The ATLATL

"Too long have I hunted mammoth alone!"
Rich McWhorter

April 1998 THE NEWSLETTER OF THE WORLD ATLATL ASSOCIATION, INC.
1390 South Paris Court, Aurora, Colorado 80012, USA Vol. 11, No. 2
BILL TATE, EDITOR

Mummy Burial of the Muisca Empire

By Lorenz W. Bruechert

In March of 1991, a mummy burial (Fig. 1) was discovered in the Pisba Paramo region of Boyaca, Colombia at an approximate altitiude of 3500 meters. Among the grave goods found with this mummy was an *estolica*, or dart-thrower, and a ceramic cup.

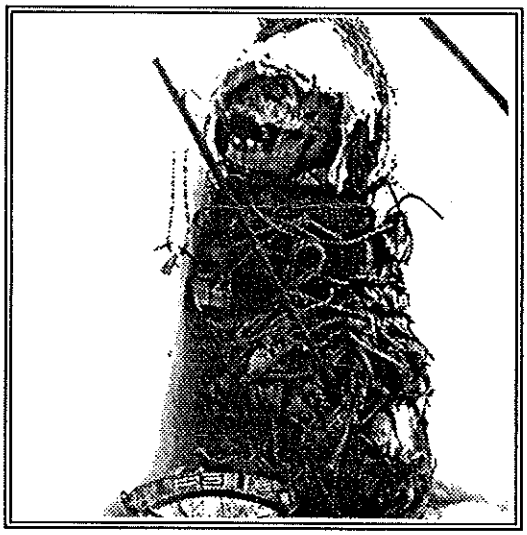

Fig. 1. Mummy burial with estolica.

The finger grip (Fig. 2 top) of the *estolica* was made of bone or shell and lashed onto "macana" wood with what is probably "fique" or agave fibre. The hook (Fig. 2 bottom), also made of bone or shell, is set into the wood and lashed in the same way as the finger grip then cemented with a resin-sap or tar covering. Based on the ceramic design on the cup, the mummy was dated to the late part of the Muisca Empire (A.D. 1300-1450).

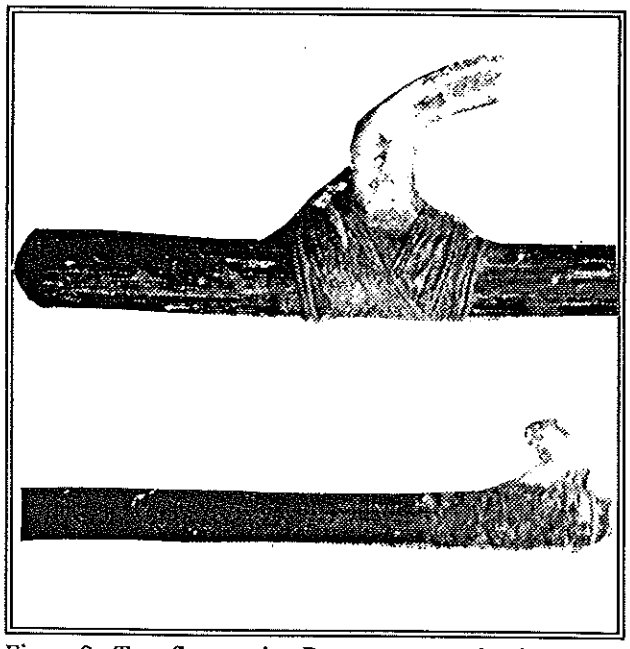

Figure 2. Top: finger grip. Bottom: spur or hook.

Acknowledgment: I would like to thank Mr. Harry Marriner of Santa Fe de Bogota, Colombia for bringing to my attention the discovery of this mummy burial and for providing the information and photographs for this article.

The Meanings of Atlatls? Robert Hall's Archaeology of the Soul.

Reviewed by John Whittaker

We think a lot about what atlatls did and how they worked, but here is a different analysis: what they meant. *In An Archaeology of the Soul: North American Indian Belief and Ritual* (University of Illinois Press, Urbana, 1997), Robert Hall examines all sorts of themes in American Indian belief systems, focusing especially on the calumet "peace pipe." It is a well-written, interesting, wide-ranging, and somewhat speculative book, and Chapter 14: Atlatls, Courting Flutes, and Calumets (pp. 109-123) is particularly relevant to atlatlists.

Hall tries to connect the symbolism of the three artifacts in the chapter title, plus other objects and symbols. I will give a simplified summary of his main arguments, and then add a note of skepticism.

Hall points out that atlatls are multifunctional tools which would have been important and meaningful in their cultures. They are often elaborated, and at the prehistoric Indian Knoll site, for instance, they occur in child and female burials as well as with men, so they are not just male hunting gear. We should expect that the symbolism of atlatls survived in other artifacts when atlatls went out of use.

The outline of Mississipian maces, for instance, mimics the form of atlatls with finger loops. The mace symbol in turn survived as tattooed marks of honor on Ponca girls, although the Ponca called the marks "children." They symbolized membership in a society honoring night and female powers, and are between tattoos of the sun and stars; thus the atlatl can be read as a symbol of the earth and the path of the sun. The Mexican glyph "ollin" (Earth, Earthquake, Movement) is an atlatl handle with two loops, and similar motifs occur elsewhere in Central America, and as the bisected circle motif on Hopewell pottery.

Birdstones were probably used as grips on atlatl handles. Some have four feet, and in form they seem to derive from a Central American bird-crocodile monster, seen on an atlatl handle from Cocle, Panama. This again makes the atlatl an earth symbol and female metaphor, since the crocodile in Central America is like the turtle in North American iconography. Birdstones are also similar to the movable block on courting flutes, which in turn are symbolic atlatls as shown by a ceramic flute in the form of an atlatl from Vera Cruz. In North America, the courting flute was also associated with war bundles, and used to call young men to war. Atlatls would make logical war symbols.

Pipes and tobacco are also associated with war, and with birth or adoption, and with maleness. Early pipes were simple straight stone tubes, probably derived from cane tubes, or cigars. Some South American cigar holders and atlatls appear to have the same form and may be symbolically connected. In North America, the perforation for a finger grip in some atlatls, like those from Key Marco, could be used to hold a tubular pipe. Because you blow through a flute, which is a symbolic atlatl, it is natural to think of smoking through the atlatl/pipe-holder, an idea which then becomes inspiration for the platform pipe or the flat stem of a calumet. Some calumets even have bowls shaped like a mace or lobed like the loops of an atlatl grip.

I have simplified Hall's ideas and left out a lot of other connections he suggests; atlatlists should read his work for themselves, but I recommend taking his speculations with a grain of salt. Hall, by the way, mentions his own practical experience with atlatls in the chapter. We should expect that prehistoric atlatls were important symbols - after all, they are, in different ways, important symbols to modern atlatl enthusiasts. We should be alerted to symbolic possibilities of all artifacts; atlatls were important possessions, and just as likely as bows, or shields, or personal ornaments to be used for expressing personal identity, social status, or religious meaning. Hall has some intriguing ideas, and suggests lots of possible connections, but in the end, I was not convinced by most of them.

There are a number of problems with the kind of arguments that Hall makes. First, he uses bits of information from cultures widely separated by time and space. Most anthropologists would agree that there are some long distance connections and widely spread, long-lasting patterns in Native American technology and thought. However, there are a lot of gaps too. For instance, loops for finger grips are typical of southwestern and Mexican atlatls, but not of prehistoric atlatls in the southeast and midwest (e.g. Indian Knoll), so why should Mississipian maces imitate southwestern atlatls? A Mexican connection? Perhaps, but the evidence is pretty thin. If historic Ponca (who are separated by 600 years from Mississipian maces and even more from atlatls) say a tattoo represents a child, why assume it is really a mace/atlatl? (It looks like the female silhouette on a bathroom door.) The problem with connecting maces, atlatls, pipes, flutes, tattoos, and other items is that it is too easy to see superficial similarities between long objects with things that stick out to the sides. Butterfly nets, the Hammer of Thor, the Christian cross, the Mycenean double bladed axe, and medieval European maces are all objects and symbols that look just as similar, but have no possible connection to atlatls. Some of the similarities may be significant, some are surely nothing but coincidence.

Hall would argue that his examples are connected not just by shape, but by their common symbolism. However, again he picks and chooses, and many of the supposed symbolic connections are vague and general. Connections to war, religion, the earth, maleness, and femaleness can be found in both his group of artifacts and mine. Hall is able to argue first that atlatls are connected to the earth and femaleness (Ponca tatoos, Indian Knoll burials) and later that they reflect sky and path of the sun (Ponca tattoos again) and maleness (cigar = anaconda penis [wouldn't Freud love that!] = pipe/tobaccco = male, male activity). Yes, symbols can mean contradictory things; the Christian cross reflects both life and death, for instance. However, the slippery way meanings get attached to symbols, and change through time, means that it is very hard for the archaeologist to look back and see what past people thought, and very easy to see possible connections that may even make sense to us, but would never have occurred to prehistoric atlatlists.

Although I think some of Hall's conclusions are far-fetched, he will make you think about your atlatl a bit differently. If anyone wants to try, I expect a pretty coherent symbol system, or even a spectacular ritual could be worked up around modern atlatls!

Note: John Whittaker teaches in the Department of Anthropology, Grinnell College, Grinnell, Iowa.

In Search of the Optimal Dart

By Richard VanderHoek

I made my first atlatl and dart in the early 1970s for a high school project. The atlatl, or throwing board, was a copy of a Western Alaska Yupik Eskimo type, made to model a picture out of a book. The dart I used with it was made from a short stiff dowel, reflecting availability more than aboriginal use. Except for one surprisingly long cast, the dart never flew far enough or accurately enough to purposefully hit anything.

Almost 20 years later as an archaeology student I was back constructing similar equipment and trying to throw a dart. I had little better luck the second time around. I blamed it on the atlatl, not realizing that my broomstick-like dart was the guilty party. Later, researching my M.A. thesis, I studied the history of atlatl experimentation, to see if it held any answers to the question of what makes a good dart. I also looked at the ethnographic record, focusing on Australia and the North American Arctic, where atlatl and dart use has actually survived in some places down to the present.

As I was doing this research I received a tube in the mail from Ray Madden, a kind and skilled atlatlist I had met at the Fort Osage Knap-in. In it were a number of multi-piece darts, constructed out of both natural tree shoots as well as manufactured dowel shafts. They all worked much better than those I had been using. I knew that these darts from Ray, along with the darts used in the Arctic and Australia, had to have some common factors that made them work so well. At that point I decided to attempt to isolate what these factors were. The archaeological focus of my thesis went down the drain, to be replaced by a techno-functional one.

Experimental, ethnographic, and theoretical work had already pointed out that darts had to flex (Cundy 1989; Perkins and Leininger 1989a, 1989b, 1990; Tolley and Barnes 1979), that the dart's center of gravity (balance point) had to be forward of the dart's measured center (Mau 1963; Ratzat 1992), and the dart's center of pressure needed to be behind its center of gravity (Cotterell and Kamminga 1990). The dart's center of pressure is its aerodynamic center of gravity, so to speak. The more fletching used, for instance, the more the dart's center of pressure is moved to the rear.

So: darts needed a forward center of gravity, some way (either by adding fletching to the rear or weight to the front) of having a center of pressure behind the center of gravity, and a dart that flexed with what people were calling the appropriate "spine." Spine, or spine weight, as most know, is a term borrowed from archery. It refers to the stiffness of the arrow shaft, and is measured in five pound increments by suspending a weight from the middle of an arrow supported on pegs 26 inches apart. The spine weight is determined by how far the arrow bends with the given amount of weight.

It was apparent, though, that these factors were only part of the equation. I looked at some of the other factors that were held in common between the good darts that I now had and the ethnographic examples that I read about or studied in museums. To start with, they all had stiff forends - not just a bunch of weight shoved on the tip, but a stiff forward section, be it a heavy dowel front section or the larger diameter front of a tapered shaft. (The importance of a stiff front end has also recently been noted by Strischek [1997a, 1997b, 1997c].) A further examination showed that while the front was stiff, the rear was usually more flexible. This flexibility could come from the smaller diameter tail of a natural shaft (Australia), or from a thinning of the shaft at the very tail or just in from the tail, to allow the tail to more easily flex (Eskimo and Aleut).

In working with Ray Madden constructing darts that had these characteristics, I finally had darts that worked rather well. I even found one commercial dart that included these characteristics. Later, strapped for time, and living in conditions that did not allow me to easily work on darts, I ordered more of the commercial dart model that I had liked. Lo and behold, when they arrived, the two new darts did not function nearly as well as the first. They had good centers of gravity (~40%), stiff forends, main shafts of the same length and diameter as the original dart, and generally similar fletching, so presumably similar centers of pressure. But they flew poorly! A close examination of the flexibility of the new shafts showed the main difference. The two new darts were much more flexible than the original. Spine! Oh, yeah, that!

Dart spines have not been regularly measured because of the obvious differences between atlatl darts and arrows. Not only do atlatl darts sometimes bend differentially along their length, or even already have a slight bend, but they come in a wide variety of lengths. This does not readily adapt to the archery model of laying the shaft on two pegs a set distance apart and hanging a weight off the shaft to get it to bend. There had to be another way to test the spine of a dart.

In thinking about spine weight, I pictured the process causing the dart to bend. The atlatl, moving forward against the rear of the dart, compresses the dart and causes it to bend. What if I also compressed the dart from the rear, but did it with the dart's tip resting on a scale to see how many pounds of force it took to bend the shaft? I did this, and found that a dart remained stiff up to a certain amount of force, and then rapidly gave way and bent. The amount of force it took to bend a shaft consistently fell within a fairly narrow range for each shaft. (Later research showed this range be within about a pound.) I have to admit that my first experimentation using this "compression method" was with a bathroom scale. It gave me a range of about 6 to 10 lb (2.75 to 4.5 kg) for my five best darts. Because of this moderately broad range, I presumed that people could tolerate darts within a considerable range of acceptable spine weights. My wife cautioned me that bathroom scales are notoriously inaccurate, so I finally tracked down a postal scale that reads ounces and grams to 25 pounds. In re-measuring my darts with this more accurate scale, I found that while my total collection of darts ranged in weight from 3 to 15 lb (1.35 to 6.75 kg), the better darts had a somewhat narrower spine range than originally thought (~6.25-9.25 lb/2.8-4.16 kg), with my best dart at the low end of that group. The two newly purchased, lighter-spined darts weighed in at 3 and 4.5 pounds.

These darts were simply measured by putting the dart point in the middle of the scale plate and pushing on the tail of the vertically-standing dart until the dart flexed. For a dart 6' to 6'6" I allowed the dart to flex about 3 to 3 ½ inches. This method requires one person to push and one person to read the scale for maximum accuracy, though careful siting of a mirror might reduce it to a one person job. It gives a reasonably consistent measurement, and is quick and easy to do.

For a standardized way of measuring dart spine more comparable to the archery method, a system that applies graduated weight until the shaft bends a set amount might be the way the field should go. Ray Madden has suggested that a jig be constructed that holds the dart in a vertical position with a system allowing graduated weight to be stacked on the top, compressing the dart until it bends the set amount. This jig can be constructed to fit all different dart lengths, have a moving measuring scale to measure the dart at its place of greatest bend, be operated by one person, and give a reasonably exact and repeatable weight that is easy to determine. I have constructed one along these lines that works reasonably well, but the system still has glitches to be worked out, and is not yet as easy to use as the postal scale method.

Since shorter darts do not need to bend as much as taller darts to indicate their spine weight, dart spine should probably be calculated as the amount of force (weight) needed to bend the dart a certain percentage of its length, possibly about 5%, or 1/20th of the length.

It is important to the sport that dart manufacturers and users adopt a uniform way of measuring spine weight. This allows us a way of consistently measuring one of our most important dart variables, enabling users to find spine weights that work for them, and allowing producers to manufacture darts to match those needed weights. The adoption of the compression method would appear to satisfy the needs of the field at the present time, and does work. I recently received two additional darts from the aforementioned dart manufacturer, who had constructed darts to match my preferred spine weight, using the compression method to find shafts in the desired spine range. These two darts fly very well, and with the original dart give me a matched set of three darts with almost the same flight characteristics.

What the sport needs for testing an individual's preferred dart spine is some system where a person could try a variety of darts, with the varying spineweight of the dart shaft being the only variable changing from dart to dart. This could be achieved by using a dart system with a single long detachable foreshaft and multiple identical main shafts spineweighted in regularly increasing increments.

The preceding discussion brought forth five important variables that need to be addressed in the design and construction of a proper functioning dart.

1). **Center of Gravity**

The dart needs an appropriate center of gravity, probably around 40%, though depending upon other factors the acceptable range may vary from less than 35 to greater than 45%.

2). **Center of Pressure**

The dart needs an appropriate center of pressure. This is hard to quantify at the present time. A poor center of pressure (usually one too far forward) is generally corrected by adding larger fletching to the tail and/or doing something to move the center of gravity forward. We should note, though, that darts can be constructed that do not need fletching to fly well, as seen in all Australian woomera-thrown spears and many Eskimo and Aleut throwing board darts.

3). **Stiff forend**

A stiff forend is important to keep the front of the dart from flexing, and keep the dart point in the same plane and flying straight to the target. The more (and longer time that) the dart point oscillates, the less chance it has of pointing at the location aimed at when it finally connects with the target.

4). **Flexing Tail**

The closer the darts oscillations can be confined to the tail, the greater percentage of dart that can stay on the launch plane and fly accurately to the target. Experimentation performed with Ray Madden suggests that darts can be made to fly well with only the last 25% or less flexing.

5). **Spine Weight**

The dart's stiffness, or spine, needs to be in the moderate range, with optimal spine weight varying from person to person. Measurement of dart spine on accurate scales has shown that, at least for me, an acceptable spine range is narrower than I once thought. I appear to do best with darts spined between about 6 and 9 pounds. My preferred range may be even narrower than this, as the three darts spined between 6.25 and 7.25 lb fly the best, with the other darts flying less well, though probably for a variety of reasons. This can be compared to spine weights for three top European atlatlists, recently received from Pascal Chauvaux, that range between .885 and 2.35 kg (1.9-5.2 lb), showing that spine weight varies considerably from person to person.

I believe these five factors: center of gravity, center of pressure, stiff forend, flexible tail, and proper spine weight, are among the most important factors to consider when constructing a dart. Of course, these are not the only important variables involved in dart construction, as there are many other factors to address in dart design. Hopefully we can continue a dialog in *The Atlatl* started by Perkins and Leininger, Hayes, Strischek and others to help the sport agree on important dart variables, and on ways to measure and discuss these variables, as we each continue our search for our own optimal dart.

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Optimal Dart Questionaire

By Richard VanderHoek

While the atlatl/spearthrower and dart/spear are a technology many thousands of years old, the resurgence of interest in this technology is relatively recent. Because of this, the important variables that go into the construction of the atlatl and dart are not agreed upon and except for the good works of a few people like Ray Strischek, published in *The Atlatl*, seldom even discussed.

A few modern atlatl practitioners in Europe and America have probably achieved the skill level of prehistoric hunters. These practitioners, usually through trial and error have figured out an atlatl and dart system that works for them and that allows them to make consistent hits on targets at various ranges. In the study of the atlatl and dart, it has become obvious that the dart is by far a more

important factor than the atlatl. Unfortunately, many people are unaware of this fact, and unaware of many of the important variables that go into the construction of an optimal dart. Many of us have practiced with poorly functioning darts, often not realizing that it was in part the equipment that held us back.

I suggest that the top atlatlists who are willing to share the specifications of their optimal or favorite dart do so, including the following information to allow duplication of that individual's "optimal" dart, and hopefully allow others to emulate a little of that person's success. Following are the variables and information that I have found to be important in the recreation of a proper functioning dart. Participants in this study should at least provide the bolded items:

General description of dart.

- **Shaft material(s).**
- **Shaft length.**
- Shaft diameter(s). If diameter varies, give diameter at multiple locations on the shaft.
- **Shaft weight.**
- Wall thickness. (if synthetic)
- Shaft shape - round, octagonal, etc.
- **Balance point.** (In percent, measured from the front of the dart. A two meter dart with a balance point 80 cm from the tip would have a balance point of 40%, as in 40% of the distance from the tip to the tail.)
- Is shaft spliced? If spliced:
  - Number of pieces, lengths, diameters
  - What kind of splice? (Diagonal, V-shape, tubular sleeve, etc.)
  - What kind of mastic and wrapping was used?
  - How much do the spliced shafts overlap?
- Point type.
- Point weight.
- Foreshaft employed? (Length, material, diameter, weight)
- **Location of greatest stiffness.** (Why there? i.e., because of the larger diameter butt section of tapering cane of willow shoot, larger diameter spliced front section, rigid splice, external wrapping, etc.?)
- **Location of greatest flex.** (Why there? i.e., because of smaller diameter section of cane or tree, thinner spliced section, thinned section of dart, etc.?)
- **Amount of shaft flex.** (Spine weight) See below.
- **Fletching.** (Material, number, location on shaft, length, height, shape.)

Other Important Variables

- Atlatl: (Overall length, functional length from pivot point-index finger--to spur, weight, balance point, height of spur, flexibility, stiff, moderately flexible or very flexible, employment of atlatl weight and its location.)
- Your throw: (Force-easy, medium or vigorous, Style-smooth easy lob, lots of shoulder, lots of wrist snap.)
- Other variables than the above should also be included if they affect the functioning of the dart or the smoothness of the throw. You might include a picture or two of sections of the dart where a photo helps to illustrate a point.

Hopefully with the sharing of information like the above, we can refine and disseminate the important variables that make up an optimal dart!

We need a good test for dart spine weight that works on all kinds of darts. I suggest putting the tip of the dart on a postal scale, and pushing on the knock or tail end. The shaft will stay still, then at a certain point, suddenly give way and bend. Note the weight when the shaft flexes and give that as the spine weight. An accurate scale that reads up to 20-25 pounds (about 10 kg.) is most optimal for this. Beware of using a bathroom scale for this. It will tell you which darts are stiffer spined that others, but because of the inaccuracy of the scale, the weight given may be as much as 30% off the true spine weight. Darts I have spine weight-tested in this fashion ranged from 3 to 15 pounds.

Editors Note: Some WAA members have been interviewed by Ray Strischek on this very subject with a similar checklist. Neither Ray nor Richard knew the other was working on this project. Those wishing to contribute information on their darts may contact Richard VanderHoek at 11600 Mary Ave. Anchorage, AK 99515 or Ray Strischek, at 10810 peach Ridge Rd., Athens, Ohio 45701.

From Secretary, Leni Clubb: WAA has just received an application for our 400th member. He is Digby Stevenson of East Sussex, England. Digby is an experimental archaeologist and is currently working on early Roman artifacts. He hopes to correspond with researchers in the United States as a "perk" to his membership in WAA.

Flint Ridge Ohio-multiple events scheduled for "D-Day"

by Ray Strischek

"D-Day," the 6th of June will be celebrated at Flint Ridge Ohio with several atlatl events:

From 10:00 a.m. to noon the Ohio Atlatl Association (OAA) will instruct some 75 central Ohio Boy Scouts in the construction and use of the atlatl and dart.

Noon to 1:00 p.m. Ray Strischek, OAA President will give an atlatl talk to the general public.

At 1:30 p.m. OAA will conduct an International Standard Accuracy Competition. The idea is to let the Scouts watch as the pros" run through the contest. Awards will be given to the top ten atlatlists.

Finally at 3:00 p.m. the Scouts will get to try their hand at competing with one another under the guidance of OAA.

Letters, e-mail, phone calls, etc.

Hi Bill,

I recently acquired an Eskimo atlatl, and sure am pleased. It is for a right handed thrower, and has a semi-circular hole for the thumb and a slot with ivory pegs to separate the fingers on the side opposite the thumb. The widest part is at the handle and it gets narrower towards the tip, but is also thicker as well, with a channeled section, much like the Australian aboriginal bowl-shapes. At the end of the channel is a flat piece of ivory for the butt of the spear to pivot against. The atlatl is very light and may be made of cedar wood. It has bands of red paint throughout and is in extremely good condition. I was even more impressed with the spear. The tip is the most vicious thing you ever saw! I would rather be shot with a gun than stuck with this thing. The spear has three barbs in a circular pattern that surround the long serrated central point. When the animal thrashes about, the three secondary barbs force the spear to dig in deeper. The spear also has red paint and is held together with

ivory dowel rods and sinew bindings. Really interesting technology. Normally old Eskimo atlatls sell for as much as $1500--without spears, if you can find one. After years of searching for this it only cost me $375 for both.

Ted Bailey

Ed. Note: Ted, maybe one of these days you will send us a photo or two of this new acquisition. It might be interesting to learn how you acquired it too.

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WANTED

Someone with enough money to back the promotion of the atlatl as an Olympic Sport!

I am willing to devote all of my energy and expertise to the development, manufacturing, world wide sales, and promotion to make throwing the atlatl an international competition and an Olympic sport.
Chuck Butorajac, PO Box 533, Ligonier, PA 15658, phone (724) 238-6878.

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Dear WAA Officers:

Bulk mailing could save us from $250 to $500 a year on the cost of mailing the newsletter. I worked out these economics on the basis of mailing to 350 U.S. members each year. There are two classes of bulk mailing: One for "for profit organizations," and one for "non-profit organizations". Both categories require a minimum number of mailings, which we meet, and annual fees we would be required to pay. Pre-sorting by zip code would be necessary as well.

Lloyd Pine

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Dear Mrs. Clubb,

Enclosed please find a check for $10.00 to cover the cost of membership in The World Atlatl Association. We use an atlatl here at the museum to show children how the early people in our area hunted. We would like to continue to get your newsletter as it contains ideas that we can use in our museum programming.

Jane Pieplow, Director/Curator, Churchill County Museum, Fallon, Nevada.

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CORRECTION CORRECTION

Dear Bill,

I goofed when I wrote the Cahokia account for the January issue. Christopher is my nephew and I guess I typed his name rather than Nicholas, his son, the 8-year old who scored 40 on the ISAC.

Ron Mertz

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Dear Bill,

I recently received a copy of Richard VanderHoek's thesis, The Atlatl and Dart, submitted in partial fulfillment for his Masters Degree at the University of Illinois.

It is great! Everything I have ever read or heard about the function and performance of the atlatl and dart, every thing I ever experienced and tried to communicate to others as a layman, everything I needed to know but could not find and a whole lot more I did not even know existed, is in there, and given a scholar's close examination and impartial treatment.

Richard's work takes note of, and pays all due respect to every previous theory and model of how the atlatl and dart work, and then steps into the future we have all been waiting for: some valuable insight right now into the real time function and performance of the atlatl and dart, and the relationships between design elements. VanderHoek does this by investigating and comparing ethnographic and archaeological facts about the atlatl and dart to the field tested personal experiences of a long list of modern atlatlists that reads like the membership list of The World Atlatl Association.

Ray Strischek

Editor's note: Those are mighty glowing words from one expert atlatlist to another. Your Editor too, has had the opportunity to review VanderHoek's thesis, and I must admit that it is about the finest thing that has come down the pike on the subject. As of this date, the thesis is not available to the general public, but Richard plans to publish the report at some time in the not too distant future. You will hear about its availability on these pages.

LINKS

Computer buffs can now find more and more atlatl related information on the internet. Some of the better atlatl pages now available include: http://home.earthlink.net/~ssazzi/waalogo.html This page by Suzie Brown, wife of WAA President, Charlie Brown, leads to a great bunch of links. Just click on the WAA logo to get started. Dean Pritchard has also been busy updating his great page: http://netnow.micron.net/~atlatl/index.html Of course, anyone searching the net will come upon Ted Bailey's World Atlatl page and the many links it leads to: http://users.aol.com/tbprim1/WAA.html

The First (we hope) **Annual Alaska Atlatl Competition**

by Richard VanderHoek

The First Annual Alaska Atlatl Compeitition was held at the Bureau of Land Management's Campbell tract Facility in Anchorage, Alaska on March 8th. It was sponsored by the National park Service and BLM as part of Alaska Archaeology Week activities. The day was sunny and warm with temperatures in the high 30s. The targets framed by the Chugach Mountains in the background, ranged from 4 to 26 meters distant and included pictures of mountain sheep, musk-ox, mammoth, and for the vegetarian and gatherer component in the crowd,. A giant carrot.

Fifty-one contestants participated, 27 adults and 24 youths, most of the latter of whom-were Bow Scouts. (Boy Scouts get credit for using the atlatl and dart as part of the primitive/traditional skill section of the new archaeology merit badge.)

The event was covered by two local TV stations and the public radio system who broadcast the wining names over its statewide network.

First and second place in the Men's Division went to two long-time atlatl-wielding rabbit hunters, who had to use borrowed darts when their own broadhead-tipped darts were disallowed because of prior arrangements with the landowners.

Results:

Youth	Women	Men
Erik Oruoja 25	Bobbie Lakanoff 32	Larry Ford 69
Allen Ream 24	Marti Murray 8	Mike Lettis 58

Top Boy Scout – **Erik Oruoja**

WAA Grand Champion – **Larry Ford**

The Lekanoff family of Cold Bay, Alaska, took first place for the farthest traveled, flying almost 800 miles to attend the competition. Their intention is to reintroduce use of the throwing board and dart to school children of their region, many of whose great-grandfathers made their living hunting from kayak or baidarka with the throwing board and dart.

EARLY HIGH 1998 ISAC SCORES MAY MEAN STIFF COMPETITION FOR THIS YEAR'S THROWERS

From Lloyd Pine

Jean Speckens of Belgium scored an 87 on Feb 1st competition in Laragne, France in the Alps. Other good scores at that event include Laurent Bernat of France with a 79, and Pascal Chauvaux of Belgium with 71. Back here in the USA, Lou Becker of China, Michigan tallied a very respectable 72 on Jan. 25th at the Fenton, Michigan competition.

We were alerted by Pascal Chauvaux to look for some great information about Tautavel, France on the computer:

http://www,culture.fr/arcnat/tautavel/en/index.htm

Note, that Tautavel is one of the sites where American atlatlists will actively compete with the Europeans this year. President Charlie Brown, Susie Brown, Russell Richard, Jim Ray, Lloyd and Patricia Pine, Bill and Marcia Tate are heading for France in late July and will attend both the Lourdes and Tautavel competitions in the Pyrenees mountains along the Spanish border.

ON TARGET

ORGANIZERS OF ISAC (International Standard Accuracy Competitions): Lloyd pine requests that you **print** or otherwise write the ISAC participant's names and city and state **plainly** on the official score sheets. It would be embarrassing to publish a name incorrectly in the newsletter. (This almost happened this year – a man's name was mistaken for a woman's name!!!)

ORGANIZERS OF ATLATL CONTESTS: We have a new supply of WAA brochures available for distribution at your contests. Help promote your association at competitions. Also, if you wish t present a WAA Grand Champion Award to the winner of your contest, let me know and I will send you application information.

The European-style spearthrowing contest is gaining in popularity. I have copies of the rules and information on the targets and scoring available (translated from the French by Pascal Chauvaux). Word is, that it is a lot of fun. We are going to do it at Valley of Fire, Nevada, this year.

Deadlines for putting anything in ***The Atlatl*** is March 15th for the April issue; June 15th for the July issue; September 15th for the October issue; and December 15th for the January issue. Additionally, if you plan to hold an ISAC at your event, you must notify me 30 days in advance of your date if it is not already scheduled in an issue of ***The Atlatl***.

Check your membership expiration date on the upper, right had corner of the mailing label. You don't want your membership to expire – just think what you will be missing – the calendar, articles, news of successful contests and scores...lots of stuff!

I have been receiving some very interesting information on the Aleute throwing board and dart that I want to share with you. Watch for my article in a future issue.

The internet is full of information on the atlatl. Check it out. Also, courtesy of Ted Bailey, of Ann Arbor, Michigan, we have a revised WAA home page, with an added link: http://users.aol.com/tbprim1/waa_articles.html

Lent

PALEO-INDIAN SPEAR FACTORY EVENT

Early Native American spear manufacturing techniques will be demonstrated to the public at the Paleo-Indian Spear Factory on Saturday, May 30, 1998.

The event sponsored by the Missouri Department of Natural Resources will be held from 9:30 a.m. to 4:00 p.m. on the Museum grounds at **Mastodon State Historic Site.** Early Native Americans used stone, plant and animal materials to manufacture darts used to hunt mastodons at this location during the Ice Age. Artisans will replicate these processes, including fabricating spear points from stone, spear shafts from wood and cane, binding and cordage from fibers, atlatls from antler and wood, and assembling the finished hunting tools. Visitors are invited to throw spears using an atlatl at a mastodon target.

There is no charge for this outdoor event, but the museum has a $2.00 per adult admission fee.

Mastodon State Historic Site is located 20 miles south of St. Louis, on Interstate 55 in imperial, Missouri–the interstate highway is marked with signs to the historic site. For more information, call (314) 464-2976.

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First Annual

Great Basin Classic

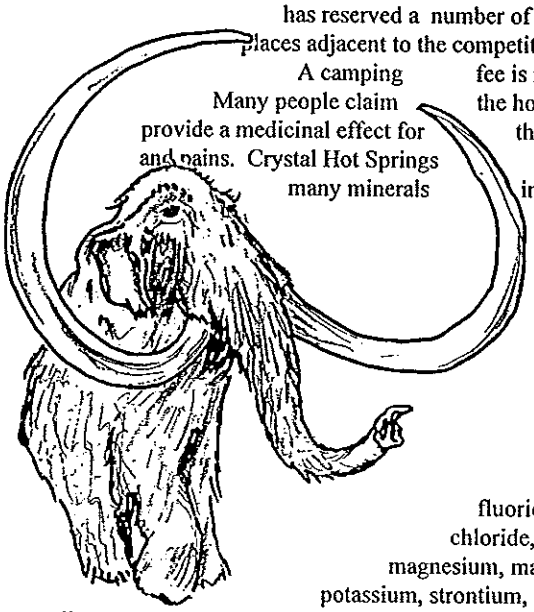
Atlatl Contest

Crystal Hot Springs, Honeyville, Utah.

May 2, 1998

Take exit 375 on I-15

WAA Director, Robert Hamilton has reserved a number of camping places adjacent to the competition area. A camping fee is required



Many people claim the hot springs provide a medicinal effect for their aches and pains. Crystal Hot Springs contain many minerals including: barium, calcium, fluoride, iron, chloride, lithium, magnesium, manganese potassium, strontium, sodium, silver, and sulfate and water temperatures range from 52 to 140 degrees, F. So come prepare for the worlds' largest natural hot and cold springs. Pool temperatures range from 85 to105 degrees. There will be a dutch oven dinner and post- throw soak.. For more information contact **Robert Hamilton, 5538 S. 1200 W. Ogden, Utah 84405, phone (801) 392-4172.**

WAA member Duane Spangler of Clinton, Washington, rated a half-page spread in *The South Whidbey Record* in February of this year. For this feature article, Duane described the atlatl technology and history, and demonstrated throwing techniques. Included were two photographs, a drawing, and great publicity for the World Atlatl Association, Inc. A retired school teacher, Duane is now a real estate salesman "hooked" on atlatls, and hooking others. Nice going Duane.

ISAC

As promised in the January edition of *The Atlatl*, here are the names of the highest scorers in 1997's International Standard Accuracy Competition:

Score	Equip.	Name	address
93-2X	M	Ray Strischek	OH, USA
88	M	Jim Gilligan	MI, USA
87-X	P	Pascal Chauvaux	Belgium
86	P	Steve Cabaraux	Belgium
85-2X	P	Gary Fogelman	PA, USA
85	P	Chris Pappas	NY, USA
84	P	Charlie Brown	CO, USA
84	P	Laurent Bernat	France
83-X	M	Lou Becker	MI, USA
83	P	Roger Klindt	NY, USA
82-X	P	Ray Madden	MO, USA
82-X	P	Chuck Butorajac	PA, USA
82	M	Jim Ray	MT, USA
82	P	Patrick Bidart	France
81	P	Jean Speckens	Belgium
81	P	Paul Gleckl	PA, USA
81	P	Alain Maxence	Belgium
80	P	Martin Street	Gr Britain
80	P	Barry Kimball	CO, USA
78	P	Bernard Ginelli	France
77	M	Chris Oberg	MI, USA
77	Unk.	Dick Lewis	USA
74-X	P	Christophe Griggo	France
74-X	M	Bob Perkins	MT, USA
74	M	Chris Small	MI, USA
74	P	Stephane Madelaine	France
73-X	M	Bob Berg	NY, USA
73	P	Alain Sellekaerts	Belgium
73	P	Russell Richard	WY USA
72	P	Sonja Souvenir*	Belgium
71	M	Quinn Pritchard	ID, USA
71	P	Didier Cocchi	Belgium
70-X	M	Ron Mertz	MO, USA
70-X	P	Robert Hamilton	UT, USA
70-X	P	Pierre Matheus	Belgium
70	P	Jurgen Junkmanns	Germany
70	P	Ken Wee	CO, USA
70		Richard Lyons	

* Lady thrower. M = Modern equipment P = Primitive equip.

The top female throwers, those with scores 60 and above are:

72	P	Sonja Souvenir	Belgium
66-X		Courtney Birkett	IA, USA
66-X	P	Aude Labarge	France
62	M	Susie Brown	CO, USA

ATLATL EVENTS AROUND THE WORLD - 1998

Jan.	31-Feb 1	Laragne , Hautes-Alpes, France. Contact: Pascal Chauvaux.*
Jan.	25	Fenton, MI - 11 a.m. MAA Euro-Style and ISAC. Contact: Phil Klimowicz (810) 750-1059 or Jim Gilligan (810) 231-2314.
Feb.	9-14	Winter Count, Arizona. Contact: Dave Wescott (208) 359-2400 or dwescot@aol.com
Mar.	1	Stand Alone International Standard Accuracy Contest, Ocotillo, CA. Contact Leni Clubb (760)358-7835.
Mar.	8	First Annual Alaska Atlatl Competition, Anchorage, Alaska. Contact: Richard Vanderhoek (905) 257-2456.
Apr.	4	April Fools Atlatl Throw, Home of WAA President, Charlie Brown, Arvada, CO. Contact Charlie Brown (303) 421-0035
Apr.	11-12	Les Eyzies-de-Tayac, Dordogne, France. Contact: Pascal Chauvaux.
Apr.	15-19	Valley of Fire State Park, Nevada. Contact: Leni Clubb (760) 358-7835.
Apr.	16-19	2nd Annual North Georgia Knap-in, Lutherwoods Campgrounds, northwest of Atlanta, GA. Contact Mark Bracken (770) 345-7305.
Apr.	17	Cajun Knap-in, Lake Cotille Recreation Area near Alexandria, LA. Contact Lloyd Pine (504) 926-5785.
Apr.	25-26	Ramoiul, Belgium. Contact Pascal Chauvaux.
May	1-3	Crystal Hot Springs Great Basin Classic, Honeyville, UT. Contact Robert Hamilton (801) 392-4172.
May	2	Annual Idaho Stqte Open Atlatl Competition at Celebration Park, Melba, ID. Contact Tom Bicak (208) 495-2745 or Dean Pritchard (208) 323-0293.
May	9	Primitive Skills Get-together, Greeley, CO. Contact Mike Foltmer (970) 339-5608
May	15-16	Fort Osage Knap-in and Primitive Weapons Contest, Ft. Osage, MO. Contact: Ron Mertz (314) 8222-2514.
May	23-24	Solutre, Saone et Loire, France. Contact: Pascal Chauvaux.
May	30	Paleo-Indian Spear Factory, Mastodon State Historic Site, Imperial, MO. Contact Nancy Smith (314) 464-2976.
May	30	Crepy-en-Volois, Oise, France. Contact: Pascal Chauvaux.
May	30	Pennsylvania Spring Fling in Ligonier, PA. Contact Chuck Butorajac (724/412) 238-6878.
Jun.	5-6	Flint Ridge Ohio WWA ISAC. Contact Ray Strischek (740) 592-1217 (nights).
Jun.	13	Meadowcroft Museum of Rural Life, Avella, PA. Contact Mark Kollecker (412) 587-3412.
Jun.	12-14	Franklin, PA Flintknapping PowWow Event. Contact Bob Berg, (607) 687-4064.
Jun.	12-14	Bois d'Arc Rendezvous, Goodman, MO in the Missouri Ozarks, hosted by Bo Brown, Strafford, MO. Contact Ray Madden (417) 781-0962
Jun.	19-21	Kilpisjarvi, Finland. Contact: Pascal Chauvaux.
Jun.	19-21	Eastern Frontier Days Festival at Penn's Cave, PA. Contact Bob Berg (607) 687-4064
Jun.	19-21	Fremont Indian State Park, UT. Contact: Pete Weimer (801) 527-4631.
Jun.	27-28	World Open Atlatl Contest, Fort Caspar Museum, Casper, WY. Contact: Rick Young (307) 235-8462.
Jul.	10	Annual Meeting, World Atlatl Association, Arvada, CO. Contact President Charlie Brown (303) 421-0035.
Jul.	10-11	Aurora Spear Sling Fling Thing, Aurora, CO. Contact Bill Tate (303) 755-5591 (This is a corrected date)
Jul.	11-12	Sare, Pyrenees Atlantiques, France.. Contact: Pascal Chauvaux.
Jul.	13-18	Sundog Primitive Skills Workshop and Atlatl Contest, Bow Valley Park, Kananaskis County, Alberta, Canada. Contact Rick Woolcott, Jr. Forest Warden, (403) 297-8851.
Jul.	18-19	Tarascon, Ariege, France. Contact: Pascal Chauvaux.
Jul.	18	Tenth Annual Montana Mammoth Hunt. Contact: Troy Helmick (406) 266-3398.
Jul.	25-26	Northern Plains Indian Culture Fest, Stanton, ND. Contact (701) 745-3309.
Jul.	25-26	Beaune, Cote d'or, France. Contact: Pascal Chauvaux.
Aug.	1-2	Le Mas d'Azil, Ariege, France. Contact: Pascal Chauvaux.
Aug.	5-6	Lourdes (Hautes-Pyrenees, France. Contact Pascal Chauvaux.
Aug.	8-9	Tautavel, Pyrenees Orientales, France. Contact: Pascal Chauvaux.
Aug.	22-23	Ahlman's Shooters Round-up and Atlatl Competition., Morristown, MN. Contact Jerry Schaefer (507) 243-3300.
Aug.	28-31	Ohio Atlatl Standard Accuracy and WAA ISAC, Sat. & Sun. Contact Ray Strischek (740) 592-1217 (nights).
Aug.	30-31	Eastern Seaboard Atlatl Competition (ESAC), Letchworth State Park, Castile, NY. Contact Bob Berg (607) 687-4064.
Aug.	30-31	Ohio Atlatl Association Competition, Flint Ridge Memorial Museum & Park, Ohio. Contact Ray Streischek (614) 592-1217.
Sep.	6	Oerlinghausen, Germany. Contact: Pascal Chauvaux.
Sep.	12-13	Neanderthal, Germany. Contact: Pascal Chauvaux.
Sep.	13-19	Rabbitstick, Idaho. Contact: Dave Wescott (208) 359-2400.
Sep.	19	Pennsylvania State Atlatl Championship, Ligonier, PA. Contact Chuck Butorajac (724/412) 238-6878.
Sep.	20	Samara, Somme, France. Contact: Pascal Chauvaux.
Sep.	26-27	Nemours, Seine et Marne, France. Contact: Pascal Chauvaux.
Oct.	3-4	Cahokia Mounds Atlatl Competition, E. St. Louis, IL. Contact: Ron Mertz (314) 822-2514.
Oct.	?	Coire, Grisons, Switzerland. Contact: Pascal Chauvaux.
Nov.	?	Plate Taille, Belgium. Contact: PascalChauvaux.

*Note, our contact for all Europoean Spearthrowing Championship contests is Pascal Chauvaux, Rue Au dela de l'Eau, 3 B-5630, Cerfontaine, Belgium - Telephone: (32) 71 64 34 16.

Please send us dates of atlatl events for inclusion here, and keep submitting your reports, cartoons and suggestions to us. Your editor can be reached by FAX at (303) 755-1145, or mail at 1390 S. Paris Court, Aurora, CO 80012, phone (303) 755-5591, or by e-mail: atlatl@mho.net

EARLY EUROPEAN CONTEST RESULTS

By Pascal Chauvaux

Contrary to previous years, our winter contest was a dry contest–no snow at all. It seems that we will not have winter in Europe. (*Do you suppose El Nino is at work even there? Ed.. comment*) The site chosen this year was Laragne, a town of 4,000 inhabitants just at the Provence side of the Alps.

Thirty-eight participants were present for the first of our 19 European atlatl events. Our friends from an Archaeological Association, Les Amis de la Prehistorie, brought their exhibit dedicated to primitive tools. Some were there for a primitive skills show–flintknapping and fire production.

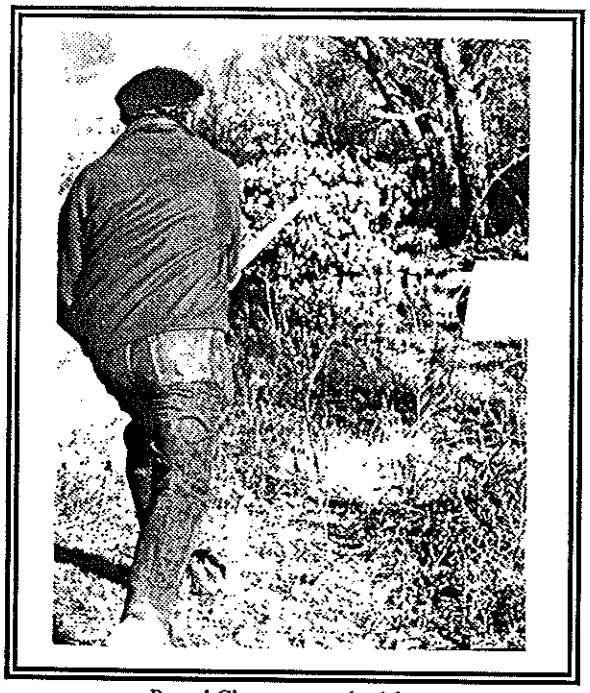
Alain Gros-Piron of France at the 12 meter target.

Saturday, our schedule was full. In the morning the tourist bureau of Laragne welcomed the contestants, and afternoon saw the primitive bow contest in an unused quarry. In the evening a meal, a Provençal speciality, was held in a vacation center in Barret-le-Bas, a little lost town in the middle of nowhere. At the end of the party, we got a big surprise–dances and singing by a Provençal folk band called "Dansaires du Buech". Around midnight we sought our accommodations–four to five beds to a room.

The night was short as breakfast was served at 7:30 a.m. and we were ready at 9:00 a.m. for the 30-target course held in the same quarry as the bow competition. Obviously, a contest must have a winner, although I think everybody was a winner. Scoring was as follows:

1st place	Pascal Chauvaux	39.47	Belgium
2nd place	Laurent Bernat	23.80	France
3rd place	Stephane Madelaine	20.80	France

Late in he morning the ISAC was held. High scores are listed elsewhere in this issue. After dinner a big prize-giving ceremony brought everybody together again. The tourism office and some traders offered reqards to each young contestant–balloons, CDs, key-rings, comic strips, and to the top overall



Pascal Chauvaux at the 16 meter target.

winners in bow and spearthrowing, local specialities of wine, meat, pie, jam, and crystallized fruit. The WAA award went to Pascal Chauvaux (sorry, I am a collector!) At 4:00 p.m. we left each other with regret, some with as much as 1000 kilometers to drive. Of course, Laragne will long remain in our memories. As the reader can see, a European spearthrower contest is more a weekend recreation that we do so that we can see other things and taste other foods, and to live differently...

Talk About Pressure – The Untold Story of the 93-2X

by Chuck Butorajac

For whatever reason, after throwing the fourth throw at the 20 meter ISAC target at Flint Ridge, Ohio last August 31st, everyone thought it was the 5th throw. All cheered Ray Strischek as they came off the range, knowing that he did really well. They were then told to go back onto the range to make their fifth and final throw. At this point Ray's score was 83-X. With his usual calmness, Ray pulled it off with a perfectly thrown 10-X to give himself an overall score of 93-2X for the top score for 1997. What a finish! The place went wild. We all knew we had just witnessed something very special.

Ray Strischek being crowned. Darts show his award-winning grouping.

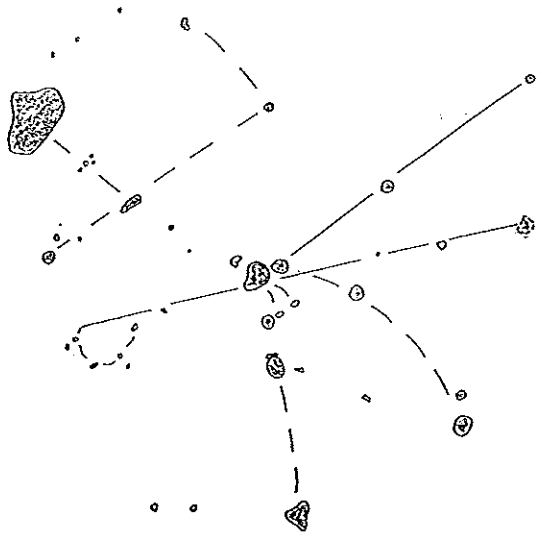
Wisconsin Atlatl News

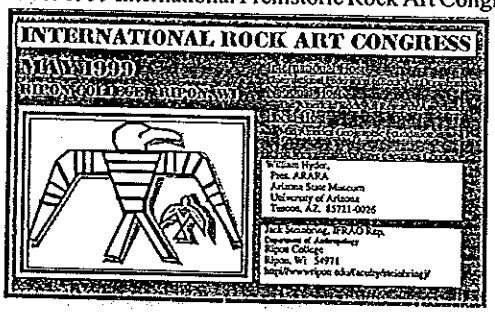
by Mary Riemersma

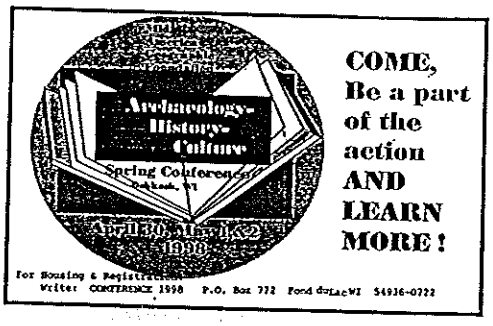
Atlatl demonstrations continue to be presented by WAA member Lenny Riemersma in Wisconsin. Lenny, a K-8 Physical Education instructor, includes a presentation of the atlatl before he begins a study unit on archery. He also has been requested to demonstrate at various functions throughout southeastern Wisconsin. One was at a field trip for the University of Wisconsin, Fond du Lac course titled, *The Magic Landscape: Prehistoric Shrine Sites of Southeastern Wisconsin.* This course is a summary of instructor Herman Bender's 11-year fieldwork and research of prehistoric Native American rock art in the form of petroglyphs and petroforms. One of the research sites, the 60 foot (18 meter) Starman, about 3,500 years old, is a boulder petroform site.

Herman Bender is one of the founders of the organization, Mid-America Geographic Foundation (MAGF), and extends an invitation to interested individuals to attend MAGF's Spring 1998 conference. MAGF is also the local host to the 1999 International Prehistoric Rock Art Congress.

The Starman – is he holding an atlatl???







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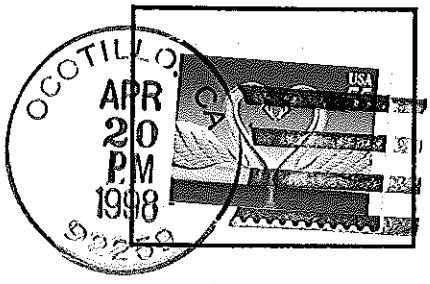
LENI CLUBB
P. O. BOX 56
OCOTILLO, CA 92259 USA

The WORLD ATLATL ASSOCIATION, Inc.



JOHN WHITTAKER (9/98)
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GRINNELL, IA 50112-0806

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