



“If I would study any old, lost art, let us say, I must make myself the artisan of it...”

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ATLAT VS. BISON AGAIN, Part 1
By John C. Whittaker and Devin Pettigrew



Figure 1. Hafted Clovis point, dyed with methyl violet.

We have had people ask why we would bother to continue doing carcass experiments, sort of an “if you’ve shot one bison, you’ve shot ‘em all” attitude. Any hunter or experimenter knows this is not the case. In experiments with many variables, you need many trials to test the different variables and to reduce the effects of random errors. Prehistoric hunters did not have the tools we moderns use to observe and understand many complex variables at once, but still built up years of their own and others’ hunting experience to discover what worked best. Even in modern experiments, we test new ideas and observe the effects of small changes that improve our understanding or become



Figure 2. Some of the dart points we used, shown here after the experiment,

the

basis for further experimentation. For instance, in testing stone point penetration, one of the things we continually notice is the importance of carefully-crafted hafting of the shaft, especially in seating different forms of points in appropriate foreshafts (Figure 1). This is one part of the enormous amount of work required to prepare for one of these experiments: weeks of gathering points, hafting them, documenting them with measurements and photographs, and organizing the rest of the projectile arsenal and recording equipment. Pettigrew did almost all of this work, with the exception of making the points, which came from a number of knappers, including Whittaker (Figure 2). For the bison experiments so far we have made a total of 272 shots with darts and arrows and used a total of 169 knapped points mounted on separate foreshafts.



Figure 3. Experimental set-up.

We previously performed bison carcass experiments on a 23-year-old cow in 2020 and a 2-year-old bull in 2022 (see Whittaker and Pettigrew 2020; Pettigrew et al. 2023). In July 2023 we performed a third bison experiment, the focus of this article. Finding an animal and a place to work is another of the logistic problems of naturalistic experiments. This bison was one of a herd raised for meat by Eagle’s Wing Ranch in Colorado (<https://www.eagleswingnaturalbison.com/>). The two-year-old male, weighing 900-950 lbs, was humanely killed by the helpful rancher, Jim Beauprez, immediately before our experiment. We set it up resting on its belly, legs tucked under, as close to a natural resting posture as possible

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(Figure 3). As in our first experiment (see The Atlatl Fall 2020), we used two high speed cameras to record throws, but this time we switched the roles of the two cameras. The [Casio EX-F1](#) was set close to the thrower and aimed at the bison to record the flight and impact of the darts at 600 frames per second, while the more powerful Chronos 1.4 camera recorded the impact of the dart or arrow from near the bison and perpendicular to the flight path at over 3000 fps. Each projectile point was individually hafted on a foreshaft and fitted to one of several mainshafts. In addition to other photos and measurements, all hafted points were photographed for 3d modeling before use, and the points were dyed with methyl violet to make damage more visible (Figure 1). After each impact, the location of the hit was photographed and the depth of penetration and any other observations of damage to the point or bison were recorded. The skeleton is currently being cleaned by Artworks Taxidermy (Broomfield, CO) for analysis of impact damage and butchering marks on the bones.

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Figure 4 shows the kind of data produced by the cameras: a screen capture from the Tracker video analysis program showing a shot with the Clovis point shown in Figure 1, which penetrated towards the back of the thorax. The auto-tracker function in Tracker works to automatically place velocity markers over the reflective targets on the dart shaft, removing subjectivity from placing them manually (a big improvement allowed by the higher resolution of the Chronos camera). The video is calibrated using the camera's frame rate and a scale placed on the dart shaft. For this shot, and many

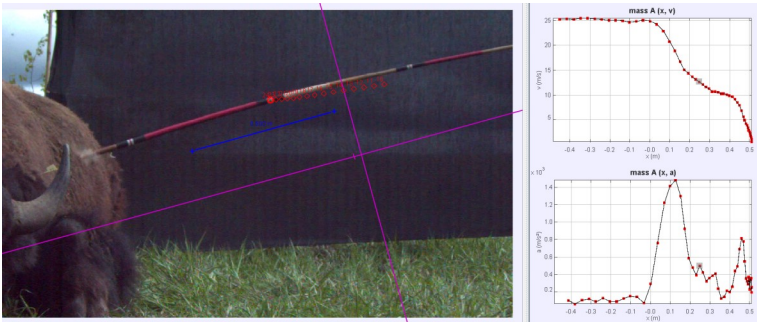


Figure 4. Tracker screen-shot of a throw with the Clovis point in Figure 1.

others like it, the most rapid drop in velocity (upper graph, y-axis) occurs as the point penetrates the skin. The x-axis tracks the distance of the penetration event in meters, with zero set to the moment of initial skin contact (configured via placement of the pink axis). The acceleration data (bottom graph) shows two high peaks in deceleration: The first begins as the skin stretches on impact and the point begins cutting through it. This peak reaches its climax when the haft area pushes through the skin, ca. 10 cm into the carcass. The second peak occurs deeper in the carcass, ca. 46 cm, and probably indicates the moment when the point hit the skin on the opposite side of the bison. At this juncture, penetration ceased and the remaining velocity and acceleration values reflect vibration of the dart shaft. Although this dart struck with a whopping 106 Joules of kinetic energy, by the time it encountered the opposite wall of the torso it retained only 15 J. Most of its energy (ca. 60 J) was used to penetrate the hide. Points that were more efficient at penetrating hide lost less energy, but also tended to be less durable when impacting bone.

We focused on heavier darts (ca. 200-350 g) in this experiment than with the first bison.. This was good, because impact forces to cut through skin in this experiment were also higher. In many shots, clouds of dust can be seen in the high speed video when the points cut through the outer hide. Pettigrew took a 20x20cm piece of skin, washed it, and soaked it in water to remove the wool. Once the sediment settled and the water evaporated, and the wool slipped from the skin and was dried in the sun, this resulted in 20 g of sediment and 40 g of wool from the skin. So unlike the previous two experiments, the bison still had most of his winter coat, which clearly had a lot of sediment embedded in it. This seems to have formed a substantial barrier to penetration, and probably the reason for a lot of the bounces we experienced. Like the previous bull, the skin itself was ca. 4 mm thick.

Darts that were able to penetrate the skin but struck the shoulder continued to experience high impact forces and were unable to penetrate beyond the shoulder, unsurprisingly. Many darts cut the edges of ribs and continued on into the animal, but those that struck bone directly were often severely damaged or broke their hafts, and only one shot broke a rib.



Figure 5. Measuring penetration – 29 cm with this point.

But darts that cut through skin and penetrated into the thorax or abdomen often penetrated significantly into the body cavity, stopping at the skin or ribs on the opposite side of the torso. Unlike in our previous two experiments, no darts penetrated all the way through this bison, but 30-40 cm of penetration was common, surely killing shots in a hunt (Figure 5).

Kinetic energy is what allows a dart to cut through and penetrate a solid target, but excellent dart mechanics, including straight flight, strength, and sleekness of the shaft, are also key to achieving lethal penetration. The sharpness of the point and durability of the haft are also crucial. Our Tracker analyses indicate that the most substantial deceleration often occurs when the haft area

encounters the skin after the point has entered. This demonstrates that hafts that are both aerodynamic and strong are essential for hunting big burly animals. These factors may outweigh really high kinetic energy for dart lethality.

Haft damage, haft failure, and points that were not sufficiently durable and sharp resulted in several shots that bounced or achieved only shallow penetration. The thick layer of dirty wool was a substantial barrier for imperfect points and foreshafts (Figure 6). Any crevices between the point and its foreshaft notch caught on the wool. On some shots we could see that wool had been pulled into the wound. Careful application of pitch around the end of the foreshaft to make a smooth transition between point and shaft was important. When the pitch ramps became damaged after the first shot, penetration could drop or the point simply bounce out on the



Figure 6. Penetration inhibited by bison hair.

next shot. We used the usual ~50% pine resin to 25% each of ground charcoal and elk droppings for this mix. Stronger pitch mixtures are something to look into.

Thinking about quality of the points and hafting also leads us to reflect on some of our ideas about prehistoric technology. We should expect that hunters who relied on their weapons for survival would become expert at making them, and indeed some of the prehistoric atlatl finds from the SW are very well crafted. Another example might be the Inuit Arctic technology in early historic times, where hunting gear, clothing, and other technology is among the most sophisticated and carefully built you can find anywhere. On the other hand, it is easy to notice that stone points all across the continent are made with many levels of skill, from

crude and ugly to masterpieces of delicate work. So we can't expect that all prehistoric equipment was equally well-made, and perhaps we should test some examples that are not so good as well some made to our highest standards.

It's important to note that our results are not necessarily representative of all prehistoric equipment through millennia of human history, and we are still learning. Nevertheless, our experiments on different carcasses show that the target has a dramatic impact on how well any given projectile will function. Hunting big animals like bison would certainly create a strong impetus to optimize one's atlatl and dart equipment, and it is certainly feasible for smart and skillful hunters to routinely kill large animals with well-designed atlatls and darts (Figure 7).

The team for this experiment included the authors, Donny Dust (<https://www.donnydust.com/>), Bobby Marshall (<https://www.themountaininsidepodcast.com/about/>), Autumn Cool, and Marissa Crise. Flintknappers who made points for the bison experiments included the authors, Adam Lageveen, Brian Sortino, Donny Dust, Ed Mosher, Evan Phillips, Gary Morgan, Gerald Pettigrew, Jake Webster, James Parker, Jim Schroeder, Kevin Verhulst, Mike Evans, Silas Chapman, Steve Saffold, Tom Mills, Tony Soares, William Harrison, and Zack Hansen.



Figure 7. Butchery with stone tools. All undamaged meat was recovered. Team members Dust, Pettigrew, Marshall, Whittaker.

Pettigrew was recently interviewed by Marshall about the experiments for The Mountain Side Podcast (episode 136).

References

Whittaker, John C., and Devin Pettigrew
2020 Atlatl vs Bison. *The Atlatl* 33(4): 1-4.

Pettigrew, Devin B., Justin Garnett, Caden Ryals-Luneberg, and Eric A. Vance
Terminal ballistics of stone-tipped atlatl darts and arrows: Results from exploratory naturalistic experiments. *Open Archaeology* 9: <https://doi.org/10.1515/opar-2022-0299>

Part 2 of this article will be featured in the Winter 2024 Edition of *The Atlatl*

WAA EVENT CALENDAR

DEADLINES FOR THE NEWSLETTER

Monday January 1, 2024 for event submission for Winter 2024

Monday January 8, 2024 for submissions for the Winter 2024 Edition of the Newsletter

Please Note: In these times of uncertainty (weather events, pandemic, etc.) events may be *cancelled or rescheduled*. If event changes occur, please keep Deb Andrews informed. Also *check the website Event List for cancellations or changes*. In addition, contact information for event leaders can be found to verify the event schedule.

NORTH AMERICA

DATE/STATE	EVENT
Thu 12 Oct - Sun 15 Oct 2023 Washington	Fall Camp Thu 12 Oct 2023 - Sun 15 Oct 2023 at 00:00 - Fall Camp: Valley WA 99181 - Contact James Turner (970) 946-2096 el_lobo_solo@hotmail.com
Fri 13 Oct—Oct 15 2023 New York	Among the Hills Shoot Fri 13 Oct 2023 - Sun 15 Oct 2023 at 00:00- Among the Hills: Nunda NY - ISAC & locals. Contact: text Douglas Bassett (585) 313-7111 to confirm details and your attendance.
Sat 14 Oct 2023 Wisconsin	Horicon Marsh Archeological Festival Sat 14 Oct 2023 - Sun 15 Oct 2023 at 00:00- Horicon Marsh WI: Horicon Wisconsin 53032 - Demos and ISACs both days. Contact Glen Oechsner (920) 533-5039 for more information.
Sat 14 Oct 2023 Ohio	Mike's Event **LOCATION CHANGE** Sat 14 Oct 2023 at 09:00 - 13:00 **Due to Mike's untimely passing, the location of this event has changed to Deb Andrews' house, 2041 Reynolds Ave., Albany OH 45710. OAA will host a small event at the home of Mike Lester. ISAC and Ohio locals will be thrown. Contact Ray Strishek at ohioatlatl@hotmail.com or 740-331-4351 for more information.
Fri 20 Oct - Sun 15 Oct 2023 New York	Among the Hills Shoot Fri 20 Oct 2023 - Sun 22 Oct 2023 at 00:00- Among the Hills: Nunda NY - ISAC & locals. Contact: text Douglas Bassett (585) 313-7111 to confirm details and your attendance.
Fri 20 Oct - Sun 22 Oct 2023 Wisconsin	Plank Road Rendezvous Fri 20 Oct 2023 - Sun 22 Oct 2023 at All Day Central - Sheboygan County Museum: Sheboygan Wisconsin 53081 - Nathan Chisholm nathan.chisholm@sheboygancounty.com 9204581103 ext. 7105 Enjoy the beautiful sights and historic buildings on the grounds of the Sheboygan County Museum! Events will be held throughout the 3 day weekend long event!
Sat 21 Oct - Sun 22 Oct 2023 Wisconsin	W.A.S. Fall Gathering, Octoberfeast Sat 21 Oct 2023 - Sun 22 Oct 2023 at 00:00- Dundee Sportsman's Club: Campbellsport Wisconsin 53151 - 21 October - ISAC, European Round, 3-D Targets, and the competitions 22 October - ISAC only in the morning Contact Lenny Riemersma (920) 917-0335 or wistalatl@gmail.com
Sat 21 Oct 2023 Ohio	Mike's Event #2 **LOCATION CHANGE** Sat 14 Oct 2023 at 09:00 - 13:00 **Due to Mike's untimely passing, the location of this event has changed to Deb Andrews' house, 2041 Reynolds Ave., Albany OH 45710. OAA will host a small event at the home of Mike Lester. ISAC and Ohio locals will be thrown. Contact Ray Strishek at ohioatlatl@hotmail.com or 740-331-4351 for more information.
Fri 27 Oct - Sat 28 Oct 2023 Ohio	Ohio ROAR Days Fri 27 Oct 2023 - Sat 28 Oct 2023 at 00:00 - Zaleski State Forest/Lake Hope St. Park: Zaleski OH - The Ohio Atlatl Association will provide instruction and host competitions including the ISAC and Ohio Locals at ROAR (Rural Ohio Appalachia Revisited) at the Hope School House. Set-up will occur on Friday, Oct.27 after noon, with ISAC and Ohio locals until dark, and all-day Saturday from 9 am to 4 pm. Contact Ray Strisheck (ohioatlatl@hotmail.com or 740-331-4351) or Steve Barnett (barnz@juno.com or 740-698-6553) for more information.
Fri 27 Oct - Sun 29 Oct 2023 New Hampshire	Stay Calm Atlatl On Fri 27 Oct 2023 - Sun 29 Oct 2023 at 00:00 - Tobin's: Moultonborough New Hampshire 03254 - At the Tobin Residence, Moultonborough ISAC and fun throw, we'll share soup and lots of laughs Contact Lynn at 603-707-2436, Harmonycreek@icloud.com
Sat 4 Nov - 2023 New York	Indoor Shoot Sat 4 Nov 2023 at 10:00 - 12:00- Jim's Pro Shop: Shortsville New York 14548 - Jim's Pro Shop - Shortsville, New York ISAC and locals. Range Fee \$12. 10 am to noon or so. Exit 43 off Thruway and south on 21 to rte 96, 2 miles west (sign will say north) to just past blinking light for city rd 28. The block bldg (4885 Route 96) is on the left. Contact: RSVP to Douglas Bassett (585) 313-7111; dglsbassett@gmail.com
Sat 11 Nov 2023 Missouri	ISAC and Rabbit Hunt (date change) Sat 11 Nov 2023 - Sun 12 Nov 2023 at 10:00 - 07:00- Horse Around Ranch Truxton MO: Truxton Missouri 63381 - Come throw and ISAC and Rabbit Hunt for the day! All equipment provided...if you're under the weather or not feeling well please wait until the next throw!!

EUROPE

DATE/STATE	EVENT
Sat 21 Oct—Sun 22 2023 Nouvelle-Aquitane France	Brassempouy <i>Sat 21 Oct 2023 - Sun 22 Oct 2023 at 00:00- La Maison de la Dame à Brassempouy: Brassempouy Landes Nouvelle-Aquitaine 40330 - France</i> European championship of prehistoric weapon of Brassempouy Two rounds of Isac contest will be taking place during this week-end. On Saturday 21st at 5 and half p.m and Sunday 22th at 3 p.m at the village's school . Contact Lacoste Matthieu contact@prehistoire-brassempouy.fr 0633681295 for more information.
Sun 22 Oct 2023 No Location Listed	Campeonato europeo de tiro prehistórico <i>Sun 22 Oct 2023 at 17:00 - 19:00</i> Tirada por la tarde dentro de la manga de Valgañón del Campeonato europeo de tiro prehistórico

RESULTS FOR THE 2023 ELECTION

Results Compiled and Announced by Loru Majorsky, WAA Election Administrator

Executive Secretary

Debbie Andrews — Ohio

Non-US Board of Director

Ismael Yahemdi — France

US Board of Directors

Margie Takoch — Ohio

Steve Barnett — Ohio

Dave Patterson — Missouri

Congratulations to the officer and board of director members elected in 2023. In addition *The Atlatl* acknowledges and thanks all members who ran for office this year. Your continued support for WAA is appreciated.

International Standard Accuracy Contest (ISAC) Scores

2023 ISAC Results for Men (70 and Above)

PLAC E	TIE PLACE MENT	SCORE	NAME		CITY OF RESIDENCE	STATE/ COUNTRY	DATE OF THROW	CONTEST
1		96xxx	Douglas	Bassett	Warsaw	NY	8/27/2023	Eastern Seaboard, Letchworth St Park, NY
2		95x	Ray	Strischek	Athens	OH	6/3/2023	Athens Library, Athens, OH
3		94x	Marlin	Bassett	Warsaw	NY	6/3/2023	Among the Hills, Nunda, NY
4		93	Mathieu	Lacoste	Amou	FRANCE	8/12/2023	Le Mas d'Azil, FRANCE
5		91x	Kevin	Ashley	Estill Springs	TN	10/6/2023	Old Stone Fort, Manchester, TN
5		91x	Dave	Patterson	Ashland	MO	4/15/2023	Hermann Youth Day, Hermann, MO
7		91	Ryan	Grohsmeier	Addison	NY	6/3/2023	Among the Hills, Nunda, NY
8		89xxx	Jim	Gnapp	Ladysmith	BC	9/14/2023	Rabbitstick, Rexburg, ID
9		88x	Jordan	Ashley	Winchester	TN	6/2/2023	Old Stone Fort, Manchester, TN
10		88	Jim	Fisher	Grand Island	NY	4/15/2023	Jim's Pro Shop, Shortsville, NY
11		87xx	Christian	Carriere	Montauban	FRANCE	7/23/2023	Arudy, FRANCE
12		87x	Carter	Ashley	Estill Springs	TN	6/3/2023	Old Stone Fort, Manchester, TN
13		87x	Claude	Castan	Toulouse	FRANCE	8/13/2023	Le Mas d'Azil, FRANCE
14		87	Fritz	Mischler	Taufellen	SWITZERLAND	7/29/2023	Cazzago Brabbia, ITALY
15		86	Luis Angel	Breton	Valganon	SPAIN	8/13/2023	Le Mas d'Azil, FRANCE
16		86	Ansgar	Lukas	Munich	GERMANY	8/6/2023	Archaeopark Boario, ITALY
17		86	Joachim	Martz	Engen	GERMANY	9/24/2023	Val Senales, ITALY
18		85x	Mike	Glenn	Lucasville	OH	6/24/2023	Serpent Mound, Peebles, OH
19		85	Andy	Majorsky	Derry	PA	6/18/2023	Meadowcroft, Avella, PA
20		84x	Tom	Tobin	Moultonborough	NH	7/28/2023	Moultonborough, NH
21		84	Michael	Frank	Woodbridge	VA	6/18/2023	Meadowcroft, Avella, PA
22		84	Tim	Hall	Indianapolis	IN	8/27/2023	Post Steve's Dam, Pomeroy, OH
22		83x	Greg	Maurer	Vergennes	VT	6/3/2023	Westbrook, NH
24		83	Jurgen	Junkmanns	Erfstadt	GERMANY	9/22/2023	Valganon, SPAIN
25		83	Randy	Whaley	Leon	WV	8/12/2023	Steve's Dam, Pomeroy, OH
26		82	Eric	Botte	Druelle	FRANCE	9/22/2023	Valganon, SPAIN
27		81x	Steve	Barnett	Pomeroy	OH	8/27/2023	Post Steve's Dam, Pomeroy, OH
27		81x	Jacques	Bohere	Tarascon	FRANCE	8/5/2023	La Chapelle aux Saints, FRANCE
29		81	Juan Luis	Navarro Perez	Benahadux	SPAIN	4/22/2023	Benahadux, Spain
30		80x	Ken	Faucher	Dover	NH	7/29/2023	Moultonborough, NH
31		80x	Alain	Lacoste	Toulouse	FRANCE	8/5/2023	La Chapelle aux Saints, FRANCE
32		80	Luis	Angel Breton	Valganon	SPAIN	7/23/2023	Arudy, FRANCE
33		80	Antonio	Fernandez	Benahadux	SPAIN	4/22/2023	Benahadux, Spain
34		80	Charles	Swanson	Knoxville	TN	10/7/2023	Old Stone Fort, Manchester, TN
35		80	James	Turner	Spokane	WA	5/28/2023	Between the Rivers, Valley, WA
36		80	Ismael	Yahemdi	Nice	FRANCE	7/15/2023	Renteria, SPAIN
37		79xx	Lenny	Riemersma	Cascade	WI	9/1/2023	Mattoon Rendezvous, Mattoon, WI
38		79	Mark	Bracken	Sagerstown	PA	9/2/2023	Coshocton, OH
39		79	Pete	Piraino	Nunda	NY	8/27/2023	Eastern Seaboard, Letchworth St Park, NY
40		78x	David	Schuster	Bobing	GERMANY	9/17/2023	Bad Buchau, GERMANY
41		78	Cedric	Claustre	Escalavens	FRANCE	8/12/2023	Le Mas d'Azil, FRANCE
42		78	Paul	Coanta Ciprian	Guarnizo	ROMANIA	9/16/2023	Puente Viesgo, SPAIN

PLAC E	TIE PLACE MENT	SCORE	NAME		CITY OF	STATE/ COUNTRY	DATE OF THROW	CONTEST
43		78	Jerry	Nevins	Jefferson City	MO	3/25/2023	Horse Around Ranch, Truxton, MO
44		78	Angelo	Robledo	Dublin	IRELAND	4/22/2023	Benahadux, Spain
45		78	Jack	Rowe	Sayre	PA	4/21/2023	Earth Day Weekend, Elmira, NY
46		78	Brendan	Wilson	St Louis	MO	4/15/2023	Hermann Youth Day, Hermann, MO
47		77	Rafael	Guirado Garcia	Benahadux	SPAIN	4/22/2023	Benahadux, Spain
48		77	Steve	Hall	Louisville	KY	6/3/2023	Athens Library, Athens, OH
49		77	Scott	Van Arsdale	Otego	NY	8/24/2023	Eastern Seaboard, Letchworth St Park, NY
50		76	Unknown	Barnes	Florence	MT	9/12/2023	Rabbitstick, Rexburg, ID
51		76	John	Whittaker	Grinnell	IA	9/21/2023	Bois d'Arc, Greenfield, MO
52		76	Gerhard	Wiesler	Puch b Weiz	AUSTRIA	9/17/2023	Bad Buchau, GERMANY
53		75	Mike	Caldwell	Mayfield Hts	OH	9/16/2023	Pawpaw Festival, Albany, OH
54		75	Rodger	Klindt	Dexter	NY	8/27/2023	Eastern Seaboard, Letchworth St Park, NY
55		75	Don	Roberts	Toronto	OH	6/17/2023	Meadowcroft, Avella, PA
56		74x	Gordy	Behrendt	West Bend	WI	4/23/2023	Ojibway Bowhunters, New Berlin, WI
57		73	Fabrice	Brutus	Nantes	FRANCE	8/5/2023	La Chapelle aux Saints, FRANCE
58		72	Charles	Bracken	Cochranton	FL	2/18/2023	Silver Springs, FL
59		72	Juan Jose	Girado Garcia	Benahadux	SPAIN	4/22/2023	Benahadux, Spain
60		72	Johannes	Schoroth	Leverkussen	GERMANY	5/28/2023	Saint Hubert, BELGIUM
61		71	Frank	Lukes	West Lafayette	IN	7/29/2023	Tim Hall's House, Indianapolis, IN
62		71	Kurt	Mischler	Brugg	SWITZERLAND	9/17/2023	Bad Buchau, GERMANY
63		71	Owen	Wilkens	Newport Beach	CA	3/12/2023	Santiago Park, Santa Ana, CA
64		70	Gary	Nolf	Westbrook	NH	6/2/2023	Westbrook, NH

2023 ISAC Results for Women (50 and Above)

PLACE	TIE PLACE MENT	SCORE	NAME		CITY OF RESIDENCE	STATE/ COUNTRY	DATE OF THROW	CONTEST
1		79	Martha	Blair	Nunda	NY	7/8/2023	Among the Hills, Nunda, NY
2		78x	Sue	Mercer	Attica	NY	4/29/2023	Daffodil Fest, Candor, NY
3		77	Lori	Majorsky	Derry	PA	9/1/2023	Coshocton, OH
4		77	Maren	Petersen	Erfstadt	GERMANY	9/22/2023	Valganon, SPAIN
5		76x	Emily	Weaver	Mt Morris	NY	5/19/2023	Among the Hills, Nunda, NY
6		76	Vicki	McConnell	Jordan Valley	OR	9/4/2023	WAA Annual Meeting Jordan Valley, OR
7		76	Laure	Pinaquy	Bayone	FRANCE	8/5/2023	La Chapelle aux Saints, FRANCE
8		75	Anita	Lukes	West Lafayette	IN	6/24/2023	Serpent Mound, Peebles, OH
9		74	Priscile	Lacoste	Tarbes	FRANCE	8/12/2023	Le Mas d'Azil, FRANCE
10		72	Amandine	Devie	Fagnieres	FRANCE	5/28/2023	Saint Hubert, BELGIUM
11		72	Leilani	England	St Louis	MO	3/25/2023	Horse Around Ranch, Truxton, MO
12		72	Marlen	Mischler	Taufellen	SWITZERLAND	7/30/2023	Cazzago Brabbia, ITALY
13		70x	France	Fenié	Montauban	FRANCE	8/5/2023	La Chapelle aux Saints, FRANCE
14		69	Ursula	Rass	Nidau	SWITZERLAND	9/24/2023	Val Senales, ITALY
15		69	Dawn	Wagner	Truxton	MO	3/25/2023	Horse Around Ranch, Truxton, MO
16		66	Margie	Takoch	Wintersville	OH	9/22/2023	Tim Hall's House, Indianapolis, IN
17		66	Maria	Villotti	Dermont	PA	6/17/2023	Meadowcroft, Avella, PA
18		65x	Nisa	Holbrook	Charleston	WV	9/16/2023	Pawpaw Festival, Albany, OH
19		61	Emilie	Huc-Claustre	Escalavens	FRANCE	8/13/2023	Le Mas d'Azil, FRANCE
20		61	Sue	Piraino	Nunda	NY	7/29/2023	Among the Hills, Nunda, NY

2023 ISAC Results for Women (50 and Above)

PLACE	TIE PLACE MENT	SCORE	NAME		CITY OF	STATE/ COUNTRY	DATE OF THROW	CONTEST
21		60	Melissa	Dildine	Sayre	PA	4/21/2023	Earth Day Weekend, Elmira, NY
22		60	Jennie	Flint	Dalton	NY	6/3/2023	Among the Hills, Nunda, NY
23		59	Debbie	Andrews	Albany	OH	8/12/2023	Steve's Dam, Pomeroy, OH
24		55x	Coralie	Anglade	Arsac	FRANCE	8/5/2023	La Chapelle aux Saints, FRANCE
25		55	Francoise	Agneray	Montauban	FRANCE	9/23/2023	Valganon, SPAIN
26		53x	Isabelle	Meric	Toulouse	FRANCE	8/12/2023	Le Mas d'Azil, FRANCE

2023 ISAC Results for Youth (40 and Above)

PLACE	TIE PLACE MENT	SCORE	NAME		CITY OF RESIDENCE	STATE/ COUNTRY	DATE OF THROW	CONTEST	AGE
1		59x	Tom	Lukas	Munich	GERMANY	9/17/2023	Bad Buchau, GERMANY	12
2		49	Talon	Ashley	Estill Springs	TN	6/2/2023	Old Stone Fort, Manchester, TN	12
3		40	Emma	Lapides	St Louis	MO	9/16/2023	Graham Cave State Park, MO	13



WAA Annual Meeting in Jordan Valley, Oregon – September 1 – 4, 2023



By Anita and Frank Lukes

The Annual Meeting for the World Atlatl Association came to the high desert of Eastern Oregon at Jordan Valley. The activities were hosted by WAA member, Glen Fretwell, at his RV/trailer park. Glen was assisted by many family and friends to make all participants feel welcome. To Glen and all who helped him: thank you for all the hospitality shown to WAA. Special thanks to Becky Smith (Glen’s sister) and those who helped her for the daily breakfast/lunch buffets and the delicious Saturday evening dinner.



Vickie McConnell

There were ISAC contests held every morning, Friday through Monday. The mornings started with target practice as the buffet was set up and family/friends began arriving to watch the ISAC competitions. There were usually 10-12 spectators sitting in line...and quiet as church mice. Doug Bassett usually led ISAC scoring for the men, but Angelo Robledo scored 76 on Monday, not a personal best, but far overshadowed by not missing the target at all for all ten throws—something he had never done. The largest group of spectators was also present on Labor Day and held their breath through quite a battle between Sue Mercer and Glen’s niece, Vickie Jo McConnell. Through 5 rounds, neither Sue nor Vickie had any misses and Sue led by only 3. At 20 meters, 1st throw, 2nd throw, 3rd throw—still no misses. Everyone is now collectively holding their breaths: 4th throw—no misses. And the 5th throw, Sue hits a 6 and Vickie Jo a 7. Final score: Sue 78X and Vickie Jo 76! What a way to end the weekend!

The dinner served on Saturday was followed by two speakers. The first speaker was Mike Hanley. Mike has written *Owyhee Trails: The West’s Forgotten Corner*. Mike related stories of the earliest native American inhabitants. Ancestors of the current residents of Jordan Valley came to the area to mine gold and silver, or to support the miners with stores, banks, and other services. Many who arrived first for mining, later turned to cattle ranching. Mike went on to relate stories of mining, ranching, ghost towns, the Civil War, and even The Sundance Kid who frequented the area at times. Mike told the story of the youngest member of Lewis and Clark’s expedition, Jean Baptiste Charbonneau, born to Sacagawea, the lone woman and native American guide for Lewis and Clark. After getting an education and traveling in European, Jean Baptiste returned to the Jordan Valley area as a trapper. He is buried in a nearby ghost town. The second speaker was Angelo Robledo who talked about his Masters thesis studying flight characteristics of the ancient Yukon darts with their various dimensions. Fascinating study, but you will have to wait until Angelo writes his article for The Atlatl—look for it in the future.



After Dinner speakers, Mike Hanley (Left) and Angelo Robledo (Right)



With only two board members (Angelo Robledo and Frank Lukes) and no officers available, a board meeting was not possible., Angelo led an informal general meeting with a review of reports, old, and new business. One motion was made and passed requesting the Board of Directors review the 1998 Liability Form for possible revision of the designated age for parent/guardian signatures (18 years, not 16, seems to be the age required to sign contracts in almost all states).

On Sunday Mike Hanley conducted a tour at his ranch where he has collected and restored a number of wagons, buggies, and other vehicles used by the early residents to move their belongings and to carry out daily activities, Seeing Mike’s collection and hearing him speak of the history makes one appreciate the importance of the land and its preservation for the Jordan Valley residents.

Sue Mercer and Doug Bassett took an afternoon trip and were awed by Leslie Gulch canyon. Ask to see Sue’s pictures! One could pass several weeks in Southeastern Oregon traveling through mountains, Owyhee canyons, ghost towns, and the National Historic Oregon Trail Interpretive Center. Again, thanks to Glen for hosting the Annual Meeting and opening up the possibilities of southeastern Oregon.



Additional Pictures from The Annual Meeting — Jordan Valley, OR



From Left to Right — Sue Merrcer, Gail Kitch, Bob Kitch



From the Mike Hanley Collection



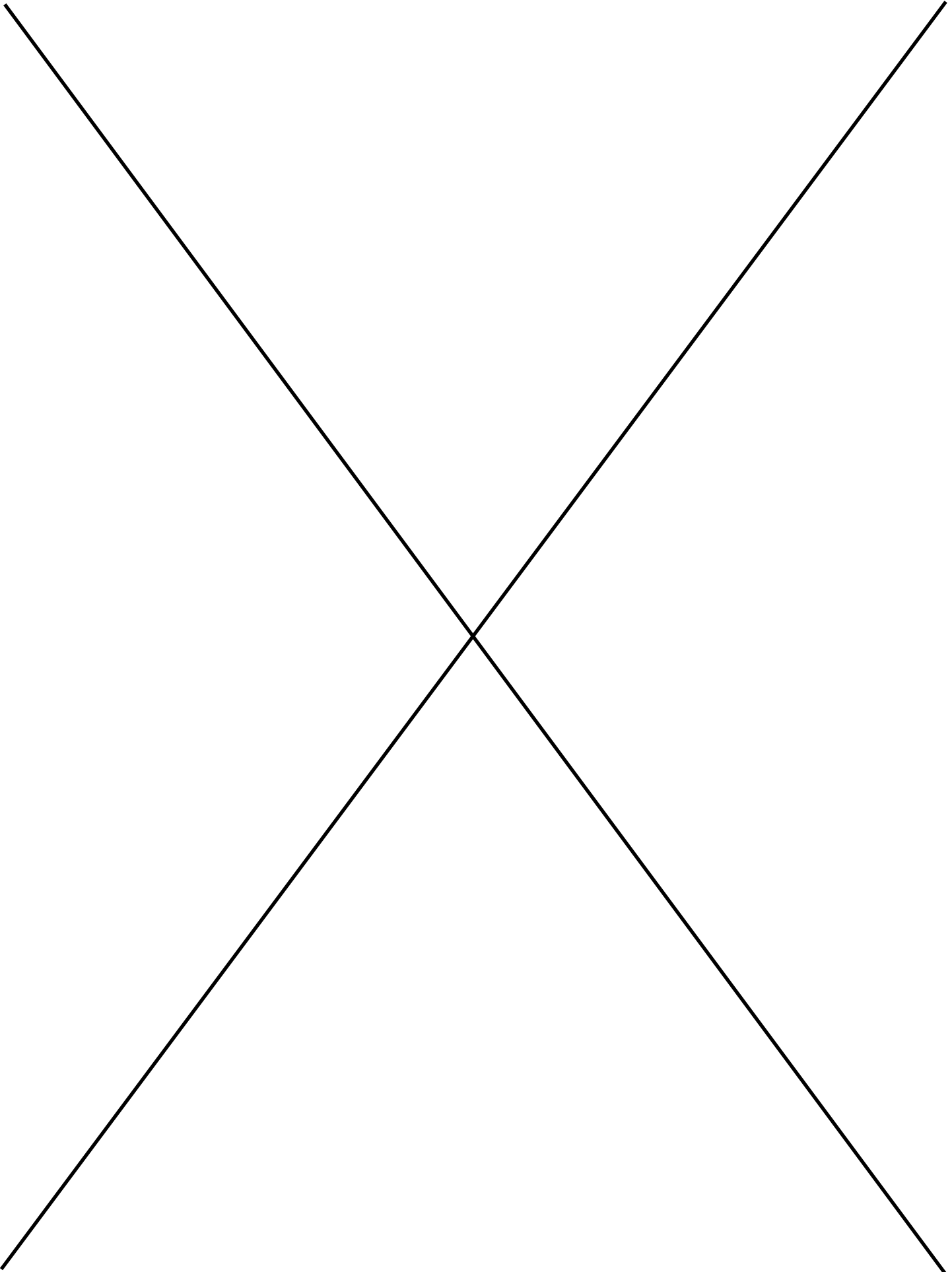
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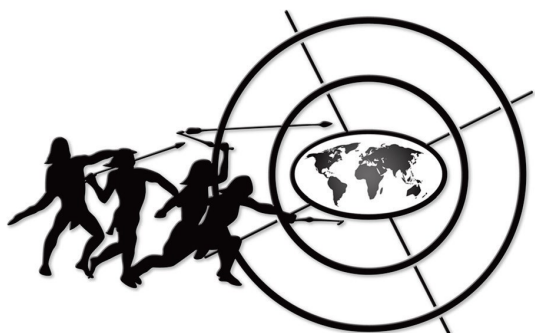
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The WORLD ATLATL ASSOCIATION, Inc.

The date that your membership expires follows your name in the address above.

