Of The Arrow

The arrow point in question, with the concave base, no central stem and two shoulders dramatically pronounced, suggests a specific union with the shaft, which confirm a set of structural and functional aspects. The junction of the arrowhead with the distal end of the arrow shaft, would likely be made using pine pitch mastic (in this area birch tree was not present).

The arrowheads found in the Terramare region are largely made of deer antler, with recurring types in square, circular or diamond-shaped, stemmed some others, but with a very high length to width ratio (enclosed picture of modern reproductions).

Most often the basal section of these arrowheads suggests the diameter of the shaft, and the resulting characteristic is a slim design, without emerging profiles from its shape.

The bronze arrowheads, however, have wings and shoulders, as well as some flint tips, which seem to have been the model for the bronze form, and other arrowheads which are usually quite small in size.

Only the arrowhead “Tabina 1” differs substantially, both for its size and its mass.

Arrowheads in antler or bone, most likely, were the tactical response to the increasingly widespread use of unelastic protections of the warriors (boiled cuir, wood).

Hunting Or Fighting?

Fighting humans and hunting game (although large as deer) are two very

(...continues on p. 12)
The photo here on page 12 is the limestone hill country a few kilometers south of Tabina di Magreta, where the excavation of the fortified Early Bronze Age village found the relatively large arrowhead which is analyzed in great detail here in Professor Vittorio Brizzi’s article. This hill country is along the southern side of the Po River Valley, the major river in northern Italy which flows into the Adriatic Sea south of Venice.

Tabina di Magreta

The photo here on page 12 is the limestone hill country a few kilometers south of Tabina di Magreta, where the excavation of the fortified Early Bronze Age village found the relatively large arrowhead which is analyzed in great detail here in Professor Vittorio Brizzi’s article. This hill country is along the southern side of the Po River Valley, the major river in northern Italy which flows into the Adriatic Sea south of Venice.

The mechanism that allows the arrow to be decisive in hunting, is only based on the blood vessel damage. The “Tabina 1” arrowhead (not taking into account so far its denticulate margins) is close as a template to the Neolithic and Venetian/Lombard Calcolithic arrowhead: triangular with concave base, they differ from “Tabina 1” size and weight, hardly more than 3 grams and 20 mm. in length. These small arrowheads (commonly spread throughout the area of Verona and Vicenza) have in common with “Tabina 1” only the possible hafting system, which still represents an important indicator. Let us now study this aspect.

How does an arrowhead “firmly attached” to the shaft, compare to a simple set with mastic? If we refer to terminal ballistics, a projectile point with a weak interface between the shaft and arrowhead cannot be used other than to allow a deliberate separation between the components.

(...continues on p. 13)
In other words, this means that the arrowhead remains in the wound, both at the post-impact time than after removal of the arrow. In the case of hunting game, the arrowhead bonded with mastic detaches from the shaft in response to movements of running prey; this process is made easy by the heat of the body that allows vegetable glue softening.

An arrowhead that remains in the cavity of the wound increases its severity; in addition, the lost shaft can be recovered from the bowhunter.

When used in combat, trying to remove causes the same result, and does not allow the enemy to re-use the arrow immediately, to offend those who have shoot. It’s also true that flint arrowhead, with residual mastic, remaining deep in the wound, causing septicemia with time (even without poison), and above all involves some effort (and therefore not offensive employment) to the other warriors engaged in combat, intervening to help the injured. From an economic point of view, a valid tactical action.

The arrowhead of "Tabina 1" has in common with these small arrowheads only the profile (although scale 2.5:1) and its pronounced shoulders suggest that it should be done for “persistence” in the wound. What is certain is that its size places it in the category of heavy projectiles, hurled by strong bows, for the internal and external ballistics reasons made earlier.

The next consideration, in support of this thesis, is suggested by denticulate profile. It is known that a linear profile of cutting provides best penetration. The serrations greatly increase the friction, and therefore the choice of the manufacturer must have gone to meet a specific functional criterion. If used in combat, might have been effective only upon warriors unprotected (bare-chested) or with only slight covering of cloth. The length the arrowhead (over 45 mm.) and its fixing system (only vegetable mastic) if the shot is not perfectly perpendicular to the target, probably protected by a hard and inelastic protective coat, would easy cause rotation of the tip in the impact or breakage. Even in the case of an orthogonal shot to the surface, the large cross-section and serrations would reduce the penetration.

In the case of hunting (impact with the rind of an ungulate) the problem of the rotation is reduced by the elastic reaction of the skin covered with hair, and serrations increases the wound surface. Each tooth, using the elastic properties of tissue carries with it a larger surface area and the resulting cut is 1.5 to 2 times greater than the geometric cross-section of the arrowhead. What he gets is a hemorrhage of greater magnitude. A terminal ballistics optimization which is only possible if the speed of the projectile multiplied by its mass is high, and the propulsion system is classifiable as a “high performance system”.

This can further confirm the hypothesis formulated above. A bow that can’t shoot projectiles hafted with “Tabina 1” arrowhead at speeds over 50 m / sec., would be inefficient for hunting large game.

The point of “Tabina 1”, a totally atypical shape in the prehistoric Italian Cultures, may suggest some important data, and its discovery, if confirmed by other similar in the same context, would lead to arguments about a specific “specialized” cultural aspect of the bow of Terramara, which involves mechanical and ballistic factors.
Pat Welch found this expertly made, completely transparent obsidian "Gunther" style arrowhead in the place where it was last used, abandoned or stored away and forgotten. Now, any collector can tell you that there are times when you will want to wander the fields and streams yourself. So, every month, in the pages of "Arrowhead Collecting On The Web", we also provide articles and photographs to show you how to effectively look for and find ancient arrowheads and other tools you collect. We also share stories by readers across America who write about and photograph their own, personal finds. Don’t miss a single article each month in Arrowhead Collecting On The Web.

I found this ancient arrowhead, shown here, on the world wide web, although it was originally found in Modoc County of northern California in the 1960’s by Pat Welch. I purchased it from Pat’s daughter, Jennifer Peterson, in an auction on eBay in November 2009. The eBay ID which Jennifer uses is “angelfaerieland".

Actual size: 1” x 9/16”

I Found This Arrowhead On The World Wide Web™

Arrowhead Collecting On The Web™

Artifact Authentication Services & Certificates Of Authenticity

Authentication and evaluation services for artifacts from all over the world are available from a number of highly respected sources. Some offer these services for regional items, since they specialize in Western, or South Western, or South Eastern, or North Central or North Eastern artifact types. And most of the authenticators have web sites. Read up on their services, learn about their specialties, obtain pricing and timing information, and determine how to send items for authentication and evaluation. Here are some well known and respected authenticators:

**Dwain Rogers**
Texas Flint Authentication
4102 Birch Avenue
Temple, Texas 76502
Telephone: 1-254-791-5520

**Jeff Baker**
Baker Authentication
www.BakerCOA.com
P.O. Box 772
Paragould, Arkansas 72451
Telephone: 1-870-239-9722

**Bill Jackson**
Jackson Galleries
www.JacksonGalleries.com
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Mount Sterling, Kentucky 40353
Telephone: 1-800-466-3836
Fax: 1-859-499-0160

**Tom Davis**
Davis Artifacts, Inc.
www.TomDavisArtifacts.com
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Telephone: 1-606-663-2741

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You can use a jeweler’s Lupe 8X magnifier, just to begin the high enlargement examination of an artifact, to look for edge wear and tool marks.

http://www.Stormbroek.com
A European artifact gallery, which offers quality antiquities from all historic eras, and all areas around the world.
eBay Store: Stormbroek

Scottsbluff Spear Point, late Paleo, early Archaic period, age 8,000 to 10,000 years.
eBay store: SWArkArtifacts
eBay ID: “razrbk”
Dealer located in Arkansas, features authentic artifacts from the south/central United States, many with Certificates of Authenticity.
eBay Store: SWArkArtifacts

Old Stone Age Handaxe (Paleolithic), age 200,000+/- years.
Use the publisher’s new book, which provides 88 pages for your sketches and notes, and gives you an excellent format for recording your own arrowhead collecting discoveries: “FIELD NOTES”.

It is now available from the web site: www.Amazon.com ~ look under books, by the author, F. Scott Crawford, or the identifying number: ISBN-10: 1-4680-0648-7 $11.95 (Soft Cover Book)