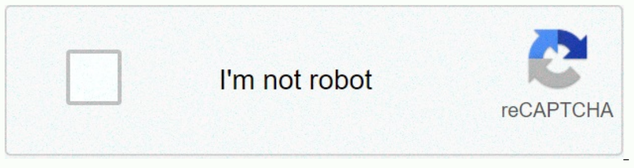

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Atlatl weight pictures

ATLATL BARIES Operation and Classification by William R. Atlatl Bob Perkins INTRODUCTION Atlatl weights, both known and suspicious, is an exciting and frustrating topic. Based solely on the misinterpretation and lack of understanding around them, and their appearance in the archaeological archive, discussion and confusion as to their purpose has set them apart from most other objects. There are a variety of atlatl weight types and suspicious types found, quite interesting, mainly in the United States. Their distribution appears to be contained in the forty-eight states with a small overlap north in Canada, and south of the Rio Grand River in Mexico. But in general, the political boundaries of the lower 48 United States hold most of the atlatl weights of the world. As far as I know, atlatl weights don't happen outside of North America, although atlatls certainly do. Atlatls in a variety of styles are found more or less around the world. The first examples date back to well over 20,000 BP in Europe, and the atlatl is still used today by natives of Papua, New Guinea and Australian natives. But regardless of where atlatls are located, nowhere except North America lie with burdens associated with them. The confusion around atlatl weights begins with the many theories as to their purpose. The most popular of these seems to be that it is an opposite balance. This theory suggests that weight acts as an adjustment to balance the atlatl and arrow in the palm of the hand. Many other theories have been put forth, mainly based on the idea that clinging to the weight will push the arrow a longer distance. Experimentation with many of these theories tended to show opposite results until the theory of last resort, the hunting magic, was finally applied. When everything else fails, it is a charm, the owner believed that the weight atlatl possessed hunting magic. No doubt about it, some weights are quite beautiful and delicately polished, and I'm sure their owners even believed they possessed magical power. That's how we humans are. We're weird like this. However, not all atlatl weights are beautiful. Many are rather rough finished and some are just rounded river rock. Even these might hold some special significance to someone, but the charm theory simply doesn't hold. Atlatl weights have a function, and that function has to do with their mass. BARIUM THEORIES This brings us into contradiction to the term atlatl weight. Most of the time no atlatl weights refer to every descriptive term imaginable except - mass. To apply the term 'weight' to an object and neglect to indicate its mass would appear to a man of thought. There is also the confusion of what is an atlatl weight. This is more of a word game than a running theme. Several Several and functional names have been applied to known and suspicious salt weights. Depending on where you live or how you became familiar with atlatl weights can refer to all weights in general as Banner Stones, boat stones, counter weights, bird stones, etc. This is very confusing. Not long ago, I was asking a friend of mine who lives in the East a few questions about Banner Stones. Our conversation. became quite confused until we realized that I was talking about a very specific type of weight atlatl and was trying to give me answers about atlatl weights in general. The center of all this confusion lies with disagreement over the true purpose of weight atlatl. In my studies on atlatl and arrow I have found that they possess a deceptively advanced technology. The basic technology, the mechanical base of the system, is the flexible arrow. Over time, people have tinkered and toyed with the system improving and refining to a very high degree. There are many levels of technology that have evolved from the basic mechanical foundation. Just as modern rifles evolved from muzzle loaders, to breach loaders, to lever actions to automatics, atlatl weights generally represent a very advanced level of atlatl and arrow system technology. In fact, some weight types represent a higher degree of technology than others, a technology within a technology. So how is the system improved by applying a weight? Atlatl weights hold mass and when connected to an atlatl that mass affects the system. But unlike popular experimentation you just can't strap a weight onto any old atlatl and expect a miracle. Atlatl weights do not have sufficient mass to significantly affect the speed at which an atlatl oscillates in order to influence a certain degree of timing based on speed. The fact that a weight increases the moment of inactivity of an atlatl is just that, a fact. What's he doing good? Why don't you make a thicker atlatl? And as for an opposite balance, this theory applies only when the atlatl and arrow are at rest and not used. The total system of atlatl and arrow, with or without weight, is quite light, significantly less than a kilo. The presence or absence of an atlatl weight makes no difference as to how long or how stable an atlatl and arrow can take place. A person can hold the system firmly, with or without the weight, for as long as that person can keep it stable. Which is about six minutes the last time I tried. After that, your hand cramps and sleeps, making any temptation throw ridiculously ineffective. So forget it! The purpose of the weight mass is to resist acceleration. To understand the function of resistance acceleration a revision of the technological evolution of atlatl and arrow must come first. Acceleration Acceleration basic mechanics of the system depend solely on the flexibility of the arrow. When the arrow is accelerated by the atlatl it bends and stores energy like a spring. At some point during the swing, after the atlatl is no longer accelerating enough to cause further compression of the arrow, the arrow then uses its stored energy to push itself away from the atlatl. This allows the arrow a smooth separation between itself and the atlatl, giving it an effective and powerful launch. One of the great evolutionary improvements in the system was the overlap of flexibility in atlatl. If this is successfully integrated into the system, with the degree of flexibility of both atlatl and velvet in a functional relationship between them, their function will be similar to that of a diver diving off a spring board. In this system the diver's legs are bent, like the arrow, and the energy of the shops to be used to push away from the diving board. The diving board, like a flexible atlatl, is also bent back, storing the energy used to push the diver away from the board. With the diver and diving board pushing each other away at the same time, the diver's start is significantly higher, smoother, and more powerful than if the diver had used a fixed rigid platform. When the appropriate mathematical relationships of length and flexibility are achieved between atlatl and dart, the results are a long and noticeably flexible arrow. But the atlatl on the other hand is, at about a third of the length of the arrow, short and somewhat stiff. The correct flexibility of an atlatl is rather subtle. The atlatl that is properly bent seems too hard to be of any benefit. This is where the atlatl weight is applied to the system. What atlatl weights achieve in the system with the flexible atlatl are rather sophisticated and intelligent, representing a level of engineering skills that is impressive, even by today's standards. Its mass, located approximately in the middle of the atlatl axis, resists acceleration, (Newton's first law movement) and forces the atlatl to divert further than is possible without it. This allows the atlatl to store more spring energy used to push the arrow away from the atlatl. The position of the weight along the atlatl axis affects the amount and rate at which energy is stored and released. Therefore, atlatl weight is a timing device that affects the amount and rate at which the spring energy of an atlatl is stored and released during the spring energy of an arrow. This is its main function. Its effects on the system are not so deep as to push the arrow at a noticeably higher distance or speed, although higher speeds are achieved. (A larger atlatl will significantly increase the speed and distance of an arrow at a cost of accuracy). When properly integrated into the system, atlatl atlatl improves the performance of this system in terms of efficiency. Smoother, more controlled and powerful launches make for better accuracy. And ultimately it's about getting the goal that counts. TRAVEL Now that the atlatl weight function has been fixed consistently, the problem of classification can be more easily addressed. Archaeologists tried to classify the weights according to their shape and technique. That's what they failed miserably on. Not only have the same atlatl weights been placed in a Type III category by one archaeologist and a Category I by another but some categories contain only one known example. In these cases, I have set the framework for a new weight classification system based solely on function and result. The base weight of atlatl, or type I in the atlatl Perkins weight classification, is a single point mass weight with a mass of about 65 g. Mathematically a mass can boil down to a point where its influence is applied to atlatls flexibility. No matter how it is slotted, pierced, shaped, or hfted in its atlatl final position is that point at which its mass affects the mechanics of the system. Type I has subcategories of multi-point mass weight. Type Ib will be two-point mass weights whose combined mass is approximately 65 g. These would be along the atlatl axis to make a smoother response to the bending of the atlatl with distributed point masses as opposed to a concentrated mass. There may be further subtypes with three and even four distributed point masses, but as the base mass of 65 g. divides the influence of smaller weights becomes more and more ineffective. The improvement in relation to multi-point masses in the evolution of this technology is the type II weight. Its mass of approximately 65 g is distributed along it and, given its unique inertia torque and method, affects the flex atlatls in a single significant point. Type II causes a thinner, more accurate response to the bending of the atlatl, achieving with a weight what was attempted with several. This brings us to the most exciting weight to be classified. The stealth weight type III. More commonly known as Banner Stone, there is some disagreement as to whether it is atlatl weights or not. Based mainly on data from Indian Knoll, KY where Banner Stones have been recovered under and in alignment with atlatl hooks and horn handles, I believe that Banner Stones are indeed atlatl weights. Type III - stealth weights actually. Their mass tends to be somewhat larger than other weights at about 80 g, but this can be resolved quite easily when considering the likely length of the relevant atlatls. Atlatls from United States, which type I and II II weights tend to represent, are about 60 cm in length. Atlatls from the Eastern United States on the other hand, seem to have been somewhat smaller at about 40 cm. They do not have the mechanical advantage of length, Eastern atlatls seem to have used greater mass in order to affect the flex properly. Mechanically the mass of the Banner Stones tend to affect the system like a type I weight, but their shape has the interesting effect of gagging the noise caused by the swing of the atlatl. When a stick or atlatl swings a sonic zip-like noise is produced. It seems that when a Stone Banner is attached this noise is significantly reduced, creating more of a low woof frequency as opposed to high frequency zip sound. One would think that because of the larger surface created by the banner stone an increase in noise would lead. But those who know physics will tell you that what could be expected is not necessarily what happens. The experiment Since the first discovery of this effect I have demonstrated to many people. At distances anywhere from 5 to 15 meters I have asked observers to hear about a difference in sound levels between an atlatl equipped with a type III stealth weight and an atlatl with only a type I mass point. After three shake-ups with each all the observers reported a significant difference in that the stealth salt was noticeably quieter than the other. On the case off hand that my observers were predisposed to report a difference in sound by being asked to listen, I started asking subsequent observers to watch for a difference between the test atlatls. The fact that these observers were asked to watch for a result, as opposed to the hearing, resulted in them tending to be more hesitant when reporting what was observed after having the atlatls wobble in front of them. But again in all cases, they reported that the atlatl with the Banner Stone was significantly quieter than the other atlatl. This result suggests that the effect was so profound that observers led to believe that they were looking for a result with their eyes, however they noticed an effect with their ears. This type of experimentation that is more qualitative than quantitative merely suggests rather than confirms the effect of healthy suppression by the weight of Banner Stone. Under these circumstances I began to arrange for a low budget electronic audio test to be conducted at the 1992 Rabbit Stick Rendezvous. To my surprise, I arranged to have sound equipment from Ricks College at my disposal for this purpose. The equipment provided was so sophisticated that its technology was only available in the last few years. Years. The microphones, about three feet long and 4 inches in diameter could, on a calm day longer, than likely detect the sound of a needle falling into one The same two atlatls were used for this experiment as for observational studies. Starting at 5 meters and increasing the distance five meters at a time to a total of 25 meters, each atlatl swung three times with and without the use of darts. A total of ten separate comparisons were made and recorded on magnetic tape. The five comparisons that were made shooting darts over the head of the technical handling of the microphone were noted, for the record, as they all travel about the same distance. This was done in case it was suggested (as it was then) that I was swinging the Stealth atlatl differently from the other atlatl. All things taken into account, the deviation in pitching was kept to an absolute minimum. In fact, I maintained a degree of surprise consistency even for myself, since I was focused on not hitting the sound man more than anything else during this part of the experiment. However, it should be noted that all darts traveled over the head and landed behind this trust sole at surprisingly stable height and distance respectively. THE RESULT The data recorded on tape were analysed by the computer for all ten comparisons; Although a mathematical section of this result has not yet been formulated, the focus of maximum sound suppression appears to be between 20 and 25 meters, indicating a result known as overlay of sound waves. But no matter what the math is, the result is definitely present. Although these experiments cannot confirm that the effect of healthy suppression was the deliberate function associated with the shape of banner stones, they certainly go a long way to show it. And as far as the real advantage of silent atlatls is concerned, I'll leave that to other researchers to look at, since they no longer have the opposite theory balance to consider. William R. Atalanta Bob Perkins lives in Manhattan, Montana. Atlatl Weight: Operation and Classification was published in the Bulletin of Primitive Technology, issue #5, Spring 1993. See also: Learn to make your own Atlatl! The Atlatl and Dart: An Ancient Hunting Weapon Stealth Technology 1992 BC Check out Atlatl Bob's Atlatls Return to the SBT Articles, Books & Back Topics Home Page

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